



M S Ramaiah University of Applied Sciences

**Programme Structure and Course Details
of
Bachelor of Dental Surgery**

BATCH 2022 Onwards


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M.S. Ramaiah University of Applied Sciences
Bangalore - 560 054

M S Ramaiah university of Applied Sciences

Faculty of Dental Sciences




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M.S. Ramaiah University of Applied Sciences
Bangalore - 560 054

University's Vision, Mission and Objectives

The M. S. Ramaiah University of Applied Sciences (MSRUAS) will focus on student-centric professional education and motivates its staff and students to contribute significantly to the growth of technology, science, economy and society through their imaginative, creative and innovative pursuits. Hence, the University has articulated the following vision and objectives.

Vision

MSRUAS aspires to be the premier university of choice in Asia for student centric professional education and services with a strong focus on applied research whilst maintaining the highest academic and ethical standards in a creative and innovative environment

Mission

Our purpose is the creation and dissemination of knowledge. We are committed to creativity, innovation and excellence in our teaching and research. We value integrity, quality and teamwork in all our endeavors. We inspire critical thinking, personal development and a passion for lifelong learning. We serve the technical, scientific and economic needs of our Society.

Objectives

1. To disseminate knowledge and skills through instructions, teaching, training, seminars, workshops and symposia in Health and Allied Sciences, Engineering and Technology, Art and Design, Management and Commerce, Physical and Life Sciences, Arts, Humanities and Social Sciences to equip students and scholars to meet the needs of industries, business and society
2. To generate knowledge through research in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences to meet the challenges that arise in industry, business and society
3. To promote health, human well-being and provide holistic healthcare
4. To provide technical and scientific solutions to real life problems posed by industry, business and society in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences
5. To instill the spirit of entrepreneurship in our youth to help create more career opportunities in the society by incubating and nurturing technology product ideas and supporting technology backed business
6. To identify and nurture leadership skills in students and help in the development of our future leaders to enrich the society we live in
7. To develop partnership with universities, industries, businesses, research establishments, NGOs, international organizations, governmental organizations in India and abroad to enrich the experiences of faculties and students through research and developmental programmes



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Programme Specifications: Bachelor of Dental Surgery (BDS)

Faculty	Dental Sciences
Department	Dental
Programme Code	011
Programme Name	Bachelor of Dental Surgery
Dean of the Faculty	Dr. Silju Mathew

1. **Title of the Award:** Bachelor of Dental Surgery
2. **Mode of Study:** Full-Time
3. **Awarding Institution /Body:** M. S. Ramaiah University of Applied Sciences, Bengaluru
4. **Joint Award:** Not Applicable
5. **Teaching Institution:** Faculty of Dental Sciences, M. S. Ramaiah University of Applied Sciences, Bengaluru
6. **Date of Programme Specifications:** July 2022
7. **Date of Programme Approval by the Academic Council of MSRUAS:** 14th July 2022
8. **Next Review Date:** July 2027
9. **Programme Approving Regulating Body and Date of Approval:**
10. **Programme Accredited Body and Date of Accreditation:**
11. **Grade Awarded by the Accreditation Body:**
12. **Programme Accreditation Validity:**
13. **Programme Benchmark:**
14. **Rationale for the Programme**

The art and science of dentistry, though considerably advanced from where it began, is still in a progressive stage of research. Awareness of dental health amongst the population, is increasing by the day, even in semi urban and non-urban areas with increased demand for conservative and esthetic treatment. Dentists form a crucial component of the healthcare delivery system of the country. While the WHO states that the ideal ratio of dentist to population is 1:7500, the current proportions are at 1:13,500 in urban areas based on a report from the DCI. This gap is much more in rural areas where it can be as high as 1: 150,000. Therefore, the education of dentistry is in greater demand than ever before. At the same time, standards of healthcare and education of the healthcare provider have been escalating in India, to match world standards.

There are a large number of institutions world over which are producing dentists and yet, there is a shortage of quality dental graduates who have had exposure to patients, to state of art clinical equipment and faculty focused on research, or all.

The FDS at MSRUAS has state of art clinical equipment; such as CBCT, LASER, Microscope, Research Microscope, Cadaveric Lab, Immunohistochemistry lab, Skill labs and others, that is constantly upgraded to be at par and best in the country. This with excellent clinical exposure to patients in addition to our rural health programs, group research project and innovative teaching methodologies with stringent quality control protocols gives our students a competitive

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

advantage. The value additions of patient safety, basic life support, ethics and jurisprudence, advanced information communication technologies, simulation labs and inter-university internships raise the bar of education for our students preparing them better for employment and future research.

The presence of other faculties of applied sciences on the campus enables the student to seek education beyond the conventional curriculum; for example, the use of 3D printing and rapid prototyping from the Faculty of Engineering and Technology, conduction of translational research with Faculty of Pharmacy to help encounter clinical problems with innovative solutions. The presence of a 1400 bed hospital on the same campus offers invaluable interdisciplinary clinical training. This enables our graduates to take an entrepreneurial route, management positions in hospitals, employment in the corporate sector or armed forces, and prepare them for higher education. Faculty of Dental Sciences at MSRUEAS is well equipped to offer this Bachelor of Dental Surgery programme to address the oral health problems of society through highly motivated and well prepared graduates.

15. Programme Mission

The purpose of the programme is to create innovative problem solvers in multi-disciplinary settings, entrepreneurs and leaders who apply their knowledge, understanding, cognitive abilities, practical and transferable skills gained through systematic, flexible and rigorous learning in the chosen academic domain.

16. Graduate Attributes (GAs)

- GA-1. Health science knowledge:** Ability to apply knowledge of biological sciences to solve problems in oral health care
- GA-2. Problem Analysis:** Ability to analyze maxillofacial health care problems, interpret data and arrive at meaningful conclusions involving scientific inferences
- GA-3. Conduct Investigation of Complex Problems:** Ability to understand and solve complex oral health care problems by conducting experimental investigations, research or project
- GA-4. Modern Tool Usage:** Ability to apply appropriate tools and techniques and understand utilization of resources appropriately to oral health care solutions
- GA-5. Design and Development of Solutions:** Ability to design an oral health care system or establishment, or practice to meet desired needs considering public health and safety, and the cultural, societal, and environmental considerations
- GA-6. Oral Health Care Professionals and Society:** Ability to understand the effect of maxillofacial health care solutions on legal, cultural, social and public health and safety aspects. Ability to address oral health care issues at a community level
- GA-7. Environment and Sustainability:** Ability to develop sustainable solutions and understand their effect on society and environment
- GA-8. Ethics:** Ability to apply ethical principles to healthcare practices and professional responsibilities



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GA-9. Individual and Teamwork: Ability to work as a member of a team, to plan and to integrate knowledge of various disciplines in health care and to lead teams in multidisciplinary settings

GA-10. Communication: Ability to make effective oral presentations and communicate technical ideas to a broad audience using written and oral means

GA-11. Project Management and Finance: Ability to lead and manage multidisciplinary teams by applying management principles

GA-12. Life-long learning: Ability to adapt to the changes and advancements in technology and engage in independent and life-long learning

17. Programme Outcomes (POs)

BDS graduates will be able to:

- PO-1. Acquire knowledge on the development, structure and function of the stomatognathic system both in health and disease and to relate their effect to the general state of health of the patient
- PO-2. Diagnose and manage various common dental problems encountered in general dental practice and demonstrate competence in pain control and anxiety management during dental treatment
- PO-3. Perform and interpret required investigative procedures
- PO-4. Select appropriate diagnostic or treatment methods based on scientific inferences to solve oral health problems
- PO-5. Participate as a team member, in the implementation of interdisciplinary treatment solutions and National Health Programmes
- PO-6. Empathize with the needs of the individual patient and the community and work together to bring about a positive change in society
- PO-7. Establish dental practice to meet the oral health needs of the society within the norms of environmental safety
- PO-8. Maintain high standard of professional ethics and conduct and apply these in all aspects of professional life
- PO-9. Cope in various situations, irrespective of the different cultures or constraints involved and develop leadership skills by means of interaction with peers and leaders within and outside the University
- PO-10. Present posters, papers in National and International forums
- PO-11. Conduct research projects and experiments to solve complex oral health problems
- PO-12. Develop an attitude to seek lifelong learning to update knowledge and professional skills

18. Programme Goal

The Programme Goal is to produce graduates with clinical expertise having critical, analytical and problem solving skills and ability to think independently to pursue a career in Oral health care profession.

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19. Program Educational Objectives (PEOs)

The objectives of the Bachelor of Dental Surgery Programme are to:

PEO-1. Apply knowledge of the development, structure and function of the teeth, oral cavity, jaws and associated tissues both in health and disease to restore oral and general health

PEO-2. Diagnose and manage various common dental problems encountered in general dental practice.

PEO-3. Maintain high standard of professional ethics and conduct and apply these in all aspects of professional life.

PEO-4. Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.

20. Programme Specific Outcomes (PSOs)

At the end of the BDS (Bachelor of Dental Surgery) programme, the graduate will be able to:

PSO -1. Attain strong foundation in basic and applied medical and dental sciences to enable them to appraise oral health in the context of general health

PSO-2. Efficiently diagnose and treat common dental problems encountered in general dental practice

PSO-3. Keep abreast with recent advances in materials, technology, drugs and treatment approaches to ensure global standards of health care for the well-being and welfare of society

PSO-4. Imbibe strong human values and social, interpersonal and leadership skills required for professional success in evolving global professional environments

21. Programme Structure:

I Year BDS							
Sl. No.	Code	Course Title	Theory (h/W/Y)	Tutorials (h/W/Y)	Practical (h/W/Y)	Total Credits	Max. Marks
1	BDC101A	General Human Anatomy including Embryology, Osteology and Histology	3	--	5	10	400
2	BDC102A	General Human Physiology	2	--	2	8	200
3	BDC103A	Biochemistry, Nutrition and Dietics	2	--	2	6	200
4	BDC104A	Dental Anatomy, Embryology and Oral Histology	3	--	8	10	400
5	BDC204A	Dental Materials	1	--	2	2	--
6	BDC205A	Preclinical Prosthodontics and Crown & Bridge	1	--	2	2	--
7	BDF101A	Law for Dental Professionals	1	--	0	1	50
Total			13	0	21	39	1250
Total number of contact hours per week			34				

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II Year BDS							
Sl. No.	Code	Course Title	Theory (h/W/Y)	Tutorials (h/W/Y)	Practical (h/W/Y)	Total Credits	Max. Marks
1	BDC201A	General Pathology	2	--	2	6	200
2	BDC202A	Microbiology	2	--	2	6	200
3	BDC203A	General and Dental Pharmacology and Therapeutics	2	--	2	5	400
4	BDC204A	Dental Materials	2	--	4	9	400
5	BDC205A	Preclinical Prosthodontics and Crown & Bridge	1	--	5	12	200
6	BDC206A	Preclinical Conservative Dentistry	1	--	5	8	200
7	BDC303A	Oral Pathology and Oral Microbiology	1	--	--	1	--
8	BDF201A	Basic Life Support	-	--	1	1	50
Total			11	0	21	48	1650
Total number of contact hours per week			32				
III Year BDS							
Sl. No.	Code	Course Title	Theory (h/W/Y)	Tutorials (h/W/Y)	Practical (h/W/Y)	Total Credits	Max. Marks
1	BDC301A	General Medicine	2	--	2	7	400
2	BDC302A	General Surgery	2	--	2	7	400
3	BDC303A	Oral Pathology and Oral Microbiology	2	--	2	8	400
4	BDF301A	Patient Safety Curriculum		--	1	1	50
5	BDF302A	Community Orientation Program	1	--	1	5	100
6	BDR301A	UG Group Research	1	--	1	8	200
7	BDC401A	Oral Medicine and Radiology	1	--	2.5	3	--
8	BDC402A	Pediatric and Preventive Dentistry	1	--	2.5	3	--
9	BDC403A	Public Health Dentistry	1	--	--	1	--
10	BDC404A	Orthodontics & Dentofacial Orthopedics	1	--	2.5	3	--
11	BDC405A	Oral & Maxillofacial Surgery	1	--	2.5	3	--
12	BDC406A	Periodontology	1	--	2.5	3	--
13	BDC407A	Prosthodontics and Crown & Bridge	1	--	2.5	3	--
14	BDC408A	Conservative Dentistry and Endodontics	1	--	2.5	3	--
Total			16	0	26.5	58	1550
Total number of contact hours per week			42.5				




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IV Year BDS							
Sl. No.	Code	Course Title	Theory (h/W/Y)	Tutorials (h/W/Y)	Practical (h/W/Y)	Total Credits	Max. Marks
1	BDC401A	Oral Medicine and Radiology	1	--	4	6	400
2	BDC402A	Pediatric and Preventive Dentistry	1	--	4	6	400
3	BDC403A	Public Health Dentistry	1	--	4	8	400
4	BDC404A	Orthodontics & Dentofacial Orthopedics	1	--	4	6	400
5	BDC405A	Oral & Maxillofacial Surgery	2	--	4	7	400
6	BDC406A	Periodontology	2	--	4	7	400
7	BDC407A	Prosthodontics and Crown & Bridge	2	--	4	8	400
8	BDC408A	Conservative Dentistry and Endodontics	2	--	4	8	400
9	BDF401A	Practice Observership	--	--	1	3	100
Total			12	0	33	59	3300
Total Number of Contact Hours per week			45				

Ability Enhancement Compulsory Courses (AECC):

Ability Enhancement Compulsory Courses (AECC) are offered to undergraduate students and is spread across from I Year to IV BDS. These courses are mandatory and will be assessed accordingly.

Sl.No.	Course Code	Course Title
1	BDF101A	Law for Dental Professionals
2	BDF201A	Basic Life Support
3	BDF301A	Patient Safety Curriculum
4	BDF302A	Community Orientation Program
5	BDF401A	Practice Observership

V Year BDS – Internship							
Sl. No.	Code	Course Title	Theory (h/W/Y)	Tutorials (h/W/Y)	Practical (h/W/Y)	Total Credits	Max. Marks
1	BDI401A	Oral Medicine and Radiology	--	--	4	3	100
2	BDI402A	Pediatric and Preventive Dentistry	--	--	4	3	100
3	BDI403A	Public Health Dentistry Including Comprehensive Oral Health	--	--	4	4	100
4	BDI404A	Orthodontics & Dentofacial Orthopedics	--	--	4	3	100
5	BDI405A	Oral & Maxillofacial Surgery	--	--	4	3	100
	BDI406A	Periodontology	--	--	4	3	100
	BDI407A	Prosthodontics and Crown & Bridge	--	--	4	5	100

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8	BDI408A	Conservative Dentistry and Endodontics	--	--	4	5	100
9	BDI409A	Oral Pathology and Oral Microbiology	--	--	4	1	100
10	BDI410A	Accident & Emergency	--	--	4	1	100
11	BDI411A	Rural Posting	--	--	4	4	100
12	BDE4XXA	Professional Core Elective 1	0.5	--	0.5	4	100
13	BDE4YYA	Professional Core Elective 2	0.5	--	0.5	4	100
14	BDO401A	Open Elective	1	--	--	3	--
Total			2	0	41	46	1300
Total number of contact hours per week			43				

V Year BDS: Internship: Professional Core Electives Group 1 - BDE4XXA				
Sl. No.	Code	Course Title	Total Credits	Max. Marks
1	BDE401A	Management of Oral Mucosal Lesions	4	100
2	BDE403A	Lasers in Periodontology	4	100
3	BDE405A	Hospital Pediatric Dentistry	4	100
4	BDE407A	Introduction to Implantology	4	100
5	BDE409A	Aesthetic Dentistry	4	100
6	BDE411A	Practice Management	4	100
7	BDE413A	Surgical Extraction	4	100
8	BDE415A	Orthodontics for General practice	4	100
9	BDE417A	Routine Tissue Processing	4	100

V Year BDS: Internship: Professional Core Electives Group 2 - BDE4YYA				
Sl. No.	Code	Course Title	Total Credits	Max. Marks
1	BDE402A	Basics of CBCT in Implant Dentistry	4	100
2	BDE404A	Periodontal Surgery for Clinician	4	100
3	BDE406A	Comprehensive Pediatric Rehabilitation	4	100
4	BDE408A	Basics of Fixed Partial Denture	4	100
5	BDE410A	Practice Based Endodontics	4	100
6	BDE412A	Data Management	4	100
7	BDE414A	Management of Medically Compromised Patients	4	100
8	BDE416A	Preventive Orthodontics	4	100
9	BDE418A	Exfoliative Cytology in Pathologic Diagnosis	4	100

Note:

1. Students are required to select **two** Professional Core Elective Courses in the V year BDS during internship, one each from PCE-1 and PCE-2 Groups.

22. Open Elective Courses

A number of Open Elective Courses from Faculties of Dental Sciences, Engineering, Management and Commerce, Art and Design, Hospitality Management and Catering Technology, Pharmacy are

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25.2.1 Course Having a Combination of Theory and Practical/Clinical

For a course that contains the combination of theory and practical/clinical sessions, the scheme for determining the CE marks is as under:

For a Course having a Combination of Theory and Laboratory Sessions				
SC1 (Theory)	SC2 (Theory)	SC3 (Assignment)	SC4 (Practical/ Clinical)	SC5 (Practical/ Clinical)
25 Marks	25 Marks	50 Marks	50 Marks	50 Marks

There shall be four subcomponents, each carrying 25 marks. Out of these, there shall be two term-tests and an assignment carrying 50marks to evaluate the students' performance in theory. The fourth and fifth subcomponent shall be set to evaluate the students' performance in the Practical / Clinical for 50 marks each.

The theory assignment can be of any of the following types:

- Online Test
- Problem Solving
- Field Assignment
- Open Book Test
- Portfolio
- Reports
- Case Study
- Group Task
- Any other

The Practical / Clinical subcomponent can be of any of the following types:

- Practical / Clinical Work Record
- Practical / Clinical Exercises
- Pre-Clinical Mannequin Simulation
- Computer Simulations
- Creative Submission
- Virtual Labs
- Viva / Oral Exam
- Lab Manual Report
- Any other (e.g. combinations)

After the four subcomponents are evaluated, the CE component marks are determined as:

CE Component Marks = 10% of the total CE marks scored



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25.2.2 Pre- Clinical Laboratory Course

For Pre-Clinical laboratory courses, the scheme for determining the CE marks is as under:

Laboratory Course	
SC1	SC2
50 Marks	50 Marks

The subcomponents can be of any of the following types:

- a) Pre-Clinical laboratory Work Record
- b) Pre-Clinical laboratory Exercises
- c) Pre-Clinical Mannequin Simulation
- d) Computer Simulations
- e) Creative Submission
- f) Virtual Labs
- g) Viva / Oral Exam
- h) Lab Manual Report
- i) Any other (e.g. combinations)

After the subcomponents of CE are evaluated, the CE component Marks are determined as:

CE Component Marks = 20% of the total CE marks scored

25.2.3 Assessment for Internship, UG Group Project and Professional Core Elective

There are two components for assessment in these course:

- i. **Component 1 (CE)** will be evaluation of case records, for 50% weightage.
- ii. **Component 2** will be evaluation of Assignment/Case presentation/Technical report for 50% weightage

The assessment questions are set to test the learning outcomes. In each component certain learning outcomes are assessed. The following table illustrates the focus of learning outcome in each component assessed

Internship and Professional Core Elective	
SC1 Log Book	SC2 Assignment/ Case Presentation
50% weightage.	50% weightage.

25.2.4. Assessment for Ability Enhancement Compulsory Courses (AEC);

The assessment for AEC involves Theory/ Practical term test/Case/Project presentation. The assessment questions are set to test the learning outcomes. In each component certain learning outcomes are assessed. The following table


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illustrates the focus of learning outcome in each component assessed.

Ability Enhancement Compulsory Courses
SC1 Term Test/ Case/ Project Presentation
100%weightage

Student Support for Learning

1. Course Notes
2. Reference Books in the Library
3. Magazines and Journals
4. Internet Facility
5. Clinical / Super Specialty facility
6. Computing Facility
7. Laboratory Facility
8. Workshop Facility
9. Staff Support
10. Lounges for Discussions
11. Any other support that enhances their learning

26. Quality Control Measures

1. Review of Course Notes
2. Review of Question Papers and Assignment Questions
3. Student Feedback
4. Moderation of Assessed Work
5. Opportunities for students to see their assessed work
6. Review by external examiners and external examiners reports
7. Staff Student Consultative Committee Meetings
8. Student exit feedback
9. Subject Assessment Board (SAB)
10. Programme Assessment Board (PAB)



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27. Programme Map (Course-PO-PSO Map)

Year	Course Title	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
I	General Human Anatomy including Embryology, Osteology and Histology	3	2	1										3	2		
I	General Human Physiology	3	2	2										3	2		
I	Biochemistry, Nutrition and Dietics	3	2	2										3	2		
I	Dental Anatomy, Embryology and Oral Histology	3	2	2										3	2		
I	Law for Dental Professionals						3	2	2								2
II	General Pathology	3	2	2										3	2		
II	Microbiology	3	2	2										3	2		
II	General and Dental Pharmacology and Therapeutics	3	2	2	1									3	2	2	
II	Dental Materials		2		1			2							2	2	
II	Preclinical Prosthodontics and Crown & Bridge		2		1			2							2	2	
II	Preclinical Conservative Dentistry		2		1			2							2	2	
II	Basic Life Support		2		2			2							2		
III	Oral Pathology and Oral Microbiology	3	2	2				2						3	2	1	
III	General Medicine	3	2	2				2						3	2	1	1
III	General Surgery	3	2	2				2						3	2	1	1
III	Patient Safety Curriculum					1	2	3	2						2		2
III	Community Orientation Program					3	3	1		3							2
III	UG Group Research					3			2	1	3	3	2			2	2
III	Practice Observership						2	3	1	1							2



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IV	Oral Medicine and Radiology	3	3	3	3	2	1	2	1	1	2	2	1	3	3	2	1
IV	Pediatric and Preventive Dentistry	3	3	3	3	2	1	2	1	1	2	2	1	3	3	2	1
IV	Public Health Dentistry	3	2		1	2	3	1	1	2	2	2	1	3	2	2	1
IV	Orthodontics & Dentofacial Orthopedics	3	2	1	1	2	1	1	1	1	2	2	1	3	1		1
IV	Oral & Maxillofacial Surgery	3	3	3	3	2	1	3	1	1	2	2	1	3	3	2	1
IV	Periodontology	3	3	3	3	2	1	3	1	1	2	2	1	3	3	2	1
IV	Prosthodontics and Crown & Bridge	3	3	3	3	2	1	3	1	1	2	2	1	3	3	2	1
IV	Conservative Dentistry and Endodontics	3	3	3	3	2	1	3	1	1	2	2	1	3	3	2	1
V	Oral Medicine and Radiology	3	3	3	3	2	1	2	1	1	2	2	1	3	3	2	1
V	Periodontology	3	3	3	3	2	1	3	1	1	2	2	1	3	3	2	1
V	Pediatric and Preventive Dentistry	3	3	3	3	2	1	2	1	1	2	2	1	3	3	2	1
V	Prosthodontics and Crown & Bridge	3	3	3	3	2	1	3	1	1	2	2	1	3	3	2	1
V	Public Health Dentistry Including Comprehensive Oral Health	3	2		1	2	3	1	1	2	2	2	1	3	2	2	1
V	Conservative Dentistry and Endodontics	3	3	3	3	2	1	3	1	1	2	2	1	3	3	2	1
V	Orthodontics & Dentofacial Orthopedics	3	2	1	1	2	1	1	1	1	2	2	1	3	1		1
V	Oral & Maxillofacial Surgery	3	3	3	3	2	1	3	1	1	2	2	1	3	3	2	1
V	Oral Pathology and Oral Microbiology	3	2	2				2						3	2	1	
V	Accident & Emergency		2		2	2	2	1	1	2			1		2		1
V	Rural Posting					3	3	1		3							2

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

V	Management of Oral Mucosal Lesions	2	2	2	2	2	2	1			1	1	3	2	1		
V	Basics of CBCT in Implant Dentistry		2	2	2	2		1			1	1	3				3
V	Lasers in Periodontics		2		2	2		1	1		1	1	3				3
V	Periodontal Surgery for Clinician		2		2	1	1	1	1		1	1	3		2		
V	Hospital Pediatric Dentistry		3	2	2	3	3	1	3	1	1	1	3		2	1	
V	Comprehensive Pediatric Rehabilitation	1	2	2	2	2	2	1	1		1	1	3		2		
V	Introduction to Implantology		2	1	2	1		1	1		1	1	3				3
V	Basics of Fixed Partial Denture		2	1	2	1	1	1	1		1	1	3		2	1	
V	Aesthetic Dentistry		2	1	2	1	1	1	1		1	1	3		2	1	
V	Practice Based Endodontics		2	1	2	1	1	1	1		1	1	3		2	1	
V	Practice Management							3		1			2			2	2
V	Data Management											2	1			1	1
V	Surgical Extraction		2	2	2	1	1	1	1		1	1	3		2		
V	Management of Medically Compromised Patients		2	2	2	1	1	1	1		1	1	3		2		
V	Orthodontics for General practice		2	1	2	1	1	1	1		1	1	3		2	1	
V	Preventive Orthodontics		2	1	2	1	1	1	1		1	1	3		2	1	
V	Routine Tissue Processing		2	3	2			1			1	1	3		2		
V	Exfoliative Cytology in Pathologic Diagnosis		2	3	2			1			1	1	3		2		
V	Open Elective												2				2
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution																	

28. Co-curricular Activities

Students are encouraged to take part in co-curricular activities like seminars, conferences, symposia, table clinics, scientific paper writing and poster presentations, attending industry exhibitions, project competitions and related activities for enhancing their knowledge and networking.

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

29. Cultural and Literary Activities

Annual cultural festivals are held to showcase the creative talents in students. They are involved in planning and organizing the activities.

30. Sports and Athletics

Students are encouraged to take part in sports and athletic events regularly. Annual sports meet will be held to demonstrate sportsmanship and competitive spirit.



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Programme Content					
	COURSE CODE	COURSE TITLE	THEORY CREDITS	PRACTICAL / CLINICAL CREDITS	TOTAL CREDITS
I	CORE COURSES				
	BDC101A	General Human Anatomy including Embryology, Osteology and Histology	5	5	10
	BDC102A	General Human Physiology	6	2	8
	BDC103A	Biochemistry, Nutrition and Dietics	4	2	6
	BDC104A	Dental Anatomy, Embryology and Oral Histology	5	5	10
	BDC201A	General Pathology	4	2	6
	BDC202A	Microbiology	4	2	6
	BDC203A	General and Dental Pharmacology and Therapeutics	4	1	5
	BDC204A	Dental Materials	6	5	11
	BDC205A	Preclinical Prosthodontics and Crown & Bridge	4	10	14
	BDC206A	Preclinical Conservative Dentistry	2	6	8
	BDC301A	General Medicine	4	3	7
	BDC302A	General Surgery	4	3	7
	BDC303A	Oral Pathology and Oral Microbiology	5	4	9
	BDC401A	Oral Medicine and Radiology	4	5	9
	BDC402A	Pediatric and Preventive Dentistry	4	5	9
	BDC403A	Public Health Dentistry	4	5	9
	BDC404A	Orthodontics & Dentofacial Orthopedics	4	5	9
	BDC405A	Oral & Maxillofacial Surgery	5	5	10
	BDC406A	Periodontology	5	5	10
	BDC407A	Prosthodontics and Crown & Bridge	6	5	11
	BDC408A	Conservative Dentistry and Endodontics	6	5	11
II	INTERNSHIP COURSES				
	BDI401A	Oral Medicine and Radiology	-	3	3
	BDI402A	Pediatric and Preventive Dentistry	-	3	3
	BDI403A	Public Health Dentistry Including Comprehensive Oral Health	-	4	4
	BDI404A	Orthodontics & Dentofacial Orthopedics	-	3	3
	BDI405A	Oral & Maxillofacial Surgery	-	3	3
	BDI406A	Periodontology	-	3	3
	BDI407A	Prosthodontics and Crown & Bridge	-	5	5
	BDI408A	Conservative Dentistry and Endodontics	-	5	5

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	General Human Anatomy including Embryology, Osteology and Histology
Course Code	BDC101A
Course Type	Core Course
Department	Anatomy
Faculty	Dental Sciences

1. Course Summary

General Human Anatomy including Embryology, Osteology and Histology aims to help students learn the structure of the human body.

The students learn macroscopic and microscopic structure of tissues, organs and organ systems. The students learn geographical and spatial orientation of anatomical structures in the body and their embryological development with special reference to head and neck region. The students are taught basic genetics and applied anatomy using learning tools like videos and digitalized specimens.

2. Course Size and Credits

Number of Credits	10
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	225
Number of Weeks in a term	20
Department Responsible	Anatomy
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe macroscopic and microscopic anatomy of head and neck region
- CO-2. Describe normal development of organs and identify congenital abnormalities
- CO-3. Demonstrate anatomical structures of the head and neck region and discuss their geographical and spatial orientation while according value and respect to the cadaver
- CO-4. Interpret normal anatomy in radiographs, CT, MRI of head and neck
- CO-5. Sketch the topography of anatomical structures on a cadaver
- CO-6. Analyse anatomical structures with relevance to their normal functions and pathological aspects in case of diseases



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4. Course Contents

Course Contents – Theory	
Lesson No.	General Anatomy Topics
1	Introduction to Anatomy, History of Anatomy
2	Terms and terminologies to describe the position and movements of the body
3	Introduction to Osteology – I
4	Introduction to Cardiovascular system and Lymphatic system
5	Introduction to Nervous system-1
6	Introduction to Nervous system-2
7	Introduction to Myology – types & classification of skeletal muscles, fasciae, tendons, ligaments and aponeuroses
8	Introduction to arthrology
9	Introduction to head & neck, superficial, deep fascia & its modifications.
Gross Anatomy Topics	
10	Scalp
11	Face- Muscles of the face
12	Face- Blood Vessels, Lymphatic drainage and applied anatomy
13	Posterior triangle of neck
14	Anterior triangle of neck
15	Anterior triangle of neck
16	Vessels of head and neck – carotid, subclavian arteries, Internal jugular vein
17	Meninges
18	Dural folds and dural venous sinuses
19	Orbit – nerves, vessels, extrinsic muscles of eye ball
20	Parotid gland
21	Thyroid and Parathyroid Gland
Histology Topics	
22	Introduction-cytology & histology
23	Epithelial-simple & compound
24	Connective tissue-cells, fibres, collagen, elastic & reticular
25	Cartilage-hyaline, elastic & white fibro cartilage
26	Bone- transverse and longitudinal sections
27	Muscular tissue-skeletal, cardiac & smooth
28	Nervous tissue-peripheral nerve & ganglia
29	Blood vessels-artery & vein
Embryology Topics	
30	Introduction to embryology and gametogenesis
31	Fertilization and Implantation
32	Germ layer formation – Gastrulation
33	Neurulation
34	Foetal membranes and Placenta
35	Development of branchial apparatus- Pharyngeal arches
Cranial nerves	
36	Cranial nerve – V – Nuclei of Origin, intra and extra cranial course in head and neck region
37	Cranial nerve - VII– Nuclei of Origin, intra and extra cranial course in head and neck region

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Gross Anatomy Topics	
38	Infratemporal fossa- Boundaries, contents, muscles and mandibular nerve
39	Infratemporal fossa - mandibular nerve, Maxillary artery, maxillary nerve
40	Pterygopalatine fossa
41	TM Joint
42	Ear-parts and middle ear in detail
43	Tongue-Gross
44	Pharynx
45	Palatine tonsil and soft palate
46	Nasal Cavity – nasal septum and lateral wall of nose
47	Paranasal air sinuses
48	Larynx
49	Cervical part of trachea and esophagus
50	Lymphatic drainage of head and neck
51	Joints of neck – atlanto-occipital, atlanto-axial
Histology Topics	
52	Glands-serous, mucous & mixed salivary glands
53	Lymphatic tissue-lymph node, & thymus
54	Lymphatic tissue - spleen & palatine tonsil
55	Skin-hairy & non-hairy
56	Endocrine glands - pituitary, thyroid, parathyroid
57	Endocrine glands - Supra renal & pancreas
58	Trachea & lung
59	Lip & Tongue - filiform & fungiform papillae
60	Oesophagus
Embryology topics	
61	Pharyngeal pouches & clefts
62	Development of face, jaws
63	Development of oral cavity, tongue, palate
64	Development of nasal cavity, paranasal air sinuses, salivary glands
65	Development of thyroid gland, pituitary gland
66	Development of temporomandibular joint
Cranial nerves	
67	Cranial nerve - IX- Nuclei of Origin, intra and extra cranial course in head and neck region
68	Cranial nerves - X- Nuclei of Origin, intra and extra cranial course in head and neck region
69	Cranial nerves – XI & XII- Nuclei of Origin, intra and extra cranial course in head and neck region
70	Cervical spinal nerve & Cervical plexus
71	Autonomic nervous system of head and neck
Genetics	
72	Mitosis, meiosis
73	Chromosomes,
74	Gene structure, Mendelism,
75	Modes of inheritance



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course contents- Practical	
Gross Anatomy Topics	
1	Scalp
2	Face- Muscles, nerve supply, Blood vessels , lymphatic drainage and Applied anatomy
3	Deep cervical fascia
4	Midline structures of neck
5	Posterior triangle of neck
6	Anterior triangle of neck
7	Suboccipital Triangle
8	Vessels of head and neck – carotid, subclavian arteries, Internal jugular vein
9	Meninges
10	Dural folds and Dural venous sinuses
11	Orbit – nerves, vessels, extrinsic muscles of eye ball
12	Parotid gland
13	Thyroid and Parathyroid Gland
14	Submandibular region
Osteology	
15	Norma verticalis
16	Norma occipitalis
17	Norma frontalis
18	Norma basalis
19	Norma basalis
20	Norma lateralis
21	Norma lateralis
22	Interior of cranial cavity
23	Interior of cranial cavity
24	Mandible
25	Maxilla
26	Frontal & parietal
27	Occipital
28	Temporal
29	Sphenoid
30	Zygomatic & ethmoid
31	Vomer, palatine & nasal bones
32	Cervical vertebra
33	Hyoid bone
Histology Topics	
34	Introduction-cytology & histology
35	Epithelial-simple & compound
36	Connective tissue-cells, fibres, collagen, elastic & reticular
37	Cartilage-hyaline, elastic & white fibro cartilage
38	Bone- transverse and longitudinal sections
39	Muscular tissue-skeletal, cardiac & smooth



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

40	Nervous tissue-peripheral nerve & ganglia
41	Blood vessels-artery & vein
	Gross Anatomy Topics
42	Infratemporal fossa- Boundaries, contents, muscles and mandibular nerve
43	Infratemporal fossa - mandibular nerve, Maxillary artery, maxillary nerve
44	T-M Joint
45	Ear-parts and Middle Ear in detail
46	Tongue-Gross
47	Pharynx
48	Palatine tonsil and soft palate
49	Nasal Cavity – nasal septum and lateral wall of nose
50	Paranasal air sinuses
51	Larynx
52	Cervical part of trachea and esophagus
53	Lymphatic drainage of head and neck
54	Joints of neck – atlanto-occipital, atlanto-axial
	Histology Topics
55	Glands-serous, mucous & mixed salivary glands
56	Lymphatic tissue-lymph node, & palatine tonsil
57	Lymphatic tissue - spleen & thymus
58	Skin-hairy & non-hairy
59	Endocrine glands - pituitary, thyroid, parathyroid
60	Endocrine glands - Supra renal & pancreas
61	Trachea & lung
62	Lip & Tongue-filiform & fungiform papillae
63	Oesophagus
	Demonstration of other regions
64	Demonstration of dissected specimen of thoracic wall, heart chambers, coronary arteries, pericardium, lungs-surfaces, pleural cavity, diaphragm
65	Demonstration of dissected specimen of peritoneal cavity and organs of abdomen and pelvis
66	Demonstration of Intramuscular injection sites
67	Demonstration of veins
68	Arterial pulsations
69	Lumbar puncture



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2	3												3			
CO-3	3												3			
CO-4			2											2		
CO-5	2												2			
CO-6		1					1							1		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	75	75
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		130
Pre-Clinical laboratories/ Laboratory	130	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		00
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	00	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		225

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs in either component (CE or YEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of COs on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X		X	X	X
CO-3	X	X	X	X	X	X
CO-4			X	X	X	X
CO-5						X
CO-6	X	X	X			X

The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment



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9. Course Resources

a. Essential Reading

1. Class Notes
2. Datta AK, (2010), Text book of General Anatomy, 5th Edition, CBI publishers
3. Chaurasia.B.D, (2012), Human Anatomy : Regional & Applied (Dissection & Practical) Vol.3 : Head, Neck & Brain with CD, 6th Edition, CBS publishers
4. Datta AK, (2010),Text book of Head and Neck, 4th Edition, CBI publishers
5. Romanes G J, (2008),Cunningham's Manual of Practical Anatomy-Vol 3, 15th Edition, Oxford Medical Publishing
6. Inderbir Singh,(2009),Human Embryology, 6th Edition, Mac Millan publishers
7. Inderbir Singh,(2011),Text book of Histology, 6th Edition, Jay Pee Brothers
8. Halim, (2007), Surface and Radiological Anatomy, 3rd Edition, CBS publishers
9. Kulkarni R, Kulkarni RN, (2012), Essentials of Human Genetics, Peepee Publications
10. Romanes G J, (2008),Cunningham's Manual of Practical Anatomy-Vol 2, 15th Edition, Oxford Medical Publishing

b. Recommended Reading

1. Barry K.B Berkovitz, G. R. Holland, B. J. Moxham,(2009) Berkovitz. Oral Histology, 4th edition, Mosby
2. Mary Bath - Balogh, Fehrenbach, (2011) Dental Embryology, Histology & Anatomy, 3rd edition, Saunders
3. Rickne C. Scheid, Gabriela Weiss. (2011) Woelfel's Dental Anatomy, 8th edition, Lippincott Williams & Wilkins

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Electronic Resources

1. HELINET
2. EBSCO HOST



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	General Human Physiology
Course Code	BDC102A
Course Type	Core Course
Department	Physiology
Faculty	Dental Sciences

1. Course Summary

The study of General Human Physiology aims to help students learn about normal functioning of the human body.

The students learn functions of the body and identification of abnormalities resulting in disease, and development of a rationale for the management of disease seen in routine practice. The students are trained on practical skills of performing basic hematological investigations and practical examination.

2. Course Size and Credits

Number of Credits	08
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	150
Number of Weeks in a term	20
Department Responsible	Physiology
Total Course Marks	200
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

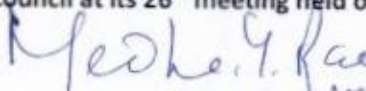
- CO-1. Discuss normal functions of different organ systems
- CO-2. Analyse functioning of different organ systems and their abnormalities
- CO-3. Apply standard protocols to diagnose and manage diseases seen in routine practice
- CO-4. Perform routine hematological investigations with empathy towards patients
- CO-5. Perform routine practical examination with good interpersonal skills essential for practice of dentistry
- CO-6. Appraise the relevance of hematological tests to assess prognosis

4. Course Contents

Course Contents - Theory				
Sl. No.	Chapter		Lesson Topics	Ref
1	Introduction to Physiology	i	Definition and scope of Physiology	1 to 3
2	Blood	i	Composition & functions of blood , RBC I	1 to 4
3		ii	RBC II (Erythropoiesis)	
4		iii	Hemoglobin, Anemia and Jaundice	
5		iv	WBC	
6		v	Immunity	
7		vi	Platelets	
8		vii	Coagulation	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

9		viii	Plasma proteins including hypoproteinemia	
10		ix	Blood groups	
11		x	Blood volume	
12	General Physiology	i	Cell, structure & function & transport across the cell membrane	1 to 4
13		ii	Body fluids	
14		iii	Genesis of resting membrane potentials	
15		iv	Intercellular communication	
16	Nerve muscle	i	Neuron, classification of nerve fibres	1 to 3 and 5
17		ii	Nerve fibre action potential	
18		iii	Properties of nerve fibres	
19		iv	Classification and structures of different types of muscle fibres	
20		v	Neuromuscular junction, Myasthenia gravis	
21		vi	Molecular basis of muscle contraction, excitation contraction coupling	
22		vii	Properties of Muscle fibre	
23	Cardiovascular System	i	Introduction to cardiovascular system. Electrical properties of heart resting membrane potential & action potential	1 to 3 and 5
24		ii	Origin and spread of cardiac impulse	
25		iii	Electrocardiogram	
26		iv	Mechanical properties	
27		v	Cardiac cycle I	
28		vi	Cardiac cycle II, heart sounds	
29		vii	Heart rate, cardiac output	
30		viii	Biophysics of circulation through blood vessels	
31		ix	Arterial blood pressure	
32		x	Coronary circulation including Ischemic heart disease. Hemorrhage & Shock	
33	Respiratory System	i	Introduction to respiration & pulmonary ventilation I	1 to 3 and 6
34		ii	Pulmonary ventilation II, spirometry	
35		iii	Alveolar ventilation and functions of respiratory passages	
36		iv	Pulmonary circulation	
37		v	Gaseous exchange and ventilation perfusion ratios	
38		vi	Oxygen & Carbon dioxide transport	
39		vii	Regulation of respiration I	
40		viii	Regulation of respiration II	
41		ix	Hypoxia, acclimatization and oxygen therapy	
42		x	Cyanosis, asphyxia, dyspnoea and dysbarism. artificial respiration, CPR	
43	General Neurophysiology	i	Receptors	1 to 3
44		ii	Synapse,	
45		iii	Reflexes	
46	Sensory System	i	Organisation of sensory system, including ascending tracts	1 to 3 and 5

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

47		ii	Touch, Temperature & Proprioception	
48		iii	Pain	
49	Motor System	i	Descending tracts & upper & lower motor neurons	1 to 3 and 5
50		ii	Tone of skeletal muscles	
51		iii	Posture	
52		iv	Vestibular apparatus	
53		v	Basal ganglia	
54		vi	Cerebellum	
55	Regional Neurophysiology	i	Thalamus	
56	Diencephalon	ii	Hypothalamus	
57		iii	Limbic lobe, Reticular formation, EEG, Sleep	
58	Special Senses	i	Anatomy of the eye ball and visual pathways	1 to 3 and 5
59		ii	Optics - Errors of Refraction, Accommodation.	
60		iii	Light reflex, Dark adaption and color vision	
61		iv	Functional anatomy of ear, Functions of external and middle ear	
62		v	Functions of internal ear + Theories of hearing	
63		vi	Smell and taste	
64	Gastrointestinal System	i	Introduction to gastrointestinal system	1 to 3
65		ii	Salivary secretion & Deglutition	
66		iii	Stomach	
67		iv	Liver and Bile	
68		v	Pancreatic secretion and succus entericus	
69		vi	Movements of small intestine	
70		vii	Large intestinal movement & function	
71	Endocrinology	i	Introduction, Hypothalamus & Posterior pituitary	1 to 4
72		ii	Anterior pituitary	
73		iii	Thyroid I	
74		iv	Thyroid II	
75		v	Hormones regulating calcium & Phosphate metabolism I	
76		vi	Hormones regulating calcium & Phosphate metabolism II	
77		vii	Endocrines pancreas I	
78		viii	Endocrines pancreas II	
79		ix	Adrenal cortex	
80		x	Adrenal medulla	
81	Reproduction	i	Introduction to reproduction and female reproductive system I	1 to 3 and 7
82		ii	Female reproductive system II	
83		iii	Male reproductive system	
84		iv	Pregnancy, Family welfare program	
85	Renal Physiology	i	Introduction to Renal Physiology & Renal circulation	1 to 3 and 6
86		ii	Glomerular filtration, JG Apparatus	
87		iii	Renal tubular handling of sodium, potassium & Glucose	
88		iv	Acidification of urine	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

89		v	Countercurrent mechanism & Renal tubular handling of water
90		vi	Micturition , Renal failure and artificial kidney

Course Contents - Practical

Sl.No.	Day	Exercises
1	1-3	Study of Microscope and its uses
2	4-5	Collection of blood and study of haemocytometer
3	6-9	Haemoglobinometry
4	10-15	Determination of RBC count
5	16-21	Determination of WBC count
6	22-23	Determination of blood groups
7	24-25	Calculation of blood indices
8	26-27	Determination of Erythrocyte Sedimentation rate (ESR) Determination of packed cell volume (PCV)
9	28	REVISION
10	29	Assessment CEP A
11	30	Viva
12	31-37	Leishman's staining and differential leucocyte count
13	38-39	Determination of bleeding time
15	40-41	Determination of clotting time
16	42-47	Blood pressure recording
17	48-49	Auscultation of Heart sounds
18	50	Practical examination of chest
19	51	Determination of vital capacity
20	52	Artificial respiration
21	53	Demonstration of deep and superficial reflexes
22	54-58	REVISION
23	59	Assessment CEP B
24	60	Viva

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2	3												3			
CO-3		2												2		
CO-4			3											3		
CO-5							1							1		
CO-6			3											3	1	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	70	70
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		50
Pre-Clinical laboratories/ Laboratory	40	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRHS	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	10	
Others		10
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	10	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		150

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	100 Marks
Maximum Marks ▶	25*	25*	50*	50*	50*	
CO-1	X	X				X
CO-2	X	X	X	X	X	X
CO-3	X	X		X	X	X
CO-4				X	X	X
CO-5				X	X	X
CO-6	X	X	X			X

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The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.

Note *: Component 1 is conducted for 200 marks and reduced to 100 marks

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Jain A K. (2013), Human Physiology for BDS. 4th Edition, Avichal.
3. Pal G K. (2009), Textbook of Practical Physiology for Dental Students. 2nd Edition, Ahuja.
4. Ganong F William. (2012), Review of Medical Physiology. 24th Edition, Appleton & Lange.
5. John Hall. (2013), Text Book of Medical Physiology, South Asian Edition. 1st Edition, Prism & Saunders.
6. Venkatesh D, Sudhakar H H. (2013), Basics of Medical Physiology. 3rd Edition. Wolters Kluwer-Lippincot.

b. Recommended Reading

1. Best, Taylors, (2012). Physiological basis of Medical Practice. 13th Edition, Lippincott Williams & Wilkins.

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2. Bijlani & Manjunath, (2011). Understanding Medical Physiology. 4th Edition. Jaypee Brothers.

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	Biochemistry, Nutrition and Dietics
Course Code	BDC103A
Course Type	Core Course
Department	Biochemistry
Faculty	Dental Sciences

1. Course Summary

Biochemistry aims to help students learn about biochemical reactions in the human body in health and disease. The students learn about the molecular architecture of eukaryotic cell, chemical nature of biological macromolecules and enzyme dynamics. The students learn the metabolism of dietary and endogenous carbohydrates, lipids, and proteins, principles of bioenergetics and principles and mechanisms of metabolic control. The students are taught about actions of hormones, structure and constituents of DNA, RNA, inborn errors of metabolism and practical chemistry.

2. Course Size and Credits

Number of Credits	06
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	120
Number of Weeks in a term	20
Department Responsible	Biochemistry
Total Course Marks	200
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe metabolic processes
- CO-2. Describe biochemical basis of diseases
- CO-3. Perform quantitative tests on human samples and interpret the results
- CO-4. Perform routine hematological investigations with empathy towards patients
- CO-5. Interpret a case report based on the biochemical findings
- CO-6. Suggest probable line of management of diseases

4. Course Contents

Course Content - Theory				
Sl no	Chapter		Lesson Topics	Ref
1	Introduction to Biochemistry	i	Definition and scope of Biochemistry	1 to 4, 7 to 9
2	Carbohydrates	i	Definition and classification, Isomerism of sugars	1 to 4, 7 to 9
3		ii	Physiologically important mono, di and poly saccharides	
4		iii	Mucopolysaccharides – hyaluronic acid, chondroitin sulphate, heparin	
5	Aminoacids and proteins	i	Amino acids: definition, classification, properties	1 to 4, 7 to 9
6		iii	Proteins – definition, functions, classification & structural organisation	
7		iv	Proteins –properties & biologically important peptides	
8		v	Plasma proteins and their separation by electrophoresis	
		vi	Hemoglobin and its abnormal forms	

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10	Lipids	i	Definition and classification	1 to 4, 7 to 9
11		ii	Functions of lipids	
12		iii	Fatty acids, neutral fats and phospholipids	
13		iv	Cholesterol and lipoproteins	
14	Nucleic acids	i	Nucleic acid composition	1 to 4, 7 to 9
15		ii	Structure and functions of DNA and RNA	
16		iii	Nucleosides, nucleotides and their importance	
17	Vitamins	i	Vitamins: Definition & classification, Vitamin A - functions and deficiency manifestations	1 to 4, 7 to 9
18		ii	Vitamin D - functions and deficiency manifestations	
19		iii	Vitamin E and K- functions and deficiency manifestations	
20		iv	Thiamine and Riboflavin- functions and deficiency manifestations	
21		v	Niacin and pyridoxine- functions and deficiency manifestations	
22		vi	Folic acid, cyanocobalamine and pantothenic acid - functions and deficiency manifestations	
23		viii	Vitamin C- functions and deficiency manifestations	
24	Enzymes	i	Definition, classification & properties	1 to 4, 7 to 9
25		ii	Holoenzyme, co enzyme & mechanism of action	
26		iv	Factors influencing the enzyme activity & regulation	
27		v	Enzyme activation & inhibition – types and examples	
28		vi	Diagnostic enzymology	
29		Digestion and absorption	i	
30	ii		Digestion and absorption of amino acids	
31	iii		Digestion and absorption of lipids	
32	Carbohydrate metabolism	i	Glycolysis	1 to 4, 7 to 9
33		ii	Gluconeogenesis & Cori's cycle	
34		iv	Citric acid cycle & energetics of glucose oxidation	
35		v	Glycogen metabolism & HMP shunt pathway	
36		vii	Regulation of blood glucose	
37		viii	Biological oxidation	
38	Lipid metabolism	i	Beta oxidation of fatty acids and its energetics	1 to 4, 7 to 9
39		ii	Ketone body metabolism and ketosis	
40		iv	Fatty acid and triglyceride synthesis	
41		v	Fatty liver, lipotropic action & metabolism during starvation	
42	Protein metabolism	i	Introduction to protein metabolism	1 to 4, 7 to 9
43		ii	Transamination, deamination, fate of ammonia & urea cycle	
44		iii	Glycine, phenylalanine, tyrosine and methionine metabolism and disorders	
45		iv	Translation	
46	Nutrition and dietetics	i	Dietary factors, BMR, Biological value of proteins	1 to 4, 7 to 9
47		ii	Dietary fibers and balanced diet	
48		iii	SDA, PM, calorimetry	
49		i	Calcium- distribution, sources, functions, requirements and deficiency manifestations	1 to 4, 7 to 9



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50	Mineral metabolism	ii	Iron - distribution, sources, functions, requirements and deficiency manifestations	1 to 4, 7 to 9
51		iii	Iodine, fluorine, phosphorus - distribution, sources, functions, requirements and deficiency manifestations	
52	Liver function tests	i	Liver function tests	
53		ii	Vandenberg reaction, AG ratio, bromosulphathelin test	
54		iii	Liver enzymes	
55	pH and its biological importance	i	Acids, bases and buffers, Henderson Hasselbachs equation, acid base balance	1 to 4, 7 to 9
56		ii	Acidosis and alkalosis	
57	Renal function tests	i	Urea and creatinine clearance	1 to 4, 7 to 9
58	Blood constituents	i	Normal and abnormal variations of calcium, phosphorus, creatinine, alkaline and acid phosphatase	

Course Content - Practicals

1	Reactions of carbohydrates	Reactions of monosaccharides	5,6
2		Reactions of disaccharides	5,6
3		Preparation of osazones	5,6
4		Reactions of polysaccharides	5,6
5		Identification of unknown carbohydrate	5,6
6	Reactions of proteins	Colour reactions of proteins- albumin	5,6
7		Colour reactions of proteins – gelatin & peptone	5,6
8		Colour reactions of proteins- casein	5,6
9		Precipitation reactions of albumin	5,6
10		Precipitation reactions of gelatin & peptone	5,6
11		Precipitation reactions of casein	5,6
12		Identification of unknown protein	5,6
13	Reactions of non-protein nitrogenous compounds	Reactions of urea, uric acid and creatinine	5,6
14	Identification of physiologically important constituents	Identification of physiologically important constituents	5,6
15	Urine analysis	Urine analysis normal constituents	5,6
16		Urine analysis normal constituents	5,6
17		Urine analysis abnormal constituents	5,6
18		Urine analysis abnormal constituents	5,6
19	Determination of titrable acid and ammonia in urine	Determination of titrable acid and ammonia in urine	5,6
20	Colorimeter	Colorimeter	5,6
21	Quantitative tests	Determination of blood glucose	5,6
22		Determination of creatinine content in urine and calculation of creatinine clearance	5,6
23	Demonstration tests	Electrophoresis & chromatography	5,6
24		Estimation of serum calcium and phosphorus	5,6

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25	Estimation of bilirubin	5,6
26	Estimation of urea in blood	5,6
27	Estimation of total protein in serum	5,6
28	Preparation of hemin crystals	5,6
29	Discussion of practical charts	5,6
30	Spotters	5,6

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2	3												3			
CO-3			3											3		
CO-4			3											3		
CO-5			3											3		
CO-6		2		2										2		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		
1. Demonstration using Videos	00	10
2. Demonstration using Physical Models /Patients	10	
Practical Work		
Pre-Clinical laboratories/ Laboratory	40	45
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	05	
Others		
1. Case Study Presentation	00	05
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		120

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7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	100 Marks
Maximum Marks ▶	25*	25*	50*	50*	50*	
CO-1	X	X				X
CO-2	X	X				X
CO-3	X	X		X	X	X
CO-4				X	X	X
CO-5	X	X	X	X	X	X
CO-6	X	X	X	X	X	X
The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.						

Note *: Component 1 is conducted for 200 marks and reduced to 100 marks

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Sathyanarayana U, Chakrapani U. (2013), Text book of Biochemistry. 4th Edition, Elsevier Science Ltd.
3. Vasudevan DM, Sreekumari S. (2013), Text book of Biochemistry. 7th Edition, Jaypee publishers.
4. Naik P. (2007), Text book of Biochemistry. 2nd Edition, Jaypee publishers
5. Rao AVSR. (2002), Text book of Biochemistry. 9th Edition, UBS publishers.
6. Chawla R. (2003), Practical text book of Biochemistry. 3rd Edition, Jaypee publishers
7. Vasudevan DM, Sreekumari S. (2013), Practical text book of Biochemistry. 2nd Edition, Jaypee publishers

b. Recommended Reading

1. Champe PC, Harvey RA. (2011) Lippincott's illustrated review Biochemistry. 5th Edition, Wolters Kluwer
2. Murray RK. (2009), Harper's Illustrated Biochemistry. 28th Edition, McGraw-Hill.
3. Nelson DL, Cox MM. (2013), Lehninger Principles of Biochemistry. 6th Edition, Macmillan Publishers.

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	Dental Anatomy, Embryology and Oral Histology
Course Code	BDC104A
Course Type	Core Course
Department	Oral & Maxillofacial Pathology and Oral Microbiology
Faculty	Dental Sciences

1. Course Summary

Dental anatomy and oral histology aims to help student learn the structure and function of oral hard and soft tissues at both microscopic and macroscopic levels.

The student will learn about human dentitions in the context of form and function, tooth tissue structure, tooth calcification, emergence –eruption, dental embryology, structure and function of the oral mucosa, the salivary glands and temporomandibular joint. The student will acquire knowledge of teeth morphology through practical carving skills on a wax block.

2. Course Size and Credits

Number of Credits	10
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	225
Number of Weeks in a term	20
Department Responsible	Oral & Maxillofacial Pathology and Oral Microbiology
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe the morphology, embryology and function of human dentitions and oral tissues.
- CO-2. Explain the principles of operation of light microscopes, tissue sectioning and staining
- CO-3. Discuss the histological structure of tooth and oral tissues
- CO-4. Carve the morphology of human dentition with Wax blocks
- CO-5. Distinguish stages of human dentition
- CO-6. Evaluate possible approaches to study a tissue sample or a specimen

4. Course Contents

	TOPIC	SUBTOPIC
1	Dental Anatomy Basics	Introduction, dental anthropology and comparative dental anatomy
2		Functions of teeth
3		Nomenclature
4		Tooth numbering systems
5		Chronology of deciduous and permanent teeth
6		Deciduous teeth
7		General differences between deciduous and permanent teeth
8	Permanent incisors	Morphology of permanent maxillary central incisors

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

9		Morphology of permanent maxillary lateral incisors, Type traits of permanent maxillary incisors,
10		Morphology of permanent mandibular central incisors
11		Morphology of permanent mandibular lateral incisors, Type traits of permanent mandibular incisors, Arch traits of permanent incisors
12	Permanent canines	Morphology of permanent maxillary canines
13		Morphology of permanent mandibular canines , Arch traits of permanent canines
14	Embryology	Development and growth of face and jaws
15		Development and growth of face and jaws
16	Oral histology	Tooth development
17		Tooth development
18		Tooth development
19		Tooth development
20		Tooth development
21		Tooth development
22		Enamel
23		Enamel
24		Enamel
25		Enamel
26		Enamel
27		Enamel
28		Dentin
29		Dentin
30		Dentin
31		Dentin
32		Dentin
33		Pulp
34		Pulp
35		Pulp
36		Cementum
37		Cementum
38	Permanent premolars	Morphology of maxillary first premolars
39		Morphology of maxillary second premolars, Type traits of Maxillary premolars
40		Morphology of mandibular first premolars
41		Morphology of mandibular second premolars, Type traits of Mandibular premolars, Arch traits of premolars
42	Permanent molars	Morphology of permanent maxillary first molars
43		Morphology of permanent maxillary second molars, Type traits of permanent Maxillary molars
44		Morphology of permanent mandibular first molars
45		Morphology of permanent mandibular second molars
46		Type traits of permanent Mandibular molars, Arch traits of permanent molars
47	Oral histology	Oral mucous membrane
48		Oral mucous membrane
49		Oral mucous membrane
50		Oral mucous membrane
51		Oral mucous membrane
52		Oral mucous membrane

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

53		Maxillary sinus
54		Salivary glands
55		Salivary glands
56		Salivary glands
57		Salivary glands
58		Histochemistry of oral tissues
59		Histochemistry of oral tissues
60		Alveolar bone
61		Alveolar bone
62		Alveolar bone
63		Periodontal ligament
64		Periodontal ligament
65		Periodontal ligament
66		Mastication and deglutition
67		Theories of eruption and shedding
68		Theories of eruption and shedding
69		Theories of eruption and shedding
70	Oral Physiology	Taste physiology
71		Occlusion and TMJ
72		Occlusion and TMJ
73		Theories of calcification
74		Theories of calcification
75		Physiology of speech

Course Content - Practical		
Sl No	Topic	Subtopic
1	Microscope	Handling of Microscope
2	Cells & Tissues	Blood cells, Ameloblasts, Odontoblasts, Osteoblasts, Osteocytes, Giant cells, fibroblasts and fibrocytes, adipose tissue skeletal muscle
3	Stains	H & E, PAS, Mallory's, Mason Trichrome, Toluidiene blue, Van Gieson stain
4	Tooth Development	Early Bell stage
		Advanced Bell stage
5	Enamel	Enamel rods
		Dentino enamel junction
		Striae of Retzius
		Neonatal line
		Enamel Lamellae
		Enamel tufts
		Enamel spindles
6	Dentin	Gnarled enamel
		S-shaped dentinal tubules
		Dentinal tubules –transverse section
		Interglobular dentin

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

		Sclerotic dentin
		Dead tracts(T) and (R)
		Hunter Schregar bands
7	Pulp	Layers of pulp
		Pup stones
		Linear calcifications of pulp
8	Cementum	Tomes Granular layer
		Acellular Cementum
		Cellular Cementum
		Overlap CEJ
		Edge to edge CEJ
		Gap CEJ
9	Periodontal Ligament	Transeptal fibres
10	Bone	T.S of Bone
		Trabecular Bone
11	Oral Mucosa	Gingival
		Vermilion border of lip
		Soft palate
		Filiform papillae
		Fungiform papillae
		Circumvallate papillae
12	Salivary Gland	Mucous acini
		Serous acini
		Mixed acini
13	Casts and Specimen Observation	Casts of deciduous, mixed and permanent dentition and teeth specimens to be observed
14	Basic Carving Exercises	Cube, Cuboid
		Pyramid
		Cylinder
		Dumbbell
15	Tooth Carving Exercises	Maxillary Central Incisors
		Maxillary lateral Incisors
		Mandibular Central incisors
		Mandibular Lateral incisors
		Maxillary Canines
		Mandibular Canines
		Maxillary 1 st and 2 nd pre molars
		Mandibular 1 st and 2 nd premolars
		Maxillary and mandibular 1 st and 2 nd molars



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2	3												3			
CO-3	3												3			
CO-4	3												3			
CO-5	3												3			
CO-6	3		2										3			

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	75	75
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		130
Pre-Clinical laboratories/ Laboratory	130	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		00
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	00	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		225

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs in either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Practical Term Test	Practical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X		X	X	X
CO-3	X	X				X
CO-4				X	X	X
CO-5	X	X		X	X	X
CO-6	X	X	X			X

The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment



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9. Course Resources

a. Essential Reading

1. Class Notes
2. Antonio Nanci, (2012) Tenca's oral histology: Development, structure & function, 8th edition, Mosby
3. GS Kumar, Orbans Oral histology & embryology (2011), 13th edition, Elsevier Health Sciences
4. Daniel J. Chiego Jr, (2009) Essentials of Oral Histology & Embryology: A Practical approach- Avery, 4th edition, Mosby
5. Stanley J. Nelson, (2010) Wheeler's Dental anatomy, 9th edition, Saunders
6. Maji Jose, (2012) Manual of Oral Histology & Oral Pathology: colour atlas & text, 1st edition, CBS Publishers & Distributors

b. Recommended Reading

1. Barry K.B Berkovitz, G. R. Holland, B. J. Moxham, (2009) Berkovitz. Oral Histology, 4th edition, Mosby
2. Mary Bath- Balogh, Fehrenbach, (2011) Dental Embryology, Histology & Anatomy, 3rd edition, Saunders
3. Rickne C. Scheid, Gabriela Weiss. (2011) Woelfel's Dental Anatomy, 8th edition, Lippincott Williams & Wilkins

c. Magazines and Journals

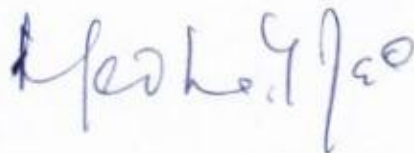
d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST


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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	General Pathology
Course Code	BDC201A
Course Type	Core Course
Department	Pathology
Faculty	Dental Sciences

1. Course Summary

The study of general pathology bridges preclinical and practical Courses and aims to prepare the students for study of disease. The students learn etiology and pathogenesis of disease process and recognize the effect of disease on function, gross and microscopic changes in cells, tissues and organs in general and oral cavity in particular. The students are trained on the relevant investigations and to interpret the results for diagnosis

2. Course Size and Credits:

Number of Credits	06
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	120
Number of Weeks in a term	20
Department Responsible	Pathology
Total Course Marks	200
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss cause, pathogenesis, morphology and the relevant investigations aiding diagnosis of disease
- CO-2. Describe methods of collection and handling of practical samples from patients
- CO-3. Interpret and integrate pathological and practical findings for establishing a diagnosis
- CO-4. Perform complete urine examination and detect abnormal constituents
- CO-5. Perform basic hematological procedures and develop interpersonal and communication skills for ethical multidisciplinary approach in health care
- CO-6. Appraise the advances in diagnostics for understanding pathogenesis of disease with special reference to oral diseases

4. Course Contents

Course Contents : Theory				
Sl No	Chapter		Lesson Topics	Reference books
1	Introduction	i	Introduction to pathology, terminology	1 to 4
2		i	Normal cell structure and cellular functions	1 to 4
3	Etiology and pathogenesis of disease	i	Cell injury, types, congenital and acquired (hypoxic, chemical, physical, immunologic injury)	1 to 4
4	Degenerations	i	Amyloidosis	1 to 4
5		ii	Fatty change, cloudy swelling, hyaline change, mucoid degeneration	1 to 4
6	Cell death and necrosis	i	Definition, causes, features and types of necrosis.	1 to 4
		ii	Gangrene- dry, wet, gas	



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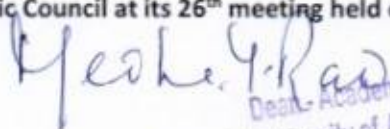
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8		iii	Apoptosis, pathologic calcification	
9	Inflammation	i	Definition , causes , types, and features	1 to 4
10		ii	Vascular and cellular response	
11		iii	Chemical mediators	
12		iv	Inflammatory cells and fate	
13		v	Chronic inflammation	
14		vi	Granulomatous inflammation	
15	Healing	i	Regeneration and repair – mechanisms	1 to 4
16		ii	Healing by primary and secondary intention	
17		iii	Fracture healing, factors influencing healing and complications	
18	Tuberculosis	i	Epidemiology, pathogenesis (formation of tubercle)	1 to 4
19		ii	Pathologic features of primary and secondary TB. Complications and fate	
20	Syphilis	i	Epidemiology, types and stages of syphilis, pathological features, diagnostic criteria, oral lesions	1 to 4
21	Typhoid	i	Epidemiology, pathogenesis, pathological features, diagnostic criteria	1 to 4
22	Thrombosis	i	Definition, pathophysiology, formation, complications and fate of a thrombus	1 to 4
23	Embolism	i	Definition, types, effects	1 to 4
26	Ischaemia and infarction	i	Definition, etiology, types, infarction of various organs	1 to 4
27	Derangements of body fluids	i	Oedema- pathogenesis, different types	1 to 4
28	Disorders of circulation	i	Hyperemia , shock	1 to 4
29	Nutritional disorders	i	Common vitamin deficiencies	1 to 4
30	Immunological mechanisms in disease	i	Humoral and cellular immunity	1 to 4
31	Immunological mechanisms in disease	i	Hyper sensitivity and auto immunity	1 to 4
32	AIDS	i	Etiology, modes of transmission, diagnostic procedures, handling of infected material and health education	1 to 4
33	Hepatitis	i	Etiology, modes of transmission, diagnostic procedures, handling of infected material and health education	1 to 4
34	Hypertension	i	Definition, classification, pathophysiology, effects in various organs	1 to 4
35	Diabetes mellitus	i	Definition, classification and pathogenesis	1 to 4
36		ii	Pathology in different organs and complications	1 to 4
37	Adaptive disorders of growth	i	Atrophy and hypertrophy	1 to 4
38		ii	Hyperplasia, metaplasia, and dysplasia	
39	General aspects of neoplasia	i	Definition, terminology , classification	1 to 4
40		ii	Differences between benign and malignant neoplasm , neoplastic cell, metastasis	1 to 4



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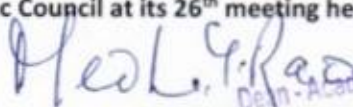

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41		iii	Etiology and pathogenesis of neoplasia-carcinogenesis	1 to 4
42		iv	Biology of tumours	1 to 4
43		v	Oncogenes and anti-oncogenes	1 to 4
44		vi	Diagnosis of neoplasms and pre- cancerous lesions	
45		vii	Common specific tumours- squamous papilloma and carcinoma, basal cell carcinoma, adenoma and adenocarcinoma	
46		viii	Fibroma, and fibrosarcoma, lipoma and liposarcoma	
47	Anaemias	i	Iron deficiency anaemia	1 to 6
48		ii	Megaloblastic anaemia	1 to 6
49	Leukemias	i	Acute leukemias- diagnosis and practical features	1 to 6
50		ii	Chronic leukemias- diagnosis and practical features	
51	Diseases of lymphnodes	i	Hodgkin's disease, Non-Hodgkin's lymphoma, metastatic carcinoma	1 to 4
52	Diseases of oral cavity	i	Lichen planus, stomatitis, leukoplakia, squamous cell carcinoma, dental caries, dentigerous cyst, ameloblastoma	1 to 4
53	Diseases of salivary glands	i	Normal structure, sialadenitis, tumours	1 to 4
54	Common diseases of bones	i	Osteomyelitis, metabolic bone diseases	1 to 4
55		ii	Bone tumours, osteosarcoma, osteoclastoma, giant cell tumour, Ewing's sarcoma, fibrous dysplasia, aneurysmal bone cyst	
56	Diseases of cardiovascular system	i	Cardiac failure, congenital heart disease- ASD, VSD, PDA, Fallot's tetralogy , infective endocarditis	1 to 4
57		ii	Atherosclerosis	
58		iii	Ischaemic heart disease	
59	Haemorrhagic disorders	i	Coagulation cascade, coagulation disorders	1 to 6
60		ii	Platelet function and platelet disorders	
Course Contents : Practicals				
1	Urine analysis	i	Detection of abnormal constituents-sugar, ketone bodies-methods, principle, interpretation and practical relevance	7 to 9
2	Urine analysis	ii	Detection of abnormal constituents-albumin, blood-methods, principle, interpretation and practical relevance	7 to 9
2	Urine analysis	iii	Detection of abnormal constituents-bile salts, bile pigments methods, principle, interpretation and practical relevance	7 to 9
3	Haemoglobin estimation	i	Methods, principle, interpretation and practical importance	7 to 9
4	Total W B C count	i	Methods- automated, manual, principle, procedure reference range and variations	7 to 9

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5	Differential W B C count	i	Peripheral blood smear-staining procedure, principle, identification of W B C's, normal reference range, variation and practical significance	7 to 9
6	Packed cell volume(PCV) Erythrocyte sedimentation rate(ESR)	i	Methods of estimation-principle, procedure and interpretation and practical relevance	7 to 9
7	Bleeding time(BT) and Clotting time(CT)	i	Different methods of estimation-principle, procedure, normal range and practical significance	7 to 9
8	Anaemias	i	Iron deficiency anaemia-blood smear findings, identification of cells, and other lab test findings.	7 to 9
9		ii	Megaloblastic anaemia-blood smear findings, identification of cells, other lab findings	7 to 9
10	Leukaemias	i	Acute leukaemia-blood smear findings, other findings and practical features	7 to 9
11		ii	Chronic leukaemia-diagnosis, practical features	7 to 9
12	Histopathology	i	Tissue processing and staining-manual and automated	7 to 9
13	Histopathology slides	i	Acute appendicitis, Granulation tissue-should be able to identify and describe the gross and microscopic features, their causes and practical sequelae	7 to 9
15	Assessment CEP A + Viva Voce			
16	Histopathology slides	i	Fatty liver CVC Lung and liver	7 to 9
17	Identification, description of the gross and microscopic features, causes and practical sequelae.	ii	Amyloidosis-kidney and spleen	7 to 9
18		Histopathology slides	i	Tuberculosis-Lymph node and lung
19	ii		Actinomycosis	7 to 9
20	iii		Rhinosporidiosis	7 to 9
21	Histopathology slides	i	Papilloma-squamous	7 to 9
22		ii	Basal cell carcinoma	
23		iii	squamous cell carcinoma	
24	Histopathology slides	i	Osteoclastoma	7 to 9
25		ii	Osteosarcoma & fibrosarcoma	
26	Histopathology slides	i	Malignant melanoma	7 to 9
27		ii	Adenoma, Ameloblastoma	
28	Histopathology slides	i	Mixed parotid tumour	7 to 9
29		ii	Metastatic carcinoma lymph node	
30	Assessment CEP B + Viva Voce			



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2			3											3		
CO-3			3											3		
CO-4			3											3		
CO-5			3		2									3		
CO-6	2															2

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		45
Pre-Clinical laboratories/ Laboratory	40	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRHH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	05	
Others		05
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		120

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of COs on each Component or Subcomponent of Evaluation						
Subcomponent ►	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	100 Marks
Subcomponent Type ►	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	
Maximum Marks ►	25*	25*	50*	50*	50*	
CO-1	X	X				X
CO-2	X	X		X	X	X
CO-3	X	X	X	X	X	X
CO-4	X	X		X	X	X
CO-5	X	X		X	X	X
CO-6	X	X	X			X
The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.						

Note *: Component 1 is conducted for 200 marks and reduced to 100 marks

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment



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9. Course Resources

a. Essential Reading

1. Class Notes
2. Kumar, Abbas, Aster. (2013), Robin's Basic Pathology. 9th Edition, Elsevier.
3. Underwood JCE. (2008), General and Systemic Pathology. 4th Edition, Churchill Livingstone.
4. Harsh Mohan. (2012), Essential Pathology for Dental Students. 4th Edition, Jaypee.
5. Mondal.A.K. (2012), Text book of Pathology for BDS. 1st Edition, Avichal Publishing.
6. Pennington.D. (2005), DeGruchy's Practical Haematology in Medical Practice. 6th Edition, Elsevier.
7. Singh.T. (2010), Text book of Haematology. 2nd Edition, Arya publication.
8. Singh.T. (2011), Practical Pathology. 2nd Edition, Arya Publication.
9. Henry.J.B. (2011), Practical Diagnosis by lab methods. 20th Edition, Saunders.
10. Harsh Mohan. (2012), Practical Pathology for Dental students, 4th Edition, Jaypee.

b. Recommended Reading

1. Orell, Sterrett's . (2012), Orell & Sterrett's Fine Needle Aspiration Cytology. 5th Edition, Elsevier.
2. Rosai, Ackermann. (2011), Rosai & Ackermann's Surgical pathology. 10th Edition, Elsevier.
3. Fletcher C.D.M. (2007), Diagnostic histopathology of tumors. 3rd Edition, Elsevier.

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST


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Bangalore - 560 054



Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	Microbiology
Course Code	BDC202A
Course Type	Core Course
Department	Microbiology
Faculty	Dental Sciences

1. Course Summary

Microbiology aims to help the student learn about micro-organisms and parasites in human health and disease. The student learns types of micro-organisms and parasites, their morphology, methods of cultivation and identification. The students also learn about infections caused by these micro-organisms and the body's immune response. The students are trained about collection, processing, reporting of samples and management of microbial diseases. The students are taught about infection control protocols in dental practice.

2. Course Size and Credits

Number of Credits	06
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	120
Number of Weeks in a term	20
Department Responsible	Microbiology
Total Course Marks	200
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

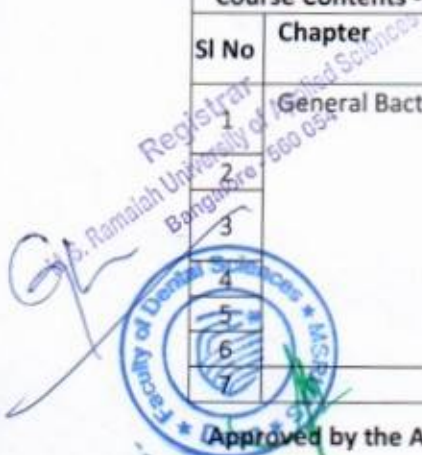
- CO-1. Describe the mechanism of host parasite relationship
- CO-2. Discuss etiology, pathogenesis, practical manifestations & diagnosis of infectious diseases with special reference to oral lesions
- CO-3. Explain the selection, collection and transport of appropriate samples for processing and interpret the results ethically and with empathetic interpersonal skills towards patients
- CO-4. Demonstrate the use of aseptic procedures and universal precautions
- CO-5. Perform simple laboratory tests for diagnosing infections
- CO-6. Evaluate the manipulation of host parasite relationship to alter disease mechanism

4. Course Contents

Course Contents - Theory				
Sl No	Chapter		Lesson Topics	Referenc e books
1	General Bacteriology	i	Introduction, History & Bacterial taxonomy	1, 2, 4, 5
2		ii	Morphology & physiology of bacteria	1, 2, 4, 5
3		iii	Basics of Bacterial genetics & mechanisms of drug resistance	
4		iv	Sterilization	
5		v	Disinfection & universal precautions	
6		vi	Culture media & culture techniques	
7		i	Sources & spread of Infection	

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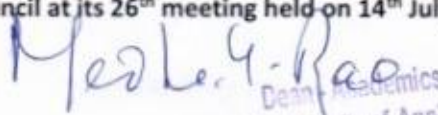
Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

8	Immunology	ii	Immunity	1, 2, 4, 6
9		iii	Structure & functions of Immune system	
10		iv	Antigen	
11		v	Antibodies	
12		vi	Complement	
13		vii	Immune response (AMI & CMI)	
14		viii	Antigen & Antibody reactions (Precipitation & agglutination reactions)	
15		ix	Antigen & Antibody reactions (ELISA, RIA, IF)	
16		x	Hypersensitivity reactions	
17		xi	Immunodeficiency diseases	
18		xii	Autoimmunity	
19		xiii	Immunology of transplantation and malignancy	
20		xiv	Immunohaematology	
21		Systematic Bacteriology	i	
22	ii		Streptococcus pyogenes	
23	iii		Streptococcus viridians & dental caries	
24	iv		Pneumococci	
25	v		Meningococci & gonococci	
26	vi		Corynebacterium diphtheriae	
27	vii		Bacillus	
28	viii		Clostridium welchi / perfringens	
29	ix		Clostridium tetani	
30	x		Non sporing anaerobes	
31	Systematic Bacteriology	xi	Mycobacterium tuberculosis	1, 2
32		xii	Atypical mycobacteria	
33		xiii	Mycobacterium leprae	
34		xiv	Actinomycetes & Nocardia	
35		xv	Spirochetes - Treponema	
36		xvi	Spirochetes – leptospira	
37		xvii	Spirochetes – borrelia	
38		xviii	Normal bacterial flora of oral cavity	
39	Virology	i	General properties of viruses	1, 2, 4
40		ii	Cultivation of viruses , laboratory diagnosis of viral infections, Immunoprophylaxis	
41		iii	Bacteriophages	
42		iv	Herpes virus	
43		v	Measles , Mumps & Rubella	
44		vi	Rabies	
45		vii	Hepatitis B virus	
46		viii	HIV	
47		ix	Adeno & Oncogenic viruses	
48	Parasitology	i	Introduction to parasitic diseases	1, 2, 4
49		ii	Entameba histolytica, Entameba gingivalis	
50		iii	Malaria	
51		iv	Intestinal nematodes	
52		v	Intestinal nematodes	



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53	Mycology	i	Introduction to fungal diseases	1, 2
54		ii	Candidiasis	
55		iii	Rhinosporidiosis	
56		iv	Oral lesions of Systemic Mycosis	
57	Applied Microbiology	i	Specimen collection in dental practice	
58		ii	Nosocomial infections & Infection control measures	
59		iii	Periodontal infections	
60		iv	Dental caries	

Course Contents - Practical

1	Microscopy-I Working and maintenance of compound microscope
2	Microscopy-II Dark ground, Fluorescent, Electron microscopes
3	Instruments used in Microbiology
4	Culture media-Uninoculated
5	Culture methods-aerobic
6	Culture methods-anaerobic
7	Culture media-inoculated (with bacterial growth)
8	Gram's stain-Demonstration
9	Gram's stain-OSPE
10	Ziehl-Neelsen Stain-Demonstration
11	Ziehl-Neelsen stain-OSPE
12	Albert stain-Demonstration
13	Albert stain-OSPE
14	Assessment CEP A
15	Viva
16	Sterilization –Demonstration of Hot air oven, Autoclave
17	Sterilization –Filters, ETO
18	Visit to CSSD
19	Visit to CSSD
20	Disinfection practices in hospital
21	Demonstration of standard precautions
22	Demonstration of personal protective equipment usage
23	Hand hygiene-OSCE
24	Patient Safety-Infection prevention practices in dentistry
25	Patient Safety- Infection prevention practices in dentistry
26	Biomedical waste management
27	Collection of specimens-I
28	Collection of Specimens-II
29	Assessment CEP B
30	Viva



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2		2												2		
CO-3			3												2	
CO-4							2								1	
CO-5			3											1		
CO-6	3												3			

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

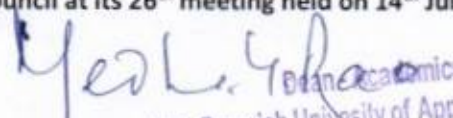
Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		45
Pre-Clinical laboratories/ Laboratory	40	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	05	
Others		05
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		120

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the Cos. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), Cos are assessed as illustrated in the following Table.

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of Cos on each Component or Subcomponent of Evaluation						
Subcomponent ►	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ►	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	100 Marks
Maximum Marks ►	25*	25*	50*	50*	50*	
CO-1	X	X				X
CO-2	X	X	X	X	X	X
CO-3	X	X		X	X	X
CO-4	X	X		X	X	X
CO-5				X	X	X
CO-6	X	X	X			X
The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.						

Note *: Component 1 is conducted for 200 marks and reduced to 100 marks

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment



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9. Course Resources

a. Essential Reading

1. Class Notes
2. Ananthanarayan. (2013) Ananthanarayan & Paniker's Textbook of Microbiology. 9th Edition. Chennai: Orient Longman
3. Baveja CP. (2012) Textbook of Microbiology. 4th Edition. New Delhi: Arya Publications
4. Jayaram Paniker. (2007) Textbook of Medical Parasitology. 6th Edition. New Delhi: Jaypee brothers

b. Recommended Reading

1. Jawetz. Melnick & Adelberg (2013) Medical Microbiology. 26th Edition. USA: McGraw Hill
2. Cruickshank. (1989) Medical Microbiology. 13th Edition. Edinburg: Orient Longman
3. Donald M Weir. (1993) Immunology. 7th Edition. Singapore: Longman Elsevier.
3. Fletcher C.D.M. (2007), Diagnostic histopathology of tumors. 3rd Edition, Elsevier.

c. Magazines and Journals

d. Websites

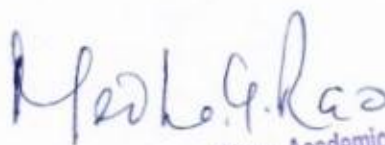
1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST


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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	General and Dental Pharmacology and Therapeutics
Course Code	BDC203A
Course Type	Core Course
Department	Pharmacology
Faculty	Dental Sciences

1. Course Summary

The course aims to provide training on the study of drugs with emphasis on those used in dental practice. The students learn pharmacokinetics, pharmacodynamics, indications, contraindications, interactions, safety, efficacy and rational use of drugs in dental practice. The students are trained to prepare, dispense and prescribe common medicinal preparations used in general and dental practice.

2. Course Size and Credits:

Number of Credits	05
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	90
Number of Weeks in a term	20
Department Responsible	Pharmacology
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe pharmacokinetics, pharmacodynamics, indications, contraindications, adverse drug reactions and interactions of drugs used in general and dental practice
- CO-2. Choose appropriate drugs for specific disease conditions and special situations with emphasis on efficacy & safety
- CO-3. Prepare and dispense commonly used medicinal preparations in dental and medical practice
- CO-4. Prescribe appropriate drugs in common dental and medical conditions based on sound clinical rationale
- CO-5. Critically analyze fixed dose combinations of marketed drugs, identify adverse drug reactions and interactions of commonly used drugs in dental practice.
- CO-6. Collate, analyze and organize information related to recent advances in dental pharmacology and therapeutics

4. Course Contents

Course Content – Theory				
Sl No	Chapter		Lesson topics	Ref
1	Introduction to Pharmacology	i	Definitions: Pharmacology, drug, Pharmacy, Sources of drugs with examples, concept of essential drugs & rational drug therapy	1-6
2	General Pharmacology	i	Routes of drug administration (Advantages and disadvantages with the examples of drugs administered)	1-6
		ii	Pharmacokinetics: Drug absorption & distribution with clinical implications	



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4		iii	Pharmacokinetics: Drug metabolism & excretion with clinical implications	
5		iv	Pharmacodynamics: Mechanisms of drug action	
6		v	Pharmacodynamics: Factors modifying drug action	
7		vi	Adverse drug reactions	
8		vii	Drug interactions	
9	ANS drugs: Classification, their important pharmacological actions, clinical uses along with dental uses if any, specific adverse effects & drug interactions	i	Adrenergic transmission & sympathomimetics	1-6
10		ii	Sympatholytics – Alpha- & Beta-adrenergic blockers	
11		iii	Cholinergic transmission, cholinomimetics, Anticholinesterases	
12		iv	Anticholinergic drugs: Atropine & its derivatives	
13		v	Skeletal muscle relaxants	
14	CNS drugs: Enumeration of clinically used agents, their pharmacological actions, clinical uses along with dental uses if any, specific adverse effects & drug interactions	i	Ethyl alcohol – Actions, uses & drug interactions	1-6
15		ii	General anaesthetics – I	
16		iii	General anaesthetics – II & preanaesthetic medications	
17		iv	Antipsychotics	
18		v	Antidepressants & mood stabilizers	
19		vi	Sedatives hypnotics & anxiolytics	
20		vii	Antiepileptics	
21		viii	Opioid analgesics	
22		ix	Local anaesthetics	
23		x	Nonsteroidal anti-inflammatory drugs	
24	CVS drugs: Enumeration of clinically used agents, their pharmacological actions, clinical uses along with dental uses if any, specific adverse effects & drug interactions	i	Cardiac glycosides	1-6
25		ii	Antianginal drugs	
26		iii	Antihypertensive drugs	
27		iv	Diuretics	
28		v	Pharmacotherapy of shock – Anaphylactic, cardiogenic, hypovolemic, septic	
29	Drugs acting on blood: Detailed pharmacology	i	Haematinics: Iron preparations	1-6
30		ii	Vitamin B12, folic acid & Vitamin C	
31		iii	Coagulants & Anticoagulants	
32		iv	Fibrinolytics, Antifibrinolytics & Anti-platelet drugs	
33	Endocrines: Enumeration/Classification of clinically used agents	i	Drugs used in Diabetes Mellitus: Insulins	1-6
34		ii	Drugs used in Diabetes Mellitus: Oral hypoglycemic agents	



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

35	and their preparations,	iii	Thyroid and anti-thyroid drugs	
36	mechanism of action,	iv	Corticosteroids & Anabolic steroids	
37	clinical uses along with dental uses If any, specific adverse effects & drug interactions	v	Vitamin D & calcium preparations	
38	Chemotherapy: Enumeration/Classification of clinically used agents and their preparations, mechanism of action, clinical uses along with dental uses If any, specific adverse effects& drug interactions	i	General Principles of antimicrobial agents	1-6
39		ii	Sulfonamides & Cotrimoxazole	
40		iii	Beta-lactum antibiotics: Penicillins	
41		iv	Beta-lactum antibiotics: Cephalosporins	
42		v	Macrolides & Aminoglycosides	
43		vi	Broad spectrum antibiotics	
44		vii	Antifungal agents	
45		viii	Antiviral agents	
46		ix	Metronidazole & fluroquinolones	
47		x	Antineoplastic drugs: Alkylating agents, Antimetabolites	
48		xi	Antineoplastic drugs: Vinca alkaloids, Anticancer antibiotics, Radioactive isotopes	
49		xii	Drug therapy of Tuberculosis & leprosy	
50		xiii	Antimalarial drugs & Anthelmintic drugs	
51	Gastrointestinal drugs:	i	Drugs used in Peptic ulcer disease	1-6
52	Enumeration of clinically used agents, clinical uses along with dental uses if any, specific adverse effects& drug interactions	ii	Antiemetic drugs	
53		iii	Purgatives and Anti-diarrheal drugs	
54	Respiratory system &	i	Drugs used in Bronchial asthma & cough	1-6
55	Autacoids &	ii	Antihistaminics	
56	Miscellaneous drugs:	iii	Prostaglandins & leukotrienes	
57	Enumeration of clinically used agents, clinical uses along with dental uses if any & specific adverse effects	iv	Chelating agents: BAL, EDTA, & Penicillamine	
58	Dental Pharmacology	i	Antiseptics, Astringents, Bleaching agents, mouth washes Sialagogues	1-4
59		ii	Obtundents, mummifying agents, disclosing agents & dentifrices	
60	Dental Emergencies: Prevention and treatment	i	Seizures, Anaphylaxis, Severe bleeding, Shock, Tetany, Status asthmaticus, Diabetic Ketoacidosis, Acute Addisonian crisis	



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Course Content – Practicals			
Sl No	Lesson	Duration	References
1	Introduction: Equipments used in dispensing pharmacy, Meterology, Posology, Prescription – parts & model prescription	2 hours	7-8
2	Demonstration of common dosage forms used in clinical practice	2 hours	7-8
3	Mixtures – Alba mixture & Sodium salicylate mixture	2 hours	7-8
4	Mixtures – Alkaline mixture	2 hours	7-8
5	Sodium chloride mouth wash & Potassium permanganate solution	2 hours	7-8
6	Astringent gum paint & Disclosing solution	2 hours	7-8
7	Assessment CEP A	2 hours	7-8
8	Tooth powder, Toothpaste	2 hours	7-8
9	Oral rehydration salt	2 hours	1-8
10	Critical analysis of marketed fixed dose combinations used in dentistry	2 hours	1-8
11	Identification of Adverse drug reactions & drug interactions	2 hours	1-8
12	Prescription writing – I (Bronchial asthma, hypertension, angina pectoris, peptic ulcer, bacillary dysentery, diabetes mellitus, osteoarthritis, Iron deficiency anaemia, Pernicious anaemia)	2 hours	1-8
13	Prescription - II (Anaphylaxis, acute necrotizing ulcerative gingivitis, acute herpetic stomatitis, pericoronal abscess, dental caries, aphthous ulcers)	2 hours	1-8
14	Prescription – III (Dentoalveolar abscess, hypersensitive dentine, xerostomia, acute tooth ache, post extraction pain with swelling, oral candidiasis, scurvy)	2 hours	1-8
15	Assessment CEP B	2 hours	1-8

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1							3						3			
CO-2							3							2		
CO-3							3							2		
CO-4		2		2										3		
CO-5							3							3		
CO-6											2	1			3	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		05
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	05	
Practical Work		20
Pre-Clinical laboratories/ Laboratory	20	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	05	
Others		05
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		90

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X				X
CO-3				X	X	X
CO-4				X	X	X

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CO-5				X	X	X
CO-6			X			X
The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.						

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment



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9. Course Resources

a. Essential Reading

1. Class Notes
2. TripathiKD. (2011), Essentials of pharmacology for dentistry. 2nd Edition, Jaypee Brothers.
3. Sharma HL, Sharma KK and Gupta DK. (2014), Dental pharmacology. 2nd Edition, Paras publications.
4. Padmaja U. (2013), Textbook of Pharmacology for dental & allied health sciences. 3rd Edition, Jaypee Brothers.
5. Yagiella, Dowd, Johnson, Mariotti and Neidle. (2011), Pharmacology & therapeutics in Dentistry .6th Edition, Elsevier publications.

b. Recommended Reading

1. Katzung BG, Masters SB and Trevor AJ. (2013), Basic and clinical pharmacology. 12th Edition. McGrawHill publications.
2. Brunton LL, Chabner BA and Knollmann BC. (2011), The pharmacological basis of therapeutics .12th Edition, McGrawHill publications.
3. Bhavana S and Sanjay G. (2007), Pharmacy and Clinical pharmacology.1st Edition, NCBA publications.
4. Jaju BP. (1995), Pharmacology practical exercise.1st Edition, Jaypee Brothers.

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	Dental Materials
Course Code	BDC204A
Course Type	Core Course
Department	Conservative Dentistry and Endodontics, Prosthodontics and Crown & Bridge
Faculty	Dental Sciences

1. Course Summary

The Course of dental materials aims to help students select, manipulate and evaluate materials used in dentistry. The students study structure, types, composition and properties of dental materials. The students learn indications in specific clinical situations, its response in the oral cavity and learn to recognize limitations and failures. They are trained to work in a laboratory safely with different materials.

2. Course Size and Credits:

Number of Credits	11
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	240
Number of Weeks in a term	20
Department Responsible	Conservative Dentistry and Endodontics, Prosthodontics and Crown & Bridge
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Classify dental materials according to their classes, functions and uses
- CO-2. Differentiate characteristics of each material, with technical guidelines for manipulation and identify consequences of improper handling
- CO-3. Choose appropriate materials and allied equipment according to their clinical application
- CO-4. Demonstrate handling and manipulation of dental materials efficiently and safely
- CO-5. Evaluate physical, mechanical and biological implications of recently developed dental materials.
- CO-6. Evaluate testing methods and standards of dental materials in a laboratory and clinical setting.

4. Course Contents

Course Contents - Theory			
Sl No	Chapter		Lesson Topics
1	Introduction to dental materials	i	Introduction to Materials
2	Structure of matter and principles of adhesion.	i	Inter atomic primary and secondary bonds
3		ii	Thermal energy, Crystalline structure, Diffusion, adhesion, bonding and adhesion to tooth structures.

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4	Important Physical Properties Applicable To Dental Materials	i	Physical properties - I
5		ii	Physical properties - II
6	Mechanical properties of dental materials	i	Mechanical properties of materials
7		ii	Mechanical properties of tooth structure
8		iii	Criteria for selection of restorative materials
9	Gypsum Products	i	Uses, types, manufacture, manipulation of gypsum in dentistry
10		ii	Control of Setting expansion, Strength and Infection control
11	Impression Materials Used In Dentistry	i	Definition, purpose, Ideal properties, Classification, Application of impression materials
12		ii	Hydrocolloids -Agar
13		iii	Hydrocolloids - Alginate
14		iv	Inelastic impression material – impression compound
15		v	Inelastic impression material – Eugenol and non-eugenol
16		vi	Elastomeric impression material - I
17		vii	Elastomeric impression material - II
18		viii	Review
19	Introduction to materials in Conservative dentistry	I	Aims and scope of the science of dental materials and classification of materials
20	Dental cements	i	Classification and ideal requirements of Dental cements, Cements for luting, cements for pulp protection, cements for restoratives
21		ii	Zinc phosphate
22		iii	Silicate and Silicophosphate Cement
23		iv	Zinc oxide eugenol cement
24		v	Zinc polycarboxylate Cement
25		vi	Calcium hydroxide Cement, cavity varnish & liner
26		vii	Glass ionomer Cement
27		viii	Modified glass ionomer Cement, Resin cement
28		ix	Fluoride releasing materials and solubility & disintegration of materials
29		Silver amalgam alloy	i.
30	ii.		Setting Reaction, Properties
31	iii.		Manipulation and uses, comparative study of all types of silver amalgam
32	iv.		Silver amalgam alloy
33	v.		Mercury Hygiene and toxicity



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34	Denture base resins	i	Development, Classification, Requirement, Applications, Polymerisation
35		ii	Acrylic Resins: Types, Application, Composition,, Polymerisation reaction of each and Technical considerations
36		iii	Miscellaneous resins & techniques
37		iv	Resin teeth and materials for maxillofacial prosthodontics
38	Metal and alloys:	i	Structure and behavior of metals, Classification of alloys
39		ii	Constitutes or equilibrium phase diagrams: Eutectic and peritectic alloys, Solid state reaction.
40	Dental casting alloys	i	Applications, Desirable properties and Classification of casting alloys
41		ii	High noble and noble metal alloys for metal ceramic restoration
42		iii	Base metal alloys for cast metal & metal ceramic restoration
43		iv	Alloys for metal ceramic restoration
44		v	Heat treatments, Hazards, guidelines for use and selection.
45		Dental Waxes	i
46	ii		Other waxes, Applications, Mode of supply, Properties.
47	Dental casting investments and procedures	i	Definition, Requirements, Classification, Mode of Supply, Composition
48		ii	Application, Setting mechanism, time and expansions, technical considerations, Casting procedure
49		iii	Casting defects
50	Soldering, Brazing And Welding	i	Need of joining dental appliances, Terms & Definition, Solders
51		i	Fluxes & Anti fluxes, Soldering, Welding & Brazing
52	Wrought Metals	i	Applications, Properties required for orthodontic wires, Stainless steels Alloys
53		ii	Properties Sensitization & Stabilization, Mechanical properties, Solders for stainless steel Fluxes Welding Corrosion resistance
54		iii	Ni-Ti alloys
55	Dental Ceramics	i	History, General applications. Dental ceramics definition Classification Application
56		ii	Mode of supply Manufacturing procedure, Methods of strengthening Properties of fused ceramic technical considerations. Metal Ceramics (PFM): Alloys - Types and composition of alloys



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

57		iii	Ceramic - Type and Composition. Metal Ceramic Bond
58		iv	Technical considerations for porcelain and porcelain fused metal restorations.
59		v	All Ceramic systems
60		vi	Recent advances – CAD CAM, Veneers, inlays & onlays
61	Die and counter die materials including electroforming and electropolishing.	i	Types Gypsum products,
62		ii	Electroforming, Epoxy resin, Amalgam.
63	Dental Implants	i	History, classification, implant components
64		ii	Evaluation, implant biomaterials, selection, biocompatibility and biomechanics
65	Restorative Resins	i	History, Classification, ideal requirements,
66		ii	Mode of supply Composition, properties, chemistry of setting
67		iii	Advantage and disadvantages, manipulation and uses.
68		iv	Composite resins – acid etching enamel finishing and polishing
69		v	Recent advances in composites
70		vi	Adhesion and Dentin bonding systems
71	Direct Filling Gold	i	Types, advantages, disadvantages
72		ii	Brief study of manipulation
73	Biological considerations in use of dental materials	i	Requirements & classification of materials associated with biological compatibility
74		ii	Biocompatibility of materials in prosthodontics
75		iii	Hazards associated with materials
76	Abrasives and polishing agents	i	History, applications, principles, abrasion and erosion, instrument design, types
77		ii	Finishing and polishing agent used in clinical and laboratory procedures
78	Miscellaneous	i	Mechanics of tooth cutting
79		ii	Pit and fissure sealants
80		iii	Tarnish and corrosion
81		iv	Infection control
82		v	Endodontics materials
83		vi	Gutta-percha
84		vii	Dentifrices
85		viii	Inlay wax
86		ix	MTA, Root canal sealers
87	Emerging Technologies	i	Biomaterials and biological materials
88		ii	Instruments and processes, environmental considerations
89	Review : Prosthodontics	i	Review: Prosthodontics
90	Review : Conservative	i	Review: Conservative



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Course content - Practicals – Prosthodontics		
SI No	Chapter	Lesson Topics
1	Gypsum	Fabrication of cube using dental plaster
2	Gypsum	Fabrication of cube using dental plaster
3	Gypsum	Fabrication of cube using dental plaster
4	Gypsum	Fabrication of cube using dental stone
5	Gypsum	Fabrication of cube using dental stone
6	Gypsum	Fabrication of cube using dental stone
7	Gypsum	Fabrication of cuboid using dental plaster
8	Gypsum	Fabrication of cuboid using dental plaster
9	Gypsum	Fabrication of cuboid using dental stone
10	Gypsum	Fabrication of cuboid using dental plaster
11	Impression Materials	Making of thumb impression using impression compound (2 set)
12	Impression Materials	Making of thumb impression using impression compound (2 set)
13	Impression Materials	Relining thumb impression using zinc oxide eugenol impression material (2 set)
14	Impression Materials	Pouring thumb impression with dental plaster
15	Impression Materials	Pouring thumb impression with dental stone
16	Impression Materials	Modifying maxillary stock tray
17	Impression Materials	Making of maxillary primary impression with impression compound
18	Impression Materials	Making of maxillary primary impression with impression compound
19	Impression Materials	Modifying mandibular stock tray
20	Impression Materials	Making of mandibular primary impression with impression compound
21	Impression Materials	Making of mandibular primary impression with impression compound
22	Dental wax	Beading of the maxillary primary impression
23	Dental wax	Beading of the maxillary primary impression
24	Dental wax	Boxing of the maxillary primary impression
25	Dental wax	Boxing of the maxillary primary impression
26	Dental wax	Beading of the mandibular primary impression
27	Dental wax	Beading of the mandibular primary impression
28	Dental wax	Boxing of the mandibular primary impression
29	Dental wax	Boxing of the mandibular primary impression
30	Impression Materials	Pouring of the maxillary primary impression
31	Impression Materials	Pouring of the mandibular primary impression
32	Impression Materials	Making of maxillary primary impression with alginate
33	Impression Materials	Making of maxillary primary impression with alginate
34	Impression Materials	Making of maxillary primary impression with alginate

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35	Impression Materials	Pouring of the maxillary alginate impression with dental plaster
36	Impression Materials	Making of mandibular primary impression with alginate
37	Impression Materials	Making of mandibular primary impression with alginate
38	Impression Materials	Making of mandibular primary impression with alginate
39	Impression Materials	Pouring of the mandibular alginate impression with dental plaster
40	Dental wax	Adaptation of wax spacer on the maxillary cast
41	Impression Materials	Adaptation of wax spacer on the mandibular cast
42	Acrylic resin	Fabrication of maxillary custom tray
43	Acrylic resin	Fabrication of maxillary custom tray
44	Acrylic resin	Fabrication of mandibular custom tray
45	Acrylic resin	Fabrication of mandibular custom tray
Course content - Practicals – Conservative Dentistry		
1	Introduction	Introduction, instrument check and identification
2	Zinc Phosphate cement	Zinc Phosphate cement- Introduction and Demonstration
3		Zinc Phosphate cement, Manipulation of cement to luting consistency Theoretical evaluation (viva/quiz)
4		Zinc Phosphate cement, Manipulation of cement to restorative consistency, Theoretical evaluation (viva/quiz)
5		Zinc Phosphate cement, Manipulation of cement to luting & restorative consistency, Application of base on prepared class I cavity on tooth mounted on plaster model
6		Zinc Phosphate cement Manipulation of cement to luting & restorative consistency Application of Zinc Phosphate cement as temporary restoration on prepared class I cavity on tooth mounted on plaster model
7		Zinc Polycarboxylate cement
8	Zinc Polycarboxylate cement, Manipulation to luting consistency Theoretical evaluation (viva/quiz)	
9	Zinc Polycarboxylate cement, Manipulation to restorative consistency Theoretical evaluation (viva/quiz)	
10	Zinc Polycarboxylate cement, Manipulation to luting & restorative consistency, Application of base on prepared class I cavity on tooth mounted on plaster model	
11	Zinc Polycarboxylate, Manipulation to luting & restorative consistency Application of Zinc Polycarboxylate cement as temporary/permanent restoration on prepared class I cavity on tooth mounted on plaster model	
12	Glass Ionomer cement- Type – I	Glass Ionomer cement – Type – I, -Introduction and Demonstration



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13		Glass Ionomer cement – Type – I, Manipulation to luting consistency Theoretical evaluation (viva/quiz)
14		Glass Ionomer cement, Type – I, Manipulation to restorative consistency, Theoretical evaluation (viva/quiz)
15		Glass Ionomer cement – Type – I, Manipulation to luting & restorative consistency, Demonstration of crown cementation using glass ionomer cement type I as a luting agent
16		Glass Ionomer cement – Type – I, Manipulation to luting & restorative consistency, Demonstration of crown cementation using glass ionomer cement type I as a luting agent
17	Glass Ionomer cement – Type – II	Glass Ionomer cement – Type – II, Introduction and Demonstration
18		Glass Ionomer cement – Type – II, Manipulation to luting consistency Theoretical evaluation (viva/quiz)
19		Glass Ionomer cement – Type – II, Manipulation to restorative consistency, Theoretical evaluation (viva/quiz)
20		Glass Ionomer cement – Type – II, Manipulation to luting & restorative consistency, Application of Glass Ionomer cement - Type – II as a restoration on prepared buccal pit cavity on tooth mounted on plaster model
21		Glass Ionomer cement – Type – II, Manipulation of cement to luting & restorative consistency, Application of Glass Ionomer cement - Type – II as a restoration on prepared class V cavity on tooth mounted on plaster model
22	Zinc Oxide Eugenol Cement	Zinc Oxide Eugenol Cement, Introduction and Demonstration
23		Zinc Oxide Eugenol Cement, Manipulation to luting consistency Theoretical evaluation (viva/quiz)
24		Zinc Oxide Eugenol Cement, Manipulation of cement to restorative consistency, Theoretical evaluation (viva/quiz)
25		Zinc Oxide Eugenol Cement, Manipulation to luting & restorative consistency, Application of Zinc Oxide Eugenol cement on excavated carious tooth mounted on plaster model
26		Zinc Oxide Eugenol Cement, Manipulation to luting & restorative consistency, Application of Zinc Oxide Eugenol cement on excavated carious tooth mounted on plaster model
27	Dental Varnish	Dental Varnish - Introduction and Demonstration & Manipulation
28	Silver Amalgam	Silver amalgam & varnish: Manipulation by students Trituration, Condensation, pre carve burnishing, Carving & post carving
29		Silver amalgam & varnish: Manipulation by students Trituration, Condensation, pre carve burnishing, Carving & post carving



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30		Silver amalgam & varnish: Demonstration of Manipulation using amalgamator: Trituration, Condensation, pre carve burnishing, Carving & post carving
31	Silver Amalgam	Silver amalgam & varnish: Manipulation and restoration on prepared class I cavity on extracted human teeth mounted on 1 inch cube plaster block
32		Silver amalgam & varnish: Manipulation and restoration on prepared class I cavity on extracted human teeth mounted on 1 inch cube plaster block
33	Calcium Hydroxide Cement	Calcium Hydroxide Cement, Introduction and Demonstration
34		Calcium Hydroxide Cement, Manipulation by students
35	Acid Etching Technique	Acid Etching Technique Introduction and Demonstration of acid etching technique on extracted central incisor to show frosted appearance
36		Acid Etching Technique -Manipulation of acid etching technique on extracted central incisor to show frosted appearance
37	Bonding agents	Bonding agents, Introduction, Demonstration & Manipulation
38		Bonding agents, Manipulation of acid etch technique and bonding agents
39	Resin Cements	Resin Cements, Introduction, Demonstration of Manipulation
40	Light-Cured Composite	Light-Cured Composite, Introduction and Demonstration of Manipulation
41	Self-Cure Composite	Self-Cure Composite, Introduction and Demonstration of Manipulation
42	Sharpening of instruments	Sharpening of instruments, Introduction and Demonstration
43	Finishing and polishing agents	Finishing and polishing of amalgam/GIC /composite Introduction and Demonstration of technique
44	Management of mercury spills	Management of mercury spills, Introduction and Demonstration on mercury waste management
45	Intracanal Irrigant	Intracanal Irrigant, Introduction and Demonstration on various types of irrigant and its use
46	Intracanal Medicament	Intracanal Medicament, Introduction and Demonstration on various types of medicament and its use
47	Gutta- percha	GP/Thermoplasctised GP, Introduction and Demonstration on various forms of GP and its use
48	Direct & Indirect Restorations	
49	Inlay Wax	
50	Tour of chrome cobalt lab	
	Mock exam	
	Mock exam	



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3	2		3			1						2			
CO-2	3						1	1					2			
CO-3				3			2						2	2	2	
CO-4				3			2						2	2	1	
CO-5	1										2		1	2	3	
CO-6											2		1			1

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

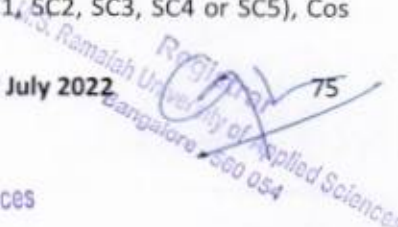
Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	60	60
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		150
Pre-Clinical laboratories/ Laboratory	140	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRHS	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	05	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	05	
Others		10
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	10	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		240

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the Cos. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), Cos are assessed as illustrated in the following Table.

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of Cos on each Component or Subcomponent of Evaluation						
Subcomponent ►	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	200 Marks
Subcomponent Type ►	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	
Maximum Marks ►	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X	X	X	X	X
CO-3	X	X		X	X	X
CO-4				X	X	X
CO-5	X	X	X			X
CO-6	X	X	X			X

The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment



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9. Course Resources

a. Essential Reading

1. Class Notes
2. Kenneth J. Anusavice, Ralph W. Phillips (2013). Phillips' Science of Dental Materials 12th edition, W.B. Saunders Company
3. William, Joseph, O'Brien (2002). Dental materials and their selection 3rd Edition Quintessence Pub. Co.,
4. Theodore Roberson, Harold Heymann and Edward

b. Recommended Reading

1. E.C.Combe, (1992), Notes on Dental Materials, 6th edition, Churchill Livingstone
2. John, F McCabe, Angus Walls (1998), Applied Dental Materials, 8th Edition, Oxford Blackwell scientific pub.
3. Robert George Craig, Marcus L Ward, (1997), Restorative dental materials. 10th Edition. Mosby
4. Gerald T. Charbeneau. (1988) Principles & practice of operative dentistry 3rd Edition Lea &Febiger
5. Stephen Cohen. (2006) Pathways of Pulp. 9th Edition. Elsevier Science Ltd
6. John I Ingle, (2009) Bakland Endodontics 6th Edition. Elsevier Science Ltd.
7. Rickne C. Scheid, Gabriela Weiss. (2011) Woelfel's Dental Anatomy, 8th edition, Lippincott Williams & Wilkins

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

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Course Specifications

Course Title	Preclinical Prosthodontics and Crown & Bridge
Course Code	BDC205A
Course Type	Core Course
Department	Prosthodontics and Crown & Bridge
Faculty	Dental Sciences

1. Course Summary

The aim of studying Preclinical Prosthodontics is to prepare students to diagnose patient needs and plan treatment for fabrication of removable/ fixed prosthesis to restore lost teeth and its associated structures and rehabilitate the patient. The specific aim of Preclinical Prosthodontics is to help students learn fundamentals of removable Prosthodontics on simulated patient models and prepare students for clinical Prosthodontics to comprehensively rehabilitate the patient needing a removable prosthesis.

The students will learn the Anatomy and Physiology of the edentulous jaw, consequences of missing teeth and design removable prosthesis to restore edentulism. The Course enables the student to manipulate dental materials to fabricate removable prosthesis on articulated casts while applying scientific principles of occlusion. The students acquire training on use of equipment and instruments related to fabrication of removable prosthesis.

2. Course Size and Credits

Number of Credits	14
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	360
Number of Weeks in a term	20
Department Responsible	Prosthodontics and Crown & Bridge
Total Course Marks	200
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe anatomy and physiology of the aging jaw
- CO-2. Differentiate partially edentulous conditions and design a removable prosthesis
- CO-3. Describe principles of teeth selection and occlusion for an ideal completely edentulous situation
- CO-4. Fabricate complete dentures by manipulation of dental materials
- CO-5. Prepare complete denture prosthesis applying principles of teeth arrangement
- CO-6. Demonstrate use of equipment and instruments related to removable prosthesis fabrication



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4. Course Contents

Course Content - Theory				
Lesson No	Chapter		Lesson Topics	Reference books
1-2	Introduction to Prosthodontics	i	Definitions	1-20
		ii	Commonly used materials	
		iii	Introduction to applications	
3	Biological considerations for maxillary and mandibular arches	i	Muscles of mastication in brief	1-20
4-5		ii	Identification of maxillary landmarks and their interpretation	
6-7		iii	Identification of mandibular landmarks and their interpretation	
8	Introduction to complete denture			1-20
9	Steps in complete denture			1-20
10	Record bases and occlusal rims	i	Materials and techniques Useful guidelines and ideal parameters	1-20
11		ii	Occlusal rims	
12	Examination, Diagnosis & Treatment planning & evaluation of diagnostic data in completely edentulous patients	i	Communication with the patient Understanding the patient	1-20
13		ii	Mental attitude Instructing the patient	
14		iii	Diagnosis with treatment planning for patient – With some teeth remaining ➤ Systemic status ➤ Local factor Diagnostic procedures	
15	The effects of ageing and biomechanics of the edentulous state	i	Support mechanism for natural dentition and CD Occlusion – functional and parafunctional considerations Changes in TMJ and facial height Esthetic, behavioral and adaptive responses The impact of age on the edentulous mouth Effecting of aging and edentulism	1-20
16	Improving the patient's denture foundation and ridge relation	i	Pre-operative examination Initial hard tissue & soft tissue procedure Secondary hard & soft tissue procedure	1-20
17			ii	
18	Impressions	i	Muscles of facial expression Biologic considerations for maxillary and mandibular impression including anatomy landmark and their clinical interpretation	1-20

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19		ii	Impression aims & objectives Impression material	
20		iii	Impression theories & techniques	
21		iv	Maxillary and mandibular impression procedures. Preliminary and Final impressions. Laboratory procedures involved with impression making (Beading & Boxing, and cast preparation	
22	Biological consideration in jaw relation & jaw movements, craniomandibular relations.	i	Mandibular movements	1-20
23		ii	Maxillo-mandibular relation Orientation jaw relation	
24		iii	Vertical jaw relation	
25		iv	Horizontal jaw relation	
26 - 27	Articulators	i	Definition, advantages and disadvantage	1-20
		ii	Classifications and discuss in detail on types	
28- 29	Relating the patient to the articulator.	i	Face bow types & uses	1-20
		ii	Face bow transfer procedures	
30-32	Tooth selection and arrangement.	i	Anterior teeth selection	1-20
		ii	Posterior teeth selection	
		iii	Esthetic and functional harmony	
33-35	Relating inclination of teeth to concept of occlusion- in brief	i	Introduction, differences between natural and CD occlusion, requirements of CD occlusion	1-20
		ii	Neurocentric concept, lingualized occlusion	
		iii	Balanced occlusal concept	
36	Trial dentures.			1-20
37-38	Laboratory procedures	i	Wax contouring Investing of dentures Preparing mold Preparing & packing acrylic resin Processing of dentures Recovery of dentures	1-20
		ii	Lab remount procedures - <ul style="list-style-type: none"> ▪ Recovering the complete denture from the cast ▪ Finishing and polishing the complete denture ▪ Plaster cast for clinical denture remount procedure 	
39	Denture insertion.	i	Insertion procedures Clinical errors Correcting occlusal disharmony	1-20
40-42	Trouble shooting -post insertion problems	i	Direct Sequelae I and management	1-20
		ii	Direct Sequelae II and management	
		iii	Indirect sequelae and management	
43	Treating abused tissues			1-20



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44-45	Prolonging the useful life of complete dentures	i	Relining of denture	1-20
		ii	Rebasing and Denture repair	
		iii	Review	
46	Immediate dentures			1-20
47	Single complete denture.			1-20
48	Overdenture.			1-20
49	Nutrition in the denture wearing patient			1-20
50	Introduction to RPD	i	Definitions in RPD Contraindications to FPD and implant therapy	1-20
51		ii	Parts of RPD	
52		iii	Outline the clinical and laboratory steps in RPD fabrication.	
53	Classification of RPD	i	Need for classification	1-20
54		ii	Kennedy's Classification/ Applegate's rules and Modification	
55		iii	Other classifications	
56-60	Revision			

Course Content Practical

1-3	Pouring the cast	Fabrication of maxillary edentulous cast using dental plaster	1-20
4-6	Pouring the cast	Fabrication of mandibular edentulous cast using dental plaster	1-20
7-8	Anatomic landmark	Identifying and marking of maxillary anatomical landmarks	1-20
9-10	Anatomic landmarks	Identifying and marking of mandibular anatomical landmarks	1-20
11-12	Dental cast	Fabrication of maxillary edentulous cast using dental stone	1-20
13-14	Dental cast	Fabrication of mandibular edentulous cast using dental stone	1-20
15-20	Temporary Denture base	Fabrication of temporary denture base for maxillary cast using shellac base plate by folding method	1-20
21-25	Temporary Denture base	Fabrication of temporary denture base for mandibular cast using shellac base plate by folding method	1-20
26-30	Temporary Denture base	Fabrication of temporary denture base for maxillary cast using shellac base plate by cutting method	1-20
31-35	Temporary Denture base	Fabrication of temporary denture base for mandibular cast using shellac base plate by cutting method	1-20
36-40	Temporary Denture base	Fabrication of maxillary temporary denture base using autopolymerizing acrylic resin and sprinkle on technique	1-20

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41-45	Temporary Denture base		Fabrication of mandibular temporary denture base using autopolymerizing acrylic resin and sprinkle on technique	1-20
46-50	Temporary Denture base		Fabrication of maxillary temporary denture base using autopolymerizing acrylic resin and dough adaptation with template technique	1-20
51-55	Temporary Denture base		Fabrication of mandibular temporary denture base using autopolymerizing acrylic resin and dough adaptation with template technique	1-20
56-60	Temporary Denture base		Fabrication of maxillary temporary denture base using autopolymerizing acrylic resin and finger adaptation technique	1-20
61-65	Temporary Denture base		Fabrication of mandibular temporary denture base using autopolymerizing acrylic resin and finger adaptation technique	1-20
66-75	Permanent denture base		Fabrication of maxillary permanent denture base using heat cure acrylic resin and compression molding technique <ul style="list-style-type: none"> ✓ wax adaptation ✓ flasking ✓ dewaxing ✓ packing ✓ curing ✓ finishing and polishing 	1-20
76-85	Permanent denture base		Fabrication of mandibular permanent denture base using heat cure acrylic resin and compression molding technique <ul style="list-style-type: none"> ✓ Wax adaptation ✓ Flasking ✓ Dewaxing ✓ Packing ✓ Curing ✓ Finishing and polishing 	1-20
85-90	Occlusal rims		Fabrication of maxillary occlusal rims (set 1)	1-20
91-96	Occlusal rims		Fabrication of mandibular occlusal rims (set 1)	1-20
97-102	Articulation		Articulation of maxillary and mandibular rims on mean value articulator (set 1)	1-20
103-110	Teeth arrangement		Maxillary anterior teeth arrangement (set 1)	1-20
111-118	Teeth arrangement		Mandibular anterior teeth arrangement (set 1)	1-20
119-124	Teeth arrangement		Maxillary posterior teeth arrangement (set 1)	1-20
125-134	Teeth arrangement		Mandibular posterior teeth arrangement (set 1)	1-20
135-140	Teeth arrangement		Wax up and carving (set 1)	1-20
141-155	Teeth arrangement		Teeth arrangement set 2	1-20
156-165	Teeth arrangement		Teeth arrangement set 3	1-20
166-175	Teeth arrangement		Teeth arrangement set 4	1-20
176-185	Teeth arrangement		Teeth arrangement set 5	1-20
186-205			Processing of one set of dentures <ul style="list-style-type: none"> ✓ Sealing ✓ De-articulation ✓ Flasking ✓ De-waxing 	1-20

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		✓ Packing ✓ Curing ✓ Finishing and polishing	
206-215		Teeth arrangement set 6	1-20
216-225		Teeth arrangement set 7	1-20
226-235		Teeth arrangement set 8	1-20
236-245		Teeth arrangement set 9	1-20
246-255		Teeth arrangement set 10	1-20
256-265		Teeth arrangement set 11	1-20
266-275		Teeth arrangement set 12	1-20
276-285		Teeth arrangement set 13	1-20
286-295		Teeth arrangement set 14	1-20
296-300		Test and Viva voce (set 15)	1-20

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3	3		
CO-2				3												
CO-3	2												2	2		
CO-4				2			1							2	1	
CO-5	2			2			1						2	2		
CO-6				2			1									

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		270
Pre-Clinical laboratories/ Laboratory	260	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRHH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	10	
Others		10
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	



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4. Brain Storming Sessions	00	
5. Group Discussions	10	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		20
Total Duration in Hours		360

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the Cos. In either component (CE or SEE) or subcomponent of CE (SC1, SC2). Cos are assessed as illustrated in the following Table.

Focus of Cos on each Component or Subcomponent of Evaluation			
Subcomponent ▶	Component 1: CE (20% Weightage)		Component 2: YEE (80% Weightage)
	SC1	SC2	
Subcomponent Type ▶	Practical Term Test	Practical Term Test	100 Marks
Maximum Marks ▶	50	50	
CO-1	X	X	X
CO-2			X
CO-3	X	X	X
CO-4	X	X	
CO-5	X	X	X
CO-6	X	X	X

The details of SC1, SC2 are presented in the Programme Specifications Document.

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

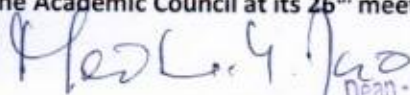
8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical

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		Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

5. Class Notes
6. Lakshmi (2010) Preclinical manual of Prosthodontics 1st Edition Elsevier
7. Anusavice (2014) Phillips dental materials 12th Edition Elsevier
8. Kenneth D Rudd, Robert M Morrow, John E Rhoads (1980) Dental laboratory procedures for removable partial dentures 2nd Edition Mosby
9. George A. Zarb, Charles I Bolender, Judson C Hickey, Gunnar E Carlsson (2012) Boucher's Prosthodontic treatment for Edentulous Patients. 13th Edition Mosby
10. George A. Zarb, Charles I Bolender, Judson C Hickey, Gunnar E Carlsson (1990) Boucher's Prosthodontic treatment for Edentulous Patients. 10th Edition Mosby-year Book
11. Sheldon Winkler (1979) Essentials of Complete Denture Prosthodontics 2nd Edition Elsevier
12. H R B Fenn, K P Liddelow, A P Gimson (2008) Clinical Dental Prosthetics 2nd Edition CBS Publisher
13. Alan B Carr, David T Brown, (2011) Mc Cracken's Removable Partial Prosthodontics. 12th Edition. Elsevier Mosby

b. Recommended Reading

1. Anne. M.R. Agur (1991) Grant's atlas of anatomy 9th Edition Williams & Wilkins
2. Robert G Craig (1993) Restorative dental materials 9th Edition Mosby year book
3. paperback
4. Vijay Prakash, Ruchi Gupta (2011) Prosthodontics- Exam preparatory manual for the undergraduates 1st Edition Elsevier
5. John J Manappallil (2008) Basic dental materials 2nd Edition Jaypee Brothers Medical Publishers (P) Ltd
6. Satish Chandra, Shaleen Chandra, Ratish Chandra (2000). A textbook of dental materials with MCQ's. 1st Edition Jaypee Brothers Medical Publishers (P) Ltd.
7. E C Combe (1992) Notes on dental materials 6th Edition Churchill Livingstone (Edinburgh)
8. Nitin Kumar Agarwal, Ruchi Tripathi. (2004) Clinical text on complete denture Prosthodontics 1st Edition. The Arora Medical Book Publishers Pvt. Ltd
9. John Osborne, George Alexander Lammie (1985) Partial Dentures 4th Edition CBS Publishers and Distributors Pvt Ltd
10. Kratochvil (1988) Partial Removable Prosthodontics 1st Edition Saunders

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11. Russell J Stratton, Frank J Weibelt (1988) An Atlas of Removable Partial Denture Design Quintessence Books
12. Joseph E Grasso, Ernest L Miller (1991) Removable Partial Prosthodontics 3rd Edition Mosby
13. Alan A Grant, Wesley Johnson (1992) Removable Denture Prosthodontics. 2nd Edition Churchill Livingstone

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Course Specifications

Course Title	Preclinical Conservative Dentistry
Course Code	BDC206A
Course Type	Core Course
Department	Conservative Dentistry and Endodontics
Faculty	Dental Sciences

1. Course Summary

The aim of Preclinical Conservative Dentistry is to help students learn the fundamentals of Conservative Dentistry and Endodontics and develop necessary manual skills to perform simple restorative and endodontic procedures in a simulation laboratory. The students are familiarized with tooth morphology, dental caries and pathological loss of tooth structure. Students learn various instruments and materials used in restorative dentistry and Endodontics. The students are assisted in developing psychomotor skills necessary for simple restorations of teeth in a simulation laboratory. The students are trained to perform basic endodontic techniques on extracted teeth.

2. Course Size and Credits:

Number of Credits	8
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	210
Number of Weeks in a term	20
Department Responsible	Conservative Dentistry and Endodontics
Total Course Marks	200
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Demonstrate knowledge and understanding of the biomaterial science and technology relevant to restorative dentistry
- CO-2. Explain the various causes and sequel of loss of tooth structure
- CO-3. Select the appropriate restorative instruments and manipulate materials for restoration of teeth
- CO-4. Apply the fundamental principles involved in the preparation and restoration of teeth
- CO-5. Perform technical procedures related to restorative dentistry on simulators
- CO-6. Demonstrate use of basic endodontic instruments and materials in extracted teeth

4. Course Contents

S No	Chapter		Subtopic	
1	Introduction to Operative Dentistry	i	Aim, scope and background information on dental diseases	
2	Tooth anatomy Nomenclature and tooth numbering	i	Terminologies	
3	Non carious loss of tooth structure	i	Attrition, Abrasion, Erosion and Abfraction	
4	Dental caries	i	Classification of dental caries, etiology and clinical features	

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5	Classification of cavities	i	Classification – G V Black	
6	Chair side positions Finger rest, grasps and guards	i	Chair side positions Finger rest, grasps and guards	
7	Hand cutting instruments	i	Classification, nomenclature and formula	
8	Tray Setup	i	Tray setup, sharpening	
9	Rotary cutting instruments	i	Dental burs and abrasives	
10		ii	Speed in operative procedures, current concepts	
11	Steps and principles of cavity preparation	i	Initial cavity preparation	
12		ii	Final cavity preparation	
13	Cavity preparation for silver amalgam	i	Class- I & II cavity preparation	
14	Pulp protecting agents	i	Pulp capping agents and techniques	
15	Management of deep carious lesion	i	Pulp capping – Direct and indirect	
16	Contact and contours	i	Matrices	
17	Teeth Separation	i	Wedges	
18	Silver Amalgam	i	Technical consideration	
19		ii	Finishing and polishing Mercury hygiene	
20	Failures of amalgam restorations	i		
21	Esthetic restorations	i	Cavity preparation and technical consideration for composite	
22		ii	GIC-technical consideration and cavity preparation	
23	Inlay & Onlay cavities	i	Principles, preparation	
24	Biological considerations	i	Effect of cavity preparation and restoration on P-D organ	
25	Preliminary Endodontics	i	Rationale and anatomy of pulp cavity and root apex	
26		ii	Pulpotomy ,pulpectomy, apexification	
27		iii	Root canal instruments	
28		iv	Access and working length	
29		v	Cleaning & shaping - principles	
30		vi	Obturation	

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Course Content – Practical		
Sl no	Preparation of tooth models in plaster and preparation of cavities and restoration with modeling wax	Reference
1-3	Introduction – making geometrical cubes	
4-6	Preparation of geometrical shapes	
7-9	Preparation of geometrical shapes	
10-13	Preparation of Class I cavity on 24 plaster model	1
14-16	Preparation of Class I cavity on 46 plaster model	1
17-19	Preparation of Class I cavity Mesial & Distal pit on 34 plaster model	1
20-22	Preparation of Class I cavity Mesial & Distal pit on 16 plaster model	1
23-25	Preparation of Class I cavity with Buccal extension on 46 plaster model Preparation of Class I distal pit with palatal extension cavity on 16 plaster model	1
26	Preparation of Class I buccal pit cavity on 46 plaster model	1
27	Preparation of Class III cavity on 11 plaster model	1
28-30	Preparation of Class I lingual pit cavity on 11 plaster model Preparation of Class V cavity on 11 plaster model Preparation of Class V cavity on 16 plaster model	1
31-34	Preparation of Class II Mesioocclusal cavity on 24 plaster model	1
35-38	Preparation of Class II Mesioocclusal cavity on 46 plaster model	1
39-41	Preparation of Class II Mesioocclusal cavity on 16 plaster model	1
42-44	Preparation of Class II Mesioocclusal cavity on 34 plaster model	1
45-47	Preparation of Class II Mesioocclusal distal cavity on 46 plaster model	1
48-50	Preparation of Class II Mesioocclusal distal cavity involving oblique bridge on 16 plaster model	1
51-55	Waxing and carving of prepared cavities	1
56-58	Preparation of Class I cavity on 46 Typodont teeth	1
59-61	Preparation of Class I cavity on 24 Typodont teeth	1
62-63	Preparation of Class I cavity on 35 Typodont teeth	1
64-65	Preparation of Class I cavity Mesial & Distal pit on 34 Typodont Teeth	1
66-68	Preparation of Class I cavity Mesial & Distal pit on 26 Typodont teeth	1
69	Preparation of Class I cavity with Buccal extension on 46 Typodont teeth	1
70	Preparation of Class I distal pit with palatal extension on 26 Typodont teeth	1
71-72	Base application and restoration on 24	1
73	Base application and restoration on 35	1
74	Base application and restoration on 34	1
75-76	Base application and restoration on 26	1
77-78	Base application and restoration on 46	1
79-81	Preparation of class II Mesioocclusal cavity on 46 Typodont teeth	1
82-84	Preparation of class II Mesioocclusal cavity on 36 Typodont teeth	1
85-87	Preparation of class II Mesioocclusal cavity on 16 Typodont teeth	1
88-90	Preparation of class II Distoocclusal cavity on 25 Typodont teeth	1



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91-93	Base and restoration of all prepared cavities	1
94-96	Base and restoration of all prepared cavities	1
97-99	Preparation of class II Mesial box preparation on 36 Typodont teeth	1
100-101	Preparation of class II Mesioocclusal cavity on 14 Typodont teeth	1
102-103	Preparation of class II Distoocclusal cavity on 45 Typodont teeth	1
104-106	Preparation of class II Distoocclusal cavity on 17 Typodont teeth	1
107-108	Preparation of Class II Distoocclusal cavity on 37 Typodont teeth	1
109-111	Preparation of Class II Mesioocclusal cavity on 28 Typodont teeth	1
112-115	Preparation of Class II Distoocclusal cavity on 27 Typodont teeth	1
116-117	Preparation of Class II Mesioocclusal cavity on 44 Typodont teeth	1
118-120	Preparation of Class II Mesiooccluso Distal cavity on 47 Typodont teeth	1
121-123	Preparation of Class II Mesiooccluso Distal cavity on 15 Typodont teeth	1
124-127	Preparation of Class II Mesiooccluso Distal cavity on 26 Typodont teeth	1
128-130	Preparation of Class II Mesioocclusal cavity (Conservative) on 46 Typodont teeth	1
131-133	Preparation of Class II Distoocclusal cavity (Conservative) on 46 Typodont teeth	1
134-139	Base & Restoration of prepared cavities	1
140-144	Base & Restoration of prepared cavities	1
145-148	Preparation of Class V cavity on 11 Typodont teeth Preparation of Class V cavity on 13 Typodont teeth	1
149-151	Preparation of Class V cavity on 15 Typodont teeth Preparation of Class V cavity on 26 Typodont teeth	1
152-153	Preparation of Class III Mesial cavity on 11 Typodont teeth	1
154-156	Preparation of Class III Distal cavity on 22 Typodont teeth	1
157-159	Preparation of Class III Distal cavity on 13 Typodont teeth	1
160-164	Class V restoration with GIC	1
	III Inlay preparation	
165-167	Preparation of Class I inlay	1,2,6
168-170	Preparation of Class II inlay	1,2,6
	IV Root canal treatment	
171-173	Access opening of anterior tooth	5,7,8
174	Working length determination	5,7,8
175-178	Cleaning & shaping	5,7,8
179-180	Obturation	5,7,8

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1				2											2	
CO-2	2												2	2		
CO-3		1		2											2	

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CO-4	2		2								2	2
CO-5			2								2	2
CO-6			2								2	2
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution												

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	30	30
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		140
Pre-Clinical laboratories/ Laboratory	130	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	10	
Others		
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	10	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		20
Total Duration in Hours		210

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the Cos. In either component (CE or SEE) or subcomponent of CE (SC1, SC2). Cos are assessed as illustrated in the following Table.

Focus of Cos on each Component or Subcomponent of Evaluation			
Subcomponent ▶	Component 1: CE (20% Weightage)		Component 2: YEE (80% Weightage)
	SC1	SC2	
Subcomponent Type ▶	Practical Term Test	Practical Term Test	100 Marks
Maximum Marks ▶	50	50	
CO-1	X	X	X

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

CO-2	X	X	X
CO-3	X	X	X
CO-4	X	X	X
CO-5	X	X	X
CO-6	X	X	X
The details of SC1, SC2 are presented in the Programme Specifications Document.			

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

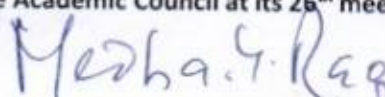
9. Course Resources

a. Essential Reading

1. Class Notes
2. Roberson T, Heymann H and Swift E. (2013), Sturdevant's Art and Science of Operative Dentistry. 5th Edition, Mosby Year Book Inc.
3. Charbeneau G T. (1988), Principles & Practice of Operative Dentistry. 3rd Edition, Lea & Febiger.
4. Anusavice K J, Phillips R W. (2013), Phillips' Science of Dental Materials. 12th Edition, W.B.Saunders Company.
5. Craig R G, Ward M L. (1997), Restorative Dental Materials. 10th Edition, Mosby Year Book Inc.
6. Suresh Chandra B, Gopi Krishna V. (2010), Grossmans Endodontic Practice. 12nd Edition, Varghese Pub House.

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

b. Recommended Reading

1. Marzouk M.A. (1997), Operative dentistry -Modern Theory and Practice. 1st Edition, All India Publishers & Distributors.
2. Cohen S. (2006) Pathways of Pulp. 9th Edition, Elsevier Science Ltd.
3. Ingle J, Bakland. (2009), Endodontics. 6th Edition, Elsevier Science Ltd

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	General Medicine
Course Code	BDC301A
Course Type	Core Course
Department	General Medicine
Faculty	Dental Sciences

1. Course Summary

The study of General Medicine aims to prepare the student for comprehensive, preventive and therapeutic medical care for various diseases as applicable to dentistry.

The students learn indications and contraindications of drugs used in dental procedures and different systemic diseases. The students also learn to elicit history and perform basic examination procedures on the patient. The students are trained to diagnose, by visual and superficial examination of the body, diseases of the heart, lungs, kidneys, blood and endocrinal system in a hospital setting. The students are also trained to handle medical emergencies encountered in dental practice

2. Course Size and Credits

Number of Credits	07
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	150
Number of Weeks in a term	20
Department Responsible	General Medicine
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe systemic diseases with dental implications
- CO-2. Compare and contrast signs and symptoms of systemic diseases, infections, hematological disorders, nutritional disorders, critical care and drug reactions
- CO-3. Distinguish systemic diseases by visual and physical examination of organ systems
- CO-4. Recommend and justify appropriate investigations for differential diagnosis of diseases with empathy and compassion for patients' needs
- CO-5. Plan appropriate treatment with a multidisciplinary approach.
- CO-6. Explain management protocol of medical emergencies encountered in dental practice

4. Course Contents

Course Contents - Theory			
Sl No	Chapter	Lesson Topics	Reference books
1	Introduction	Aims of medicine, definitions of signs, symptoms, Diagnosis- differential diagnosis, treatment and prognosis. History taking and physical examination of the patients, medical ethics	1-4
2			
3	Infection	Enteric Fever, AIDS, Herpes Simplex, Herpes Zoster, Syphilis Diphtheria, Tuberculosis, Malaria, Infectious Mononucleosis, Mumps Measles, Rubella	1-4
4			
5			
6			
7			



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

8	GIT	Stomatitis, Gingival Hyperplasia, Dysphagia, Acid Peptic Disease, Jaundice, Acute And Chronic Hepatitis, Cirrhosis of Liver, Ascites. Hepatotoxic Drugs, Diarrhea, Dysentery, Amoebiasis, Malabsorption	1-4
9			
10			
11			
12			
13	RS	Pneumonia, COPD, Bronchial asthma lung abscess, Bronchiectasis , lung cancers Pneumothorax. Respiratory failure	1-4
14			
15			
16			
17			
18	CVS	Acute Rheumatic Fever Rheumatic Valvular Heart Disease, HTN,IHD, Infective Endocarditis, Common Arrhythmias Congestive Cardiac Failure Congenital Heart Disease,	1-4
19			
20			
21			
22			
23	Hematology	Anemias, Bleeding And Clotting Disorders, Leukemias, Agranulocystosis, Splenomegaly, Oral Manifestations Of Hematologic Disorders, Thrombocytopenia, Lymphomas, Blood transfusion	1-4
24			
25			
26			
27			
28			
29			
30			
31			
32	Renal	Acute Nephritis, Nephrotic Syndrome, Renal Failure, UTI	1-4
33			
34			
35			
36	CNS	Facial Palsy, Facial Pain, Trigeminal Neuralgia, Epilepsy, Headache, Cranial Nerves Meningitis	1-4
37			
38			
39			
40			
41	Nutrition	Vitamin Deficiency, Osteoporosis ,PEM, Balanced Diet	1-4
42			
43			
44			
45	Endocrine	Diabetes Mellitus Acromegaly, Hypothyroidism Calcium Metabolism And Parathyroid, Addison's Disease, Cushing's Syndrome.	1-4
46			
47			
48			
49			
50			
51			

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

52			
53	Critical Care	Syncope, Cardiac Arrest, CPR Shock –Cardiogenic, Hypovolemic, Septic Anaphylactic, PTE ,Coma, ARDS	1-4
54			
55			
56			
57			
58			
59	Behavioral Sciences	Interview technique- doctor patient relationship, Psychiatric disorders, Neurotic Disorders	1-4
60			
Course content - Clinicals			
Day 1	Introduction to hospital setup		
Day2 -13	Case discussion, examination, investigation, diagnosis and management of patient		
Day14	Assessment - CEP A		
Day15	Viva		
Day16 - 28	Case discussion, examination, investigation, diagnosis and management of patient		
Day29	Assessment – CEP B		
Day30	Viva		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2	3												3			
CO-3	3												3			
CO-4			3			2								3	1	
CO-5				2	2									2		
CO-6	3						1						3			

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		
1. Demonstration using Videos	00	05
2. Demonstration using Physical Models /Patients	05	
Practical Work		
Pre-Clinical laboratories/ Laboratory	00	80
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	70	
Field work/dental camp	00	
Outreach centres	00	



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	10	
Others		05
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		150

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X		X	X	X
CO-3				X	X	X
CO-4	X	X	X	X	X	X
CO-5	X	X	X			X
CO-6	X	X		X	X	X
The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.						

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Christopher E, (2013) Davidson's Principles of Practice of Medicine. 22nd Edition. Churchill Livingstone
3. Michael S (2013) Hutchison's Clinical Practice. 23rd Edition Churchill Livingstone
4. API (,2014) Text book of Medicine 9th Edition, N. Delhi, Jaypee Brothers

b. Recommended Reading

1. Harrison 2013 Principles of Internal Medicine. 18th Edition McGraw Hill US

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	General Surgery
Course Code	BDC302A
Course Type	Core Course
Department	General Surgery
Faculty	Dental Sciences

1. Course Summary

The study of General Surgery aims to prepare the students for diagnosis and surgical management of common ailments with emphasis on head and neck region. The students learn about surgical topics like Ulcers, Wounds, Shock and Burns. The students also learn about thyroid diseases, Head and Neck neoplasms including Salivary gland diseases, Oral malignancy, Diseases of Lymph nodes, facio-maxillary injuries and their management. The students are trained in the appropriate utilization of instruments to perform simple surgical procedures for treatment of diseases of head and neck regions

2. Course Size and Credits:

Number of Credits	07
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	150
Number of Weeks in a term	20
Department Responsible	General Surgery
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe evolution, clinical features, diagnosis and management of common surgical ailments
- CO-2. Discuss the clinical features, diagnosis and management of head and neck diseases
- CO-3. Elicit clinical history and demonstrate clinical examination of Ulcer and swellings with empathy and compassion
- CO-4. Demonstrate the use of appropriate instrumentation in surgical management of diseases
- CO-5. Recommend and justify appropriate surgical management protocols for diseases
- CO-6. Evaluate advances in diagnostics and biomedical equipment in surgical management of head and neck diseases

4. Course Contents

Course Content: Theory				
Sl No	Chapter		Lesson Topics	Reference books
1	History		- Evolution of Surgical specialty	1-3
2			- Contributions by scientists, teachers and investigators.	
3	Wounds		- Types and classifications	1-3
4				

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5			- Healing and repair of wounds - Complications of wounds	
6.	Inflammation		- Of soft tissues & hard tissues	1-3
7			- Causes of inflammations	
8			- Treatment	
9.	Infections		- Acute Chronic and specific infections	1-3
10			- Acute: Skin infections, Cellulitis, Carbuncle	
11			- Chronic – Abscess – Oral aspects skin and appendages	
12			- Specific – Tetanus, Gangrene,	
13			Tuberculosis Actinomycosis, Cancrumoris,	
14			Vincent's angina, Septicemia	
15			- Transmissible viral infections like HIV,	
16			Hepatitis B.	
17	Shock		- Definition	1-3
18			- Classification	
19			- Clinical Features and Management of Types of Shock.	
20	Haemorrhage		- Types	1-3
21			- Causes - Clinical Features and Treatment	
22	Blood group and Blood Transfusion		- Indications	1-3
23			- Complications and its management	
24			- Blood products and its indications for transfusion	
25	Tumours, Ulcers, Cysts, Sinus and Fistula:		- Classifications	1-3
26			- Clinical Examination	
27			- Treatment of Types of Benign and Malignant Tumours	
28			- Jaw Tumours Classification	
29			Clinical features and Treatment	
30	Diseases of Lymphatic system		- Of head and region	1-3
31			- Like Tuberculosis, Lymphomas	
32			- Leukaemias, Metastatic Lymph nodes	
33				
34.	Diseases of Nasopharynx		- Infections, Tumours of the region	1-3
35			- Tracheostomy-Indications	
36			complications	
37.	Nervous System		- Reference to peripheral nerves, their injuries and their regeneration & treatment.	1-3
38			- Reference to face – Facial nerve, Glossopharyngeal nerve, recurrent laryngeal nerve, trigeminal nerve.	
39				
40				
41	Fractures: General Principles		- Clinical presentations and treatment	1-3
42				

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

43			- Maxillary Fractures - Mandibular Fractures	
44.	Anomalies of Development of Face		- Surgical anatomy and development of Face.	1-3
45			- Cleft Lip	
46			- Cleft Palate	
47			- Management of Anomalies	
48				
49.	Diseases of Thyroid and Parathyroid		- Surgical Anatomy, Pathogenesis	1-3
50			- Clinical features of dysfunction of thyroid and management	
51			- Malignant diseases of thyroid – classification	
52			-Clinical features	
53			-Treatment	
54				
55	Biopsy-Types and Procedures Operative Surgery		- Principles of Minor surgical procedures	1-3
56			- Description of Major surgery procedures like Thyroid, Parotid Skin Grafting	
57			- X-Rays	
58			- Instruments	
59			- Sterilization methods	
60			- Suture materials and Drains - Principles and different types of Anesthesia	

Course Content: Clinicals

Day 1	Introduction to hospital setup
Day 2 -13	Case discussion, examination, investigation, diagnosis and management of surgical patient
Day 14	Assessment - CEP A
Day 15	Viva
Day 16 - 28	Case discussion, examination, investigation, diagnosis and management of surgical patient
Day 29	Assessment – CEP B
Day 30	Viva

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2	3	2											3			
CO-3		3				2								3		
CO-4	2												2			
CO-5		2		2										2		
CO-6	3						1								3	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		05
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	05	
Practical Work		80
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	70	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	10	
Others		05
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		150

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the Cos. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), Cos are assessed as illustrated in the following Table.

Focus of Cos on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				
CO-2	X	X		X	X	X
CO-3				X	X	X
CO-4				X	X	X

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

CO-5	X	X	X	X	X	X
CO-6	X	X	X			X
The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.						

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Das S, (2006), A Manual on Clinical Surgery. 4th Edition Calcutta
3. Mann C V, (2000), Bailey and Loves Short Practice of Surgery, 26th Edition, Oxford University Press
4. Bailey H, (1997) Demonstration of Physical Signs in Clinical Surgery. 18th Edition. Butterworth Heinemann UK

b. Recommended Reading

1. Somen Das, (2008), Concise Textbook of Surgery –5th Edition,
2. Greg McLatchie, Neil Barley, Joama Chikure, (2013) - Oxford Textbook of Surgery-4th Edition, Oxford University Press
3. Norman S Williams, Christopher J.K. Bulstrode, P.Ronan O Cannell, (2013), Bailey & Love's Short Practice of Surgery, 26th Edition, Taylor & Eranevis Group CRC Press



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4. Vencent T Devita Jr.MD, Samuel Hellman MD, Steven A Rosenberg (2001), Textbook of Surgery Devita, 6th Edition, Lippincott Williams & Wilkins.

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	Oral Pathology and Oral Microbiology
Course Code	BDC303A
Course Type	Core Course
Department	Oral & Maxillofacial Pathology and Oral Microbiology
Faculty	Dental Sciences

1. Course Summary

The study of oral pathology aims to help students learn about various diseases affecting oral and para oral structures.

The students will be appraised about the clinical and microscopic features of diseases of the oral cavity and related structures such as teeth, salivary glands, temporomandibular joints, facial muscles and perioral skin. Students will be trained to understand advanced diagnostic methods like immunohistochemistry, immunofluorescence, culture techniques and image analysis besides simple light microscopy.

2. Course Size and Credits:

Number of Credits	9
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	195
Number of Weeks in a term	20
Department Responsible	Oral & Maxillofacial Pathology and Oral Microbiology
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Identify, classify and describe different forms of diseases affecting the oral and para oral structures.
- CO-2. Discuss etiopathogenesis of diseases of oral cavity.
- CO-3. Demonstrate the use of a light microscope independently to identify specific histopathological features on slides to distinguish morphological and functional changes associated with different pathological processes.
- CO-4. Interpret the findings of routine clinical and pathological investigations.
- CO-5. Analyse the impact of pathophysiological processes on cells, tissue and organs to correlate with clinical presentation.
- CO-6. Evaluate the possible approaches for the diagnosis of oral diseases.

4. Course Contents

Course Contents - Theory			
Sl No	Topic	Sub Topic	References
1	Diseases of Nerves and Muscles	Diseases of Nerves	1,2,3,7
		Diseases of Muscles	
3	Physical and Chemical Injuries	Injuries to hard and soft tissues	1,2
4		Diseases of dental pulp	1,2,3,8

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5	Diseases of Pulp and Periapical Tissues	Diseases of periapical tissues	
6		Osteomyelitis	
7	Spread of Oral Infections	Cellulitis, Ludwig's Angina, Intracranial complications of dental Infections	1,2,3,8
8		Maxillary sinusitis, focal Infection and foci of Infections	
9	Regressive Alterations of teeth	Regressive Alterations of teeth	1,2,3,8
10	Biopsy, Cytology & Healing of Oral wounds	Biopsy, healing of biopsy wound and basic aspects of cytology	1,2,3
11		Factors affecting healing of wounds, healing of extraction wounds, dry socket, healing of fractures	
12	Developmental Disturbances	Jaws, lips, palate and salivary glands	1,2,3,8
13		Oral mucosa, Gingiva, Tongue and lymphoid tissue	
14		Size and number of teeth	
15		Shape of teeth	
16		Shape of teeth	
17		Structure of teeth	
18		Structure of teeth	
19	Allergic and immunologic diseases	Allergic Diseases	1,2,3
20		Immunologic diseases	
21	Blood disorders	Clinico pathological aspects and oral manifestations of anemia	1,2,3,7
22		Clinico pathological aspects and oral manifestations of Polycythemia, leukopenia, Neutropenia	
23		Hemophilia, Oral manifestations of leukemia and Purpura	
24	Oral Aspects of Metabolic Diseases	Disturbances in Metabolism of Minerals, carbohydrates, proteins and hormones	1,2
25	Diseases of Periodontium	Gingivitis, Juvenile Periodontitis, Drug induced gingival growth and Papillon Lefevre syndrome	1,2
26	Bacterial Infections	Scarlet fever, tuberculosis	1,2,3,7
27		Actinomycosis and other bacterial infections	
28	Fungal Infections	Candidiasis	1,2,3,7
29		Other fungal infections	
30	Viral Infections	Herpes Simplex, Zoster, Infectious mononucleosis and Herpangina	1,2,3,7

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31	Cysts of the Jaw	Introduction & classification of developmental cysts	6,1,2
32		Developmental cysts	
33		Developmental cysts	
34		Inflammatory cysts	
35		Pseudocysts and Fissural cysts	
36	Odontogenic Tumors	Introduction & classification systems of odontogenic tumors	5,1,2,3,7
37		Benign odontogenic tumors	
38		Benign odontogenic tumors	
39		Malignant odontogenic tumors	
40	Tumors of the Jaws	Benign epithelial tumors	1,3,7
41		Benign epithelial tumors	
42		Potentially malignant disorders	
43		Potentially malignant disorders	
44		Potentially malignant disorders	
45		Malignant epithelial tumors	
46		Malignant epithelial tumors	
47		Benign connective tissue tumors	
48		Benign connective tissue tumors	
49		Tumor like lesions	
50		Tumor like lesions	
51		Malignant connective tissue tumors	
52		Malignant connective tissue tumors	
53		Malignant connective tissue tumors	
54	Salivary gland disorders	Introduction & Classification of SGD's - Pleomorphic adenoma	1,2,3
55		Warthin's Tumor and Basal Cell Adenoma	
56		Muco epidermoid carcinoma and Adenoid cystic carcinoma , Acinic cell carcinoma	
57		Non Neoplastic lesions of Salivary glands	
58	Skin Lesions	Hereditary skin lesions	1,2,3,7
59		Auto immune skin lesions	
60		Pemphigus	
61		Pemphigoid	
62		Genodermatoses	
63		Genodermatoses	
64	Bone Lesions	Hereditary Bone Diseases	1,2,3,7
65		Hereditary Bone Diseases	
66		Fibro osseous lesions	
67		Fibro osseous lesions	



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68		Fibro osseous lesions	
69	Human Immunodeficiency Virus	Structure, symptoms and lab investigations	1,2,3,7
70		Oral Manifestations of HIV	
71	Forensic Odontology	Introduction, definition, scope of forensic dentistry and medicine	1,2
72		Gender Determination and Age estimation	
73		Lip prints, bite marks, Rugae analysis	
74	Dental Caries	Histopathology of Dental caries	1,2,3,7,8
75		Immunology of Dental caries	

Course content – Practicals

Sl No	Topic	Sub topic
1	Introduction to Microscopy	Usage of Microscope
2	Cells and Stains Demonstrations Examinations of slides	Different types of epithelial cells
3		Blood cells
4		Connective tissue cells
5		H & E stain
6		PAS stain
7		Mallorys stain
8		Masson Trichrome stain
9		Toluidine Blue stain
10		Dental caries Demonstrations Examinations of slides
11	Pit and fissure caries	
12	Dentinal caries	
13	Pulp and Periapical lesions Demonstrations Examinations of slides	Periapical granuloma
14	Odontogenic cysts Demonstrations Examinations of slides	Dentigerous cyst
15		OKC
16		Radicular cyst
17		Cholesterol clefts
18		Aneurysmal Bone cyst
19		Mucocele
20	Odontogenic Tumors Demonstrations Examinations of slides	Unicystic Ameloblastoma
21		Follicular Ameloblastoma
22		Plexiform Ameloblastoma
23		Desmoplastic Ameloblastoma
24		CEOT
25	Benign and malignant Tumors Demonstrations Examinations of slides	Squamous Papilloma
26		Hyperkeratosis
27		Leukoplakia
28		Early OSMF
29		Advanced OSMF
30		CA in situ
31		Verrucous carcinoma
32		Well differentiated SCC



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33		Moderately differentiated SCC
34		Poorly differentiated SCC
35		Fibroma
36		Neurilemmoma
37		Neurofibroma
38		Lipoma
39		Peripheral giant cell granuloma
40		Malignant melanoma
41		Central giant cell granuloma
42	Salivary gland Tumors	Pleomorphic Adenoma
43	Demonstrations	Warthins tumor
44	Examinations of slides	MEC
45		Mucocele
46		ACC
47	Bacterial Infections	Actinomycosis
48	Demonstrations	Chronic osteomyelitis
49	Examinations of slides	TB lymphadenitis
50	Bone disorders	Fibrous dysplasia
51	Demonstrations	Ossifying fibroma
52	Examinations of slides	Osteosarcoma
53		Osteoid Osteoma
54	Skin Lesions	Lichen Planus
55	Demonstrations Examinations of slides	Pemphigus
56	Miscellaneous	Pyogenic granuloma
57	Demonstrations Examinations of slides	Lymphangioma
58	Casts and Specimens	Different specimens and casts
59	Demonstrations	Specimens and casts
60		Specimens and casts

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2	3												3			
CO-3		2		3										2		
CO-4		2	3											3		
CO-5		2	3											2		
CO-6				3										3		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	65	65
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		100
Pre-Clinical laboratories/ Laboratory	90	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	10	
Others		10
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	10	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		195

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

Focus of Cos on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X		X	X	X
CO-3	X	X				X
CO-4	X	X		X	X	X

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CO-5	X	X	X			X
CO-6	X	X	X			X
The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.						

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Roberson T, Heymann H and Swift E. (2013), Sturdevant's Art and Science of Operative Dentistry. 5th Edition, Mosby Yearbook Inc.
3. Charbeneau G T. (1988), Principles & Practice of Operative Dentistry. 3rd Edition, Lea & Febiger.
4. Anusavice K J, Phillips R W. (2013), Phillips' Science of Dental Materials. 12th Edition, W.B.Saunders Company.
5. Craig R G, Ward M L. (1997), Restorative Dental Materials. 10th Edition, Mosby Year Book Inc.
6. Suresh Chandra B, Gopi Krishna V. (2010), Grossmans Endodontic Practice. 12nd Edition, Varghese Pub House.

b. Recommended Reading

1. Marzouk M.A. (1997), Operative dentistry -Modern Theory and Practice. 1st Edition, All India Publishers & Distributors.

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2. Cohen S. (2006) Pathways of Pulp. 9th Edition, Elsevier Science Ltd.
 3. Ingle J, Bakland. (2009), Endodontics. 6th Edition, Elsevier Science Ltd
- c. **Magazines and Journals**
- d. **Websites**
1. www.pubmed.com
- e. **Other Electronic Resources**
1. HELINET
 2. EBSCO HOST



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Course Specifications

Course Title	Oral Medicine and Radiology
Course Code	BDC401A
Course Type	Core Course
Department	Oral Medicine and Radiology
Faculty	Dental Sciences

1. Course Summary

Oral Medicine and Radiology aims to prepare students to diagnose and manage oral disorders. The students learn to perform radiographic procedures and interpret the images of the oral and maxillofacial region. The students are trained to develop a differential diagnosis and formulate comprehensive patient specific treatment plan.

2. Course Size and Credits

Number of Credits	9
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	225
Number of Weeks in a term	20
Department Responsible	Oral Medicine and Radiology
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe clinical signs and symptoms of common oral and mucosal diseases.
- CO-2. Explain differential diagnosis of various oral conditions
- CO-3. Interpret and report radiographic findings
- CO-4. Perform clinical examination of head and neck with compassion and empathy, recommend appropriate investigations and develop a treatment plan
- CO-5. Perform various intraoral radiographic techniques / exercises
- CO-6. Analyse oral and systemic clinical and radiographic findings to differentially diagnose and suggest management protocols

4. Course Contents

Sl. No.	Chapter	Subtopics/ Contents	Ref (Essential Reading)
1	Introduction to Oral Medicine and Radiology	<ul style="list-style-type: none"> • History, Origin, Definitions, Scope and limitations 	1, 4, 9, 10, 11
2	Principles of Diagnosis	<ul style="list-style-type: none"> • Definition, components of case history, Physical examination, concepts of provisional and differential diagnosis 	1, 3, 4



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3		<ul style="list-style-type: none"> Clinical chair side investigations, radiological investigations, treatment planning and prognosis Examination of swelling, ulcer, erosions, sinus, fistula etc 	
4	Dental Caries	<ul style="list-style-type: none"> Definition and classification, theories of dental caries, clinical and radiological features, diagnosis of dental caries, caries activity tests, management 	1, 2, 4, 9, 11
5	Pulp and Peri-apical diseases	<ul style="list-style-type: none"> Sequelae of dental caries and progression, Classification 	1, 2, 4, 5, 9, 11
6		<ul style="list-style-type: none"> Clinical and radiological features, and management 	
7	Osteomyelitis	<ul style="list-style-type: none"> Definition, classification, clinical and radiological features, differential diagnosis, medical and surgical management 	1, 2, 4, 5, 9, 10, 11
8	Oral sepsis and inflammation	<ul style="list-style-type: none"> Inflammation and injury, Spread of oral infection, boundaries and clinical manifestations of facial spaces, Emergency and medical management 	1, 2, 4,
9	Radiation Physics	<ul style="list-style-type: none"> Basic structure of an atom, Electromagnetic spectrum, X ray machine 	9, 10, 11
10		<ul style="list-style-type: none"> Production of X rays, Factors controlling the X ray beam 	
11		<ul style="list-style-type: none"> Interactions of X rays with matter, Dosimetry 	
12	Radiographic image receptors and accessories	<ul style="list-style-type: none"> Classification of image receptors, Composition, sizes and Uses of intraoral and extraoral image receptors 	9, 10, 11
13		<ul style="list-style-type: none"> Extraoral film and intensifying screens, Grids, Radiographic accessories- film holding devices 	
14	Ideal Radiography and Projection Geometry	<ul style="list-style-type: none"> Definition, Factors responsible for ideal radiographs, Principles of shadow casting, Object localization techniques 	9, 10, 11
15	Regressive alterations of teeth	<ul style="list-style-type: none"> Classification, Developmental malformations, Regressive alterations of teeth 	1, 2, 4, 9, 10, 11
16	Pigmented Lesions	<ul style="list-style-type: none"> Classification, Exogenous and endogenous pigmented lesions 	1, 2, 4, 5
17		<ul style="list-style-type: none"> Clinical diagnosis and management 	
18	Processing of X ray Films	<ul style="list-style-type: none"> Latent image formation. Composition of processing solutions 	9, 10, 11
19		<ul style="list-style-type: none"> Dark room layout. Different methods of processing 	
20		<ul style="list-style-type: none"> Advantages and disadvantages of different processing methods 	
21	Faulty Radiographs	<ul style="list-style-type: none"> Exposure and processing errors 	9, 10, 11



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22	Principles of radiographic Interpretation	<ul style="list-style-type: none"> Principles of radiographic interpretation. Radiographic interpretation of dental caries, peri-apical and periodontal diseases 	9, 10, 11
23	Normal anatomical landmarks	<ul style="list-style-type: none"> Landmarks of maxillary and mandibular jaw structures 	9, 10, 11
24	IOPA Techniques	<ul style="list-style-type: none"> Indications of various intraoral projections. Techniques of IOPA radiography 	9, 10, 11
25	Vesiculobullous and ulcerative lesions	<ul style="list-style-type: none"> Classification, Clinical features and differential diagnosis, Chair side investigations, Clinical and laboratory diagnosis, Medical management 	1, 2, 3, 4, 5, 6
26			
27			
28	Red and White lesions	<ul style="list-style-type: none"> Classification, Clinical features and differential diagnosis, Chair side investigations, Clinical and laboratory diagnosis, Medical management 	1, 2, 3, 4, 5, 6
29			
30			
31	Oral Cancer	<ul style="list-style-type: none"> Definition and etiology, Etiopathogenesis 	1, 2, 3, 4, 5, 9, 11
32		<ul style="list-style-type: none"> Clinical features, staging and grading 	
33		<ul style="list-style-type: none"> Management 	
34	Radiation Biology	<ul style="list-style-type: none"> Biologic effects of radiation 	9, 10, 11
35		<ul style="list-style-type: none"> Effects of radiation on oral structures Radiation protection 	
36		<ul style="list-style-type: none"> Principles of image formation and focal trough 	
37	Extraoral Radiography	<ul style="list-style-type: none"> Radiographic interpretation 	9, 10, 11
38		<ul style="list-style-type: none"> Types of extraoral radiography 	
39		<ul style="list-style-type: none"> Indications, contraindications and uses of different extraoral views 	
40	Radiation Protection	<ul style="list-style-type: none"> Radiation protection principles and protocols 	9, 10, 11
41	Odontogenic Cysts	<ul style="list-style-type: none"> Definition and classification, Clinical features, Radiological features, Diagnosis, Differential diagnosis and management 	1, 2, 7
42			
43	Odontogenic Tumours	<ul style="list-style-type: none"> Definition and classification, Clinical features, Radiological features, Diagnosis, Differential diagnosis and management 	1, 2, 4, 9, 10, 11
44			
45	TMJ Disorders	<ul style="list-style-type: none"> Anatomy, classification, Clinical and radiographic features, TMJ radiography, Management 	1, 8, 9
46			
47			
48	Salivary gland diseases	<ul style="list-style-type: none"> Classification, Clinical features and differential diagnosis, Chair side investigations, Clinical and laboratory diagnosis, Medical management 	1, 2, 4, 5, 9, 10, 11
49			
50			
51	Diseases of Bone	<ul style="list-style-type: none"> Classification, Clinical features and differential diagnosis, Chair side investigations, Clinical and laboratory diagnosis, Medical management 	1, 2, 4, 5, 9, 10, 11
52			
53	Forensic Odontology	<ul style="list-style-type: none"> Medicolegal aspects of facial injuries. Identification of bite marks. Determination of age and sex. Identification of cadavers by 	1, 2, 9, 11



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		dental appliances, restorations and tissue remnants. Radiography in Forensic Odontology	
54	Oral manifestations of systemic diseases	<ul style="list-style-type: none"> Clinical features of common systemic disorders. Oral manifestations and Management 	1, 4, 9, 11
55			
56	Maxillary Sinus diseases	<ul style="list-style-type: none"> Classification, Clinical features and differential diagnosis, Chair side investigations, Clinical and laboratory diagnosis, Medical management 	9, 10, 11
57	Tongue Lesions	<ul style="list-style-type: none"> Anatomy, arterial, venous and lymphatic drainage Classification, Clinical features, Differential diagnosis and management 	1, 2, 4
58	Advanced Radiographic Techniques	<ul style="list-style-type: none"> Various advanced imaging technique Indications, advantages and disadvantages of various techniques Modern day applications and uses 	9, 10, 11
59			
60	Contrast radiography	<ul style="list-style-type: none"> Indications and contraindications Contrast agents used Sialography- indications, contraindications, Stages Normal and pathologic appearances of salivary gland diseases on a sialogram 	9, 10, 11

Course Contents – Clinical

Clinical schedule for 5th/6th term posting

1	Day 1	Case history discussion
2	Day 2	Case history discussion
3	Day 3	Case history discussion
4	Day 4	Pulp and periapical lesions and osteomyelitis discussion
5	Day 5	Pulp and periapical lesions and osteomyelitis discussion
6	Day 6	Antibiotics and analgesics discussion
7	Day 7	Antibiotics and analgesics discussion
8	Day 8	Demonstration of examination of lymph nodes, TMJ and salivary glands
9	Day 9	Demonstration of intraoral, extraoral and cranial nerve examination
10	Day 10	Demonstration of radiographic techniques
11	Day 11	Identification of anatomical landmarks on IOPA radiographs
12	Day 12	Principles of radiographic interpretation
13	Day 13	Patient case history recording by students and clinical work under supervision
14	Day 14	Patient case history recording by students and clinical work under supervision
15	Day 15	Assessment – CEP A
16	Day 16	Viva Voce

Clinical schedule for 7th/8th term posting

	Day 1- 24	Patient case history recording by students and clinical work under supervision
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23	Day 23	Assessment - CEP B
24	Day 24	Viva Voce

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2	3													3		
CO-3			3											3		
CO-4		3		3		2	2							3		1
CO-5			3				2							3		
CO-6		2	2	3			2			1				3		


3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		140
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	130	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	10	
Others		15
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	10	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		225

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X				X
CO-3	X	X		X	X	X
CO-4				X	X	X
CO-5			X	X	X	X
CO-6	X	X	X			X

The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination

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13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Michael Glick, Martin S Greenberg, Peter B. Lockhart, Stephen J. Challacombe, (2021), Burket's Oral Medicine. 13th Edition, BC Decker.
2. Rajendran and Sivapathasundharam, (2012), Shafer's Textbook of Oral Pathology. 7th Edition, Elsevier.
3. Ravikiran Ongole, Praveen BN, (2007), Clinical Manual for Oral Medicine and Radiology. 1st Edition, Jaypee Brothers Medical Publishers.
4. Ravikiran Ongole, Praveen B N, (2013), Textbook of Oral Medicine, Oral Diagnosis and Oral Radiology. 2nd Edition, Elsevier.
5. K D Tripathi, (2019), Textbook of Pharmacology. 8th Edition, Jaypee Brothers Medical Publishers.
6. Stanley F Malamed, (2007), Medical Emergencies. 6th Edition, St. Louis: CV Mosby.
7. Mervyn Shear, Paul Speight, (2007), Cysts of the Oral and Maxillofacial Regions. 4th Edition, Blackwell Publishing Ltd
8. Jeffrey P. Okeson, (2013), Management of Temporomandibular Disorders and Occlusion. 7th Edition, Elsevier.
9. Sanjay M. Mallya, Ernest W.N. Lam, (2019), White and Pharoah's Oral Radiology Principles and Interpretation. 8th Edition, St. Louis, Missouri, Elsevier.
10. Eric Whaites, Nicholas Drage, (2021), Essentials of Dental Radiography and Radiology. 6th Edition, Elsevier.
11. Freny R Karjodkar, (2009), Textbook of Dental and Maxillofacial Radiology. 2nd Edition, Jaypee Brothers Medical Publishers.

b. Recommended Reading

1. Malcolm A Lynch, Martin S Greenberg, (2003), Burket's Oral Medicine. 8th Edition, BC Decker.
2. Gary C Coleman, (1993), Principles of Oral Diagnosis. 1st Edition, St. Louis: CV Mosby.
3. Neville, Damm, Allen Bouquot, (2009), Essentials of Oral Pathology. 3rd Edition, Elsevier.
4. Joseph Regezi, James J Sciubba, (2008), Oral pathology: Clinicopathological correlations. 5th Edition, Elsevier.
5. Davidson, (2006), Principles and Practice of General Medicine. 20th Edition, Elsevier.
6. Richard G Topazian, Goldberg, Hupp, (2002), Oral and maxillofacial Infections. 4th Edition, Elsevier.
7. Stafne, (1975), Oral Roentgenographic Diagnosis. 4th Edition, Saunders.
8. Haring, Howerton, (2006), Dental Radiography- Principles and Techniques. 3rd Edition, Elsevier.
9. Norman K Wood, Goaz, (1997), Differential Diagnosis of Oral Lesions. 5th Edition, Elsevier.

Magazines and Journals

1. Dento-Maxillofacial Radiology
2. Journal of Oral Medicine, Oral Surgery and Oral Radiology

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3. Journal of Indian Association of Oral Medicine and Radiology
4. Journal of Dental Research
5. Journal of American Dental Association
6. British Dental Journal
7. Quintessence International
8. Dental Clinics of North America
9. Australian Dental Journal
10. Journal of Canadian Dental Association

d. Websites

1. <http://www.birpublications.org/loi/dmfr>
2. <http://www.oooejournal.net>
3. <http://www.journalonweb.com/jiaomr>
4. <http://www.jomfp.in>
5. <http://www.oraloncology.com>

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	Pediatric and Preventive Dentistry
Course Code	BDC402A
Course Type	Core Course
Department	Pediatric and Preventive Dentistry
Faculty	Dental Sciences

1. Course Summary

Pediatric and Preventive Dentistry aims to prepare the students for comprehensive, preventive and therapeutic oral health care for infants and children through adolescence including those with special health care needs. The student learn growth and development, recognition and management of commonly occurring oral diseases and to instill good oral health practices and positive attitude in a child.

The students are trained in behavior management and to perform simple treatment procedures in the child. The students also observe complex procedures being performed including oral rehabilitation under both conscious sedation and general anesthesia.

2. Course Size and Credits

Number of Credits	9
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	210
Number of Weeks in a term	20
Department Responsible	Pediatric and Preventive Dentistry
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Assess growth and development of craniofacial region as well as overall aspects of the child

CO-2. Diagnose and explain clinical manifestations of common oral diseases affecting teeth and supporting tissues of children through adolescence including those with special health care needs

CO-3. Categorize instruments and techniques for various procedures for oral rehabilitation

CO-4. Justify the best treatment option and deliver it in the most efficient manner based on evidence based dentistry

CO-5. Analyze the behaviour of children both in clinical setup and otherwise, to inculcate positive dental attitude

CO-6. Deliver effective comprehensive, preventive and therapeutic pediatric dental treatment

4. Course Contents

Course Contents - Theory		
Less on No.	Chapter	Lesson Topics
1	Introduction to Pediatric Dentistry	i Definition and scope of Pediatric Dentistry



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2	Pediatric Restorative Dentistry	i	Clinical considerations for Pediatric Restorative Dentistry and isolation techniques
3		ii	Restorative materials and clinical manipulation
4		iii	The class 1 lesion, pit and fissure sealants
5		iv	The class 2 lesion
6		v	Stainless steel crowns
7		vi	The class 3, 4 and 5 lesion and crowns for anterior region
8		vii	ART, newer methods of caries removal
9		Pediatric Endodontics	i
10	ii		Vital pulp therapy – indirect and direct pulp cap
11	iii		Vital pulp therapy – pulpotomy
12	iv		Non vital pulp therapy – pulpectomy
13	v		Management of young permanent tooth
14	Pediatric Dental Traumatology	i	Etiology and epidemiological aspects along and importance of case history in traumatic injury
15		ii	Classification of traumatic injuries, Injuries to hard tissues
16		iii	Injuries to hard tissues
17		iv	Injuries to Supporting Tissues
18		v	Injuries to Supporting Tissues
19		vi	Injuries to Bone and Soft tissues
20		vii	Traumatic injuries to primary teeth
21		viii	Sports dentistry
22	Child psychology with emphasis on behavioral and emotional development	i	Importance of psychology and different theories of psychological development, dental fear and anxiety (Types of cry)
23		ii	Psychoanalytical and psychosexual theory
24		iii	Psychosocial theory and cognitive theory
25		iv	Behaviour learning theories
26		v	Child abuse and neglect
27	Behaviour management in Pediatric Dentistry	i	Definition of behaviour and behaviour management, classification of child behavior factors affecting behaviour
28		ii	Role of dental team in behaviour management and role of parents
29		iii	Domains of behaviour management –linguistic, reward oriented and aversive domains
30		iv	Domains of behaviour management – physical and pharmacologic domain – mild sedation
31		v	Domains of behaviour management –pharmacologic domain – moderate sedation
32		vi	Domains of behaviour management –pharmacologic domain - deep sedation / general anesthesia
33	Management of handicapped and special patients	i	Definition of handicapped child and classification
34		ii	Management of children with mental disorders
35		iii	Management of children with physical handicap



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36	Oral manifestations of systemic diseases in children	i	Management of children with medical problems – CNS, CVS, RS and GIT problems
37		ii	Management of children with medical problems – Renal, Endocrinological problems
38		iii	Management of children with medical problems – Hematological problems
39		iv	Management of children with medical problems – Infectious diseases of bacterial, viral and fungal origin
40	Applied aspects of growth and development of Craniofacial complex	i	Basic concepts of growth and development and measurement of growth and development
41		ii	Various theories of growth
42		iii	Growth patterns of mandible and maxilla
43		iv	Development of occlusion – gum pads, primary dentition, mixed dentition and permanent dentition
44	Chronology of the Human dentition	i	Eruption sequence and features of primary and permanent dentition and effect of local and systemic factors in eruption
45	Occlusal guidance and Space management	i	Investigations and diagnosis for occlusal guidance and concepts of space management and space maintenance
46		ii	Space maintainers
47		iii	Space regainers
48		iv	Serial extraction
49	Oral habits and their management	i	Definition and classification of oral habits
50		ii	Etiology, clinical features and management of thumb sucking and mouth breathing
51		iii	Etiology, clinical features and management of tongue thrusting habit
52		iv	Etiology, clinical features and management of other deleterious habits
53	Genetic aspects in Pediatric Dentistry	i	Basic concepts of genetics and types of inheritance
54		ii	Autosomal dominant and recessive diseases of dental significance
55		iii	Sex-linked dominant and recessive diseases of dental significance
56	Preventive dentistry	i	Levels of prevention, PFS, PRR, topical fluorides
57		ii	Caries remineralising agents, caries vaccine
58		iii	Brushing techniques for children and oral hygiene measures for children
59	Management of developmental anomalies of teeth and soft tissues	i	Developmental anomalies of teeth
60		ii	Developmental anomalies of soft tissues

Course Content - Clinical

Clinical schedule for 5th/6th term posting

1	Day 1	Case history discussion with patient demonstration
2	Day 2	Case history discussion with patient demonstration
3	Day 3	Demonstration of patient position, instrument usage and oral prophylactic procedures
4	Day 4	Demonstration of local anesthesia and extraction procedures
5	Day 5	Demonstration of class 1 and class 2 cavity with matrix band application

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		Preclinical work of Pediatric Restorative Dentistry on typodont teeth
6	Day 6	Demonstration of pulpectomy on primary 1 st and 2 nd molar under rubber dam application Preclinical work of Pediatric Restorative Dentistry on typodont teeth
7	Day 7	Demonstration of stainless-steel crown preparation Preclinical work of Pediatric Restorative Dentistry on typodont teeth
8	Day 8	Demonstration of Fixed space maintainer Preclinical work of Pediatric Restorative Dentistry on typodont teeth
9	Day 9 – 14	Patient case history recording by students and clinical work under supervision
10	Day 15	Assessment – CEP A
11	Day 16	Viva Voce
Clinical schedule for 7th/8th term posting		
1	Day 1 -22	Patient case history recording by students and clinical work under supervision
23	Day 23	Assessment - CEP B
24	Day 24	Viva Voce

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2	3	3											2	2		
CO-3				3			1								3	
CO-4		3	2	3	2	3	1							3		
CO-5		3				2		3					2	3		
CO-6	2	2	2	3	1	1	3	3					3	3	2	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		135
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	130	
Workplace based assessment methods	00	
Hospital Setup – MSRHS	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	

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Innovative methods – DOPS, mini CEX, OSCE/OSPE	05	05
Others		
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		210

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

Focus of Cos on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X				X
CO-3	X	X		X	X	X
CO-4	X	X		X	X	X
CO-5	X	X	X	X	X	X
CO-6	X	X	X	X	X	X
The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.						

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment

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4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. J.R Pinkham (2005). Pediatric Dentistry - Infancy through adolescence. 4th Edition: Elsevier Science Ltd
3. Ralph E McDonald, David R. Avery, Jeffery A Dean (2004). Dentistry for the Child and Adolescent. 8th Edition: Mosby Inc
4. Raymond L. Braham, Merle E. Morris (1985). Textbook of Pediatric Dentistry. 2nd Edition: CBS Publishers
5. Richard J. Mathewson, Robert E. Primosch (1995). Fundamentals of Pediatric Dentistry. 3rd Edition: Quintessence Publishers
6. Angus C Cameron, Richard P Widmer (2003). Handbook of Pediatric Dentistry. 3rd Edition: Mosby Year Book Inc
7. Sidney B Finn (1973). Clinical Pedodontics. 4th Edition: AITBS publishers
8. Stephen H. Y. Wei (1988). Pediatric Dentistry: Total Patient Care. 1st Edition: Lea & Febiger, U.S

b. Recommended Reading

1. Ole Fejerskov, Edwina Kidd, Bente Nyvad (2008). Dental Caries: The Disease and Its Clinical Management. 2nd Edition: Blackwell Munksgaard
2. Gordon Nikiforuk (Volume 1 & 2) (1985). Understanding Dental Caries: Etiology And Mechanisms: Basic And Clinical Aspects. Understanding Dental Caries: Prevention. 1st Edition: Karger Publications
3. Martin E. J. Curzon, J. F. Roberts (1996). Kennedy's Pediatric Operative Dentistry. 4th Edition: Wright Publishers
4. Theodore Roberson, Harold Heymann and Edward Swift (2006). Sturdevant's Art and Science of Operative Dentistry. 4th Edition: Mosby Year Book Inc
5. Stephen Cohen (2006). Pathways of pulp. 9th Edition: Elsevier Science Ltd
6. John I Ingle, Bakland (2009). Endodontics. 6th Edition: Elsevier Science Ltd
7. William R. Proffit, Fields Henry W. Jr., David M. Sarver (2006). Contemporary Orthodontics. 4th Edition: Elsevier Science Ltd



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8. Stephen H Wei, Minoru Nakata (1988). Occlusal Guidance in Pediatric Dentistry. 1st Edition: Tokyo Ishiyaku Euro America, Inc.
9. N.O Harris, F.G Godoy (2008). Primary Preventive Dentistry. 7th Edition: Prentice Hall Publishers
10. Stephen H Wei (1988). Clinical Use of Fluorides. 1st Edition: HB Publishers
11. Leonard B Kaban (2004). Pediatric Oral and Maxillofacial Surgery. 1st Edition: W B Saunders Books
12. Sohrab N Tomasi (2000). Manual of Pediatric Drug Therapy. 2nd Edition: Springhouse Publishing
13. Crispian Scully, Roderick A Cawson (2005). Medical Problems in Dentistry. 5th Edition: Elsevier Science Ltd

c. Magazines and Journals

1. Dento-Maxillofacial Radiology
2. Journal of Oral Medicine, Oral Surgery and Oral Radiology
3. Journal of Indian Association of Oral Medicine and Radiology
4. Journal of Dental Research
5. Journal of American Dental Association
6. British Dental Journal
7. Quintessential International Journal
8. Dental Clinics of North America
9. Australian Dental Journal
10. Journal of Canadian Dental Association

d. Websites

6. <http://www.birpublications.org/loi/dmfr>
7. <http://www.oooojournal.net>
8. <http://www.journalonweb.com/jiaomr/>
9. <http://www.jomfp.in>
10. <http://www.oraloncology.com>

e. Other Electronic Resources

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	Public Health Dentistry
Course Code	BDC403A
Course Type	Core Course
Department	Public Health Dentistry
Faculty	Dental Sciences

1. Course Summary

The aim of studying Public Health Dentistry is to enable student to promote oral health at the individual and community level.

The student learns to measure oral diseases applying appropriate epidemiological study designs. The student learns to use statistical software and to plan strategies to prevent oral diseases/ conditions. The students learn how to establish a private dental practice to provide comprehensive oral health care

2. Course Size and Credits

Number of Credits	9
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	210
Number of Weeks in a term	20
Department Responsible	Public Health Dentistry
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Differentiate between a clinician and a public health dentist
- CO-2. Describe health care delivery systems and propose a plan to establish an independent private dental practice
- CO-3. Perform preventive procedures and impart health education at an individual and community level
- CO-4. Analyse the data obtained from individual patient and community to arrive at treatment and programme.
- CO-5. Plan and provide comprehensive oral health care to individual patient
- CO-6. Demonstrate leadership qualities while organizing community programme

4. Course Contents

Course Contents – Theory		
Lesson no	Chapter	Lesson Topics
1.	Concept of Health and Disease	i. History of Medicine
2.		ii. Concepts of Health
3.		iii. Concept of Disease
4.		iv. Determinants of Health
5.		v. Taboos in Dentistry
6.	Environment and Health	i. Water Purification

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7.		ii.	Solid and Hospital Waste Management
8.	Health care delivery in India	i.	Health Care Delivery system
9.		ii.	Primary Health Care
10.		iii.	National Health Programmes
11.		i.	Behavioral Sciences and Health
12.	Behavioral Sciences and Health Biostatistics	ii.	Introduction to Biostatistics-Uses, Types of Data
13.		iii.	Methods of Data presentation
14.		iv.	Measures of Central Tendency and Dispersion
15.		v.	Normal Distribution
16.		vi.	Testing of Hypothesis
17.		vii.	Sampling Methods
18.		Survey	i.
19.	ii.		Basic Oral Health Survey
20.	iii.		National and International health agencies
21.	iv.		Dental council of India and Dentist's Act
22.	v.		Nutrition and Oral Health
23.	vi.		Ethics and jurisprudence
24.	Occupational hazard		vii.
25.	National oral health policy	i	National oral health policy
26.	Minimal intervention Dentistry(MID)	i.	Minimal intervention Dentistry(MID)
27.		ii.	Atraumatic Restorative Treatment
28.		iii.	Pit and fissure sealants
29.		iv.	Oral hygiene aids
30.		v.	Private practice management
31.	Introduction to Dental Public Health Epidemiology	i	Introduction to Dental Public Health
32.		i.	General Epidemiology
33.		ii.	Descriptive Epidemiology-Part 1
34.		iii.	Descriptive Epidemiology-Part 2
35.		iv.	Case- Control study
36.		v.	Cohort study
37.		vi.	Experimental Study and Uses of Epidemiology
38.	Epidemiology of Oral diseases	i.	Epidemiology of Dental caries
39.		ii.	Epidemiology of Periodontal disease
40.		iii.	Epidemiology Of Oral Cancer
41.		iv.	Prevention of Oral cancer
42.		v.	Prevention of Malocclusion
43.		vi.	Epidemiology of Dental Fluorosis
44.	Fluorides in Dentistry	i.	History of fluorides
45.		ii.	Systemic fluorides
46.		iii.	Topical Fluorides
47.		iv.	Fluoride Toxicity and Defluoridation
48.	Financing in Dentistry	i	Financing in Dentistry
49.	Dental manpower planning	i	Dental Manpower



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50.	Health planning and evaluation	i	Health planning and evaluation
51.	Dental Indices	i.	Dental Indices –Part 1
52.		ii.	Dental Indices –Part 2
53.	School Oral Health Programme	i	School Oral Health Programme
54.	Health communication and health education	i.	Health communication
55.		ii.	Health education
56.		iii.	Oral health promotion
57.		iv.	Oral health care for the target population
58.	Risk assessment	i.	Caries activity test
59.		ii.	Caries risk assessment
60.		iii.	Sugar substitutes

Course Contents – Clinicals

Term III : Clinical		
1.	Infection control and prevention in clinical and field setting	Demonstration of sterilization and disinfection procedures as applicable to situations
2.	Case assessment	Case history
3.		Physical examination
4.		Clinical examination
5.		Orientation to oral disease measurement
6.		Oral Disease measurement
7.		Oral hygiene
8.		Dental caries
9.		Periodontal disease
10.		Fluorosis
11.		Risk assessment
12.		Arriving at diagnosis
13.		Planning for investigations
14.		Comprehensive treatment plan
15.		Assessment – CEP A
16.	Viva Voce	
Term IV: Clinical		
1	Infection control and prevention in clinical and field setting	Reinforcing
2	Case assessment	Revision of Case history
4		Measurements of oral diseases
5		Comprehensive treatment plan
6	Community oral health status assessment	Estimation of oral disease and planning
7		Community Health Education
8		Provision of dental care services with primary focus on preventive care
9	Comprehensive oral health care	Oral Prophylaxis
10		Restoration
11		Extractions
12		Preventive

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

13		
14		
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23	Assessment - CEP B	
24	Viva Voce	

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1						3							3			
CO-2					2									2		
CO-3							3								1	
CO-4				2												
CO-5						1									2	
CO-6		2														1

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		135
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	130	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	05	
Others		05
1. Case Study Presentation	00	
2. Guest Lecture	00	



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3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		210

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), Cos are assessed as illustrated in the following Table.

Focus of Cos on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X		X	X	X
CO-3				X	X	X
CO-4	X	X		X	X	X
CO-5	X	X				X
CO-6			X			X

The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the semester. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination



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11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

11. Class Notes
12. Park and Park. (2011): Preventive and Social Medicine. 21st Edition, M/s Banarsidas Bhanot Publishers, Jabalpur.
13. Soben Peter. (2011): Essentials of Preventive and Community Dentistry. 5th Edition, Arya (Medi) Publishing House, New Delhi.
14. Norman O Harris. (2004): Primary Preventive Dentistry. 6TH Edition, Pearson Education, Inc, New Jersey.
15. SS Hiremath.(2007) Text Book of Preventive and Community Dentistry.1st Edition, Elsevier, A division of Reed Elsevier India Pvt Ltd, New Delhi.
16. WHO (1997): Oral Health Surveys-Basic Methods. 4th Edition, WHO, Geneva.

b. Recommended Reading

1. David F. Stiffler, Wesley O Young, Brain A. Burt. (1983): Dentistry Dental Practice and the Community. 5th Edition, W.B. Saunders Company USA.
2. James Morse Dunning. (1986): Principles of Dental Public Health. 4th Edition, Harvard University Press USA.
3. Anthony Jong. (1981): Dental Public Health and Community Dentistry. Mosby Company USA.
4. J J Murray. (1997): Preventive Dentistry. Oxford University Press.
5. S. Das. (2005): Concise Text Book of Surgery. 3rd Edition, Calcutta.
6. Burkett. (2008): Burkett's Oral Medicine. 11th Edition, CBS for Asian Continent.

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

17. HELINET
18. EBSCO HOST



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	Orthodontics & Dentofacial Orthopedics
Course Code	BDC404A
Course Type	Core Course
Department	Orthodontics & Dentofacial Orthopedics
Faculty	Dental Sciences

1. Course Summary

The aim of learning Orthodontics & Dentofacial Orthopedics is to learn to optimize the functions of orofacial apparatus, maintain structural balance between the dentoalveolar system, skeletal and soft tissues and, achieving esthetic harmony.

The students will learn growth and development, etiology of malocclusions, diagnostic measures, treatment planning and fabrication of appliances for correction of simple orthodontic malocclusion. The student are exposed to ICT enabled advanced diagnostic aids.

2. Course Size and Credits:

Number of Credits	9
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	210
Number of Weeks in a term	20
Department Responsible	Orthodontics & Dentofacial Orthopedics
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe the growth and development of craniofacial structures
- CO-2. Differentiate between normal occlusion and deviations and its etiology
- CO-3. Prepare orthodontic study models and perform model analysis
- CO-4. Interpret the clinical, model, radiographic and cephalometric analysis to diagnose skeletal and dental malocclusions. Plan an appropriate preventive, interceptive and corrective treatment to the patient valuing their concerns
- CO-5. Construct an orthodontic treatment plan for a patient having cleft lip and palate from birth to maturity
- CO-6. Fabricate removable orthodontic appliances for simple orthodontic corrections

4. Course Contents

Course Contents - Theory				
Lesson No.	Chapter		Subtopics	Recommended/ Reference book nos.
TERM 1				
1	Introduction to Orthodontics	i	Introduction to Orthodontics, aims & objectives, scope of Orthodontics	1 to 4, 6
2	Stainless steel and other materials used in Orthodontics	i	Stainless steel and other materials used in Orthodontics	1 to 4, 6

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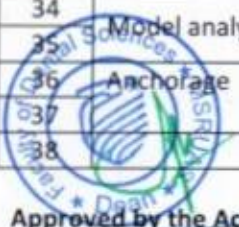
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3	Soldering and welding	i	Soldering and welding	1 to 4, 6
4	Growth and Development	i	Definition, classification, growth concepts	1 to 4, 6
5		ii	Growth theories	1 to 4, 6
6		iii	Growth of Basicranium	1 to 4, 6
7		iv	Growth and development of maxilla	1 to 4, 6
8		v	Growth and development of mandible	1 to 4, 6
9		vi	Clinical significance of growth and development	1 to 4, 6
10	Growth and Development of dentition and occlusion	i	Growth and development of dentition and occlusion	1 to 4, 6
11		ii	Trajectories of forces	1 to 4, 6
12		iii	Functional development	1 to 4, 6
13	Physiology of stomatognathic system	i	Physiology of stomatognathic system	1 to 4,6
14	Occlusion and Malocclusion	i	Occlusion basic concepts	1 to 4,6
15		ii	Classification of malocclusion	1 to 4,6
TERM 2				
16	Etiology of malocclusion	i	Etiology of malocclusion – local factors	1 to 4,6
17		ii	Etiology of malocclusion – general factors	1 to 4,6
18	Habits	i	Classification of habits and clinical features	1 to 4,6
19		ii	Management of habits	1 to 4,6
20	Biomechanics	i	Biology of tooth movement – Histology	1 to 4,6
21		ii	Biology of tooth movement – theories of tooth movement	1 to 4,6
22		iii	Biomechanics of tooth movement	1 to 4,6
23	Orthodontic diagnosis and diagnostic aids	i	Orthodontic diagnosis	1 to 4,6
24		ii	Orthodontic diagnosis	1 to 4,6
25		iii	Diagnostic aids	1 to 4,6
26	Preventive and Interceptive Orthodontics	i	Preventive Orthodontics	1 to 6
27		ii	Interceptive Orthodontics	1 to 4, 6
28	Cephalometrics	i	Basics of cephalometry	1 to 4, 6
29		ii	Analysis	1 to 4, 6
30	Skeletal maturity indicators	i	Skeletal maturity indicators	1 to 4, 6
31	Serial extraction, Space maintainers and space regainers	i	Serial extraction	1 to 4, 6
32		ii	Space maintainers and space regainers	1 to 4, 6
33	Genetics in Orthodontics	i	Genetics in Orthodontics	1 to 4, 6
34	Model analysis	i	Permanent dentition analysis	1 to 4, 6
35		ii	Mixed dentition analysis	1 to 4, 6
36	Anchorage	i	Definition, classification	1 to 4, 6
37		ii	Anchorage	1 to 4, 6
38		i	Methods of gaining space	1 to 4, 6

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39	Methods of gaining space and extractions in Orthodontics	li	Extractions in Orthodontics	1 to 4, 6
40		iii	Arch expansion	1 to 4, 6
41	Treatment planning	i	Assessment of etiological factors	1 to 4, 6
42		ii	Treatment planning	1 to 4, 6
43	Introduction to fixed appliances	i	Introduction to fixed appliances	1 to 4, 6
44	Lab procedures used in Orthodontics	i	Lab procedures used in Orthodontics	1 to 4, 6
45	Computers in Orthodontics	i	Computers in Orthodontics	1 to 4, 6
46	Functional and orthopedic appliances	i	Removable appliances	1 to 6
47		ii	Functional appliances	1 to 6
48		iii	Orthopedic appliances	1 to 6
49	Management of class I malocclusion	i	Management of class I malocclusion	1 to 6
50	Management of class II malocclusion	i	Management of class II malocclusion	1 to 6
51	Management of class III malocclusion	i	Management of class III malocclusion	1 to 6
52	Management of deep bite	i	Management of deep bite	1 to 6
53	Management of open bite	i	Management of open bite	1 to 6
54	Management of cross bite	i	Management of cross bite	1 to 6
55	Retention and relapse	i	Retention	1 to 6
56		ii	Relapse	1 to 6
57	Cleft lip and palate	i	Cleft lip and palate	1 to 4, 6
58	Surgical Orthodontics	i	Minor surgical procedures	1 to 4, 6
59		ii	Major surgical procedures	1 to 4, 6
60	Adult Orthodontics	i	Adult Orthodontics	1 to 4, 6

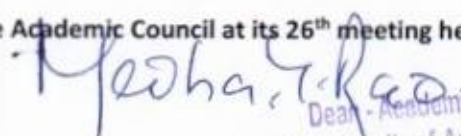
Course Contents – Clinical

Clinical schedule for 5th/6th term posting

1	Day 1	Straightening of wire
2	Day 2	Making of equilateral triangle 3 cms of each side
3	Day 3	Making of equilateral triangle 5 cms of each side
4	Day 4	Making of circle 3 cms in diameter
5	Day 5	Making of circle 4 cms in diameter
6	Day 6	Making of alternate U's and V's
7	Day 7	Making of C – clasp on 16
8	Day 8	Making of C – clasp on 26
9	Day 9	Making of U - clasp on 16
10	Day 10	Making of U - clasp on 26

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11	Day 11	Making of Triangular clasps between 14 and 15
12	Day 12	Making of Triangular clasps between 24 and 25
13	Day 13	Making of Adams clasp on 16 and 26
14	Day 14	Making of Adams clasp on 36 and 46
15	Day 15	Assessment – CEP A
16	Day 16	Viva Voce
Clinical schedule for 7 th /8 th term posting		
1	Day 1	Making of Finger spring on 11 and 21
2	Day 2	Making of Z – spring on 11 and 21
3	Day 3	Making of Coffin Spring
4	Day 4	Making of U- Loop canine retractor on 13 and 23
5	Day 5	Making of Reverse loop canine retractor on 13 and 23
6	Day 6	Making of Alberts canine retractor on 13 and 23
7	Day 7	Making of Palatal canine retractor on 13 and 23
8	Day 8	Making of Short labial bow
9	Day 9	Making of Long labial bow
10	Day 10	Making of Reverse loop labial bow
11	Day 11	Making of Hawleys appliance
12	Day 12	Making of appliance with canine retractors
13	Day 13	Making of Finger spring with guard
14	Day 14	Making of Begg retainer
15	Day 15	Impression and making of study models
16	Day 16	Pont's Analysis
17	Day 17	Careys Analysis
18	Day 18	Arch perimeter Analysis
19	Day 19	Ashley Howe's Analysis
20	Day 20	Bolton's Analysis
21	Day 21	Cephalometric tracings – Downs and Steiner's Analysis
22	Day 22	Case history taking
23	Day 23	Assessment - CEP B
24	Day 24	Viva Voce

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2	3	2	1										3	3		
CO-3			3	3										3	3	
CO-4		3	1	3	1	2	1						2	3		
CO-5	1	2	2	2	3	2	1		1					2		3
CO-6	3			3		1					1			3		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		135
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	130	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	05	
Others		
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		210

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

Focus of Cos on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				
CO-2	X	X				X
CO-3	X	X		X	X	X
CO-4	X	X	X	X	X	X
CO-5	X	X	X			X
CO-6				X	X	X

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The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Graber TM (2000) Orthodontics: Current Principles and Technique. 3rd Edition, Mosby publishers.
3. Proffit William R (2000) Contemporary Orthodontics. 2nd Edition, Mosby publishers.
4. White T C, Gardiner J H, Leikton B C (1976) Orthodontics for dental student. 3rd Edition, MacMillan India
5. Adams C P, John S Kerr W (1990) Removable Orthodontic Appliances. 6th Edition, Varghese Pub House
6. Houston WJ (1992). A text book of Orthodontics. 2nd Edition, Wright Pub.

b. Recommended Reading

1. Moyers Robert E (1988) Hand book of Orthodontics. 4th Edition, Yearbook of medical publication
2. Graber, Vanarsdall and Vig: Orthodontics Current Principles and Techniques. 5th Edition: Elsevier Publishers.

c. Magazines and Journals

d. Websites

www.pubmed.com



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e. Other Electronic Resources

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Course Specifications

Course Title	Oral & Maxillofacial Surgery
Course Code	BDC405A
Course Type	Core Course
Department	Oral & Maxillofacial Surgery
Faculty	Dental Sciences

1. Course Summary

The aim of studying Oral and Maxillofacial Surgery is to diagnose and manage pathologies, disorders, deformities and injuries occurring in the oral and maxillofacial region; to formulate adequate solution/opinion and referral for common oral problems. The students are trained to achieve competency in extraction of teeth under local anesthesia with prevention and management of related complications. They are exposed to minor and major surgical procedures and inpatient management of maxillofacial problems.

2. Course Size and Credits

Number of Credits	10
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	225
Number of Weeks in a term	20
Department Responsible	Oral & Maxillofacial Surgery
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe the surgical anatomy of oral and maxillofacial region
- CO-2. Diagnose diseases, deformities and injuries of the oral and maxillofacial region
- CO-3. Propose medical and surgical treatment options based on clinical history, examination and investigations with appropriate use of pharmacological agents
- CO-4. Perform tooth extraction with appropriate local anesthetic technique and instruments following basic surgical principles
- CO-5. Modify treatment plan for medically compromised patients, recognise medical emergencies and refer appropriately for further management
- CO-6. Display supportive role in minor and major surgical procedures with empathy and compassion

4. Course Contents

Course Contents - Theory		
Lesson No	Chapter	Details of the Topic
1	Introduction (1 hour)	Definition, aims and objectives of Oral Surgery
2	Diagnosis in Oral Surgery	History taking
3		Clinical examination and investigations
4	Infection control	Principles of infection control and asepsis
5		Cross infection, HIV/AIDS and hepatitis
6	Principles of Oral Surgery	Painless surgery - LA, IV sedations and GA
7		Access
8		Control of hemorrhage
9		Drainage and debridement, closure of wounds, post-operative care

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

10	Exodontia	Introduction, indications
11		Methods of extraction
12		Use of instruments and complications
13		
14	Local anesthesia (LA)	Anatomy of maxilla and mandible
15		
16		
17		Techniques of local anesthesia
18	Complications of LA	
19	Medical emergencies in the dental practices	Cardio vascular, respiratory, endocrine, anaphylactic reaction, epilepsy.
20	Emergency drugs and intramuscular I.V injections	Applied anatomy, ideal location for giving these injections, techniques.
21	Oral Implantology	
22	Ethics	
23	Management of medically compromised patients	
24		
25	Impacted teeth	Definition, impacted mandibular third molar, surgical techniques for tooth removal
26		
27		Impacted maxillary third molar
28		Impacted canines
29	Endodontic Surgery	Introduction, classification, apicectomy, replantation
30	Diseases of Maxillary Sinus	Surgical anatomy
31		Acute and chronic sinusitis
32		Surgical approach
33		Oro antral fistula
34	Benign cystic lesions of jaws	Definition, classification and pathogenesis
35		Diagnosis, clinical features, radiological features, aspiration biopsy, use of contrast media and histopathology
36		Management-types of surgical procedures, and complications
37	Salivary gland diseases	Diagnosis of salivary gland diseases
38		Sialography, contrast media, procedure
39		Infections of the salivary glands
40		Clinical features, management, fistulas
41		Common tumors of salivary glands like pleomorphic adenoma
42	Preprosthetic surgery	Introduction and definition
43		Corrective procedures
44		Ridge extension procedures
45		Ridge augmentation procedures
46	TMJ disorders	Surgical anatomy
47		Dislocation
48		Ankylosis
49		Myofunctional Pain Dysfunction Syndrome
50		Internal derangement
51		Arthritis and other disorders
52	Infections of the oral cavity	Introduction, factors, course of odontogenic infections

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

53		Spread of infection, classification, clinical features, management
54		
55		Dentoalveolar abscess, Ludwig's angina
56		osteomyelitis,
57	Tumors of the oral cavity	General considerations
58		Non odontogenic benign tumors – lipoma, fibroma, papilloma, ossifying fibroma, myoma etc
59		Ameloblastoma
60		Carcinoma of oral cavity
61		Biopsy – types
62		TNM classification
63		Outline of management of squamous cell carcinoma, radiotherapy, chemotherapy.
64		Prevention and early detection of oral cancer.
65	Fractures of the jaws	General consideration, types of the fractures, etiology, clinical features, and general principles.
66		Mandibular fractures – applied anatomy, classification
67		Diagnosis – clinical and radiological features
68		Management – reduction and fixation
69		Outline of rigid and semi-rigid internal fixation.
70		Fractures of condyle – etiology, classification, clinical features and general principles of management
71		Fractures of middle third of the face
72		Definition of mid face, applied surgical anatomy, classification, clinical features and outline of management
73		Dento-alveolar fractures - methods of management
74		Fractures of Zygomatic complex
75		Classification, C/F, indications for treatment, various methods of reduction and fixation.
76		Complications – delayed union, non-union and malunion.
77	Jaw deformities	Basic forms, prognathism, retrognathism and open bite.
78		Reasons for correction.
79		Outline of surgical methods carried out on maxilla and mandible.
80	Neurological disorders	Trigeminal Neuralgia – definition, etiology, clinical features, and methods of management including surgery.
81		Facial paralysis – etiology, clinical features
82		Nerve injuries – classification, neuroorrhaphy etc.
83	Cleft lip and cleft palate	Etiology of the clefts, incidence, classifications, and role of dental surgeon in the management of patients with clefts; outline of the closure procedures.

Course Contents – Clinical

Clinical schedule for 5th/6th term posting

1	Day 1	Introduction and tour into the clinic
2	Day 2	Discussion and demonstration of sterilization methods and infection control
3	Day 3	Discussion on pain, pain pathway and pain control
4	Day 4	Discussion and demonstration of Trigeminal nerve and its courses on models
5	Day 5	Discussion and demonstration of Trigeminal nerve and its courses on models
6	Day 6	Discussion on antibiotics used in dentistry

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7	Day 7	Discussion on analgesics used in dentistry
8	Day 8	Demonstration of instruments used for extraction of teeth
9	Day 9	Discussion on local anaesthesia
10	Day 10	Discussion on various maxillary regional block techniques
11	Day 11	Discussion on various mandibular regional block techniques
12	Day 12	Observation of extraction of teeth
13	Day 13	Performing simple extractions
14	Day 14	Performing simple extractions
15	Day 15	Assessment – CEP A
16	Day 16	Viva Voce
Clinical schedule for 7th/8th term posting		
1	Day 1 - 7	Revision of Topics discussed in 5 th / 6 th term
2	Day 8	Discussion on case history taking and prescription writing
3	Day 9	Discussion on medical emergencies and performing extraction
4	Day 10	Discussion on diseases of the Cardiovascular system and performing extraction
5	Day 11	Discussion on diseases of the Endocrine system and performing extractions
6	Day 12	Discussion on diseases of the Central Nervous System and performing extractions
7	Day 13	Discussion on diseases of the Respiratory System and performing extractions
8	Day 14	Discussion on diseases of the Renal and Hepatic System and performing extractions
9	Day 15	Discussion on HIV and HBsAg, precautions and management and performing extractions
10	Day 16	Discussion on open method of extractions and performing extractions
11	Day 17	Discussion and demonstration of suturing techniques on models and performing extractions
12	Day 18	Performing suturing on models and performing extractions
13	Day 19	Discussion on complications of extractions and its management
14	Day 20-22	Performing extractions
15	Day 23	Assessment - CEP B
16	Day 24	Viva Voce

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2		3												3		
CO-3		3	3	2									2	3	1	
CO-4		3	3	2										3	2	
CO-5		3	1	2	1		1							3	1	
CO-6					1	1	1	1								1

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		140
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	130	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	10	
Others		15
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	10	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		225

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

Focus of Cos on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X				X
CO-3	X	X		X	X	X
CO-4	X	X		X	X	X
CO-5	X	X		X	X	X
CO-6	X	X	X			X

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The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Monheim, S. (1990) Local anesthesia and pain control in dental practice. 7th Edition, CBS.
3. Malamed. (2008) Text book of Local Anesthesia. 5th Edition, Mosby.
4. Malamed, S F. (2007) Handbook of Medical Emergencies in the Dental Office. 6th Edition, Mosby.
5. Scully, C and Cawson, R. (2005) Medical Problems in Dentistry. 5th Edition, Elsevier.
6. Kruger, G O. (1989) Textbook of Oral and Maxillofacial Surgery. 6th Edition, Mosby.
7. Banks, P. (1991) Reprinted in 1993) Kiley's Fracture of Mandible. 4th Edition, Wright.
8. Banks, P. (1987, Reprinted in 1992) Kiley's Fracture of middle third of the facial skeleton. 5th Edition, Wright.
9. Laskin, D M. (1992) Oral and Maxillofacial Surgery. Vol 1 & Vol 2- 1st Edition, Mosby.
10. Peterson, I J et al (2006) Contemporary Oral and Maxillofacial Surgery, 4th Edition, Elsevier
11. Howe, G L. (1970, Reprinted in 1999) Extraction of teeth. 2nd Edition, Varghese Publishing



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b. Recommended Reading

1. Mallik, NA. (2012) Textbook of Oral and Maxillofacial Surgery. 3rd Edition, Jaypee Brothers.
2. Alling CC, Helfrick JF, Alling RD (1993) Impacted teeth. 1st Edition, WB Saunders.
3. Miloro M, Ghali GE, Larsen PE, Waite PD. (Revised 2004) Peterson's Principles of Oral and Maxillofacial Surgery. Vol 1 & 2, 2nd Edition, B.C. Decker.
4. Peterson LJ, Ellis E, Hupp JR, Tucker MR, (Revised 2006) Peterson's Contemporary Oral and Maxillofacial Surgery. 4th Edition, Mosby
5. McGovanda, (1993). The Maxillary Sinus and its Dental Implication. 1st Edition, Wright.
6. Seward GR, Killey HC, Kay LW (1987, Reprinted in 1992) Killey and Kay's outline of Oral Surgery Part I. 2nd Edition, Varghese Publishing House
7. Howe, G L. (1985, Reprinted in 1994), Minor Oral Surgery. 3rd Edition, Wright.
8. Topazian, R G & Goldberg M H (2002) Oral and Maxillofacial infections. 4th Edition, Saunders Company.
9. Francis, C M (1993) Medical Ethics. 1st Edition, Jaypee Brothers.
10. Dimitroulis, G. Dolwick, MF. Van Sickels, JE (1994) Orthognathic Surgery: A Synopsis of Basic Principles and Surgical Techniques. 1st Edition, Wright.
11. Rowe, NL and Williams IL, Maxillofacial Injuries (Vols. 1-2), 2nd Edition, Churchill Livingstone.
12. Pindborg, J. (1980) Oral Cancer And Precancer. Butterworth-Heinemann Ltd.
13. Starshak, T.J. (1971) Stein, HA. Slatt, B.J. Stein, RM. Preprosthetic Oral Surgery. 1st Edition, Mosby.
14. Quinn, PD. (1998) Color atlas of Temporomandibular Joint Surgery. Mosby.
15. Varghese Mani, (1995), Orthognathic Surgery: Esthetic Surgery of the Face. 1st Edition, Jaypee Brothers

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	Periodontology
Course Code	BDC406A
Course Type	Core Course
Department	Periodontology
Faculty	Dental Sciences

1. Course Summary

The aim of studying Periodontology is to prepare the student to prevent, diagnose and treat diseases of the supporting and investing tissues of teeth or their substitutes and their maintenance.

The student learns structure, development and function of the periodontium. Students learn etiology and pathogenesis of common periodontal diseases. The students learn diagnosis, non-surgical and surgical management of periodontal diseases. The students observe complex surgical procedures performed under local anesthesia like flap surgery, regenerative procedures and rehabilitation with dental implants.

2. Course Size and Credits:

Number of Credits	10
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	225
Number of Weeks in a term	20
Department Responsible	Periodontology
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe etiology and pathogenesis of common periodontal diseases
- CO-2. Correlate biochemical, microbiologic, immunologic and genetic aspects of periodontal pathology and its interrelationship with various systemic conditions
- CO-3. Analyse clinical history, examine compassionately, advise appropriate diagnostic tests and motivate patient for maintenance regimen
- CO-4. Differentially diagnose, correlate systemically and propose a treatment plan
- CO-5. Demonstrate adequate skills in using periodontal instruments and equipment
- CO-6. Evaluate newer developments in material science and methods to justify its clinical applications in periodontal therapy.

4. Course Contents

Course Contents - Theory			
Lesson No.	Chapter		Lesson Topics
1	Introduction	i	Definition, basic historical background and scope of periodontics
2	Biology of Periodontal Microstructural anatomy and biology of tissues	i	Gingiva - Microstructural Anatomy and Biology, clinical features and correlation
3		ii	Periodontal ligament
4		iii	Cementum and alveolar bone
5	Periodontal Instruments	i	Sonic, Ultra sonic instruments, gingival irrigation
6	Defense mechanism of gingiva	i	Gingival crevicular fluid and saliva
7	Classification of periodontal diseases	i	Gingival diseases and periodontal diseases

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8	Gingivitis	i	Gingival inflammation and clinical features of gingivitis
9		ii	Plaque associated, ANUG, steroid etc.
10	Periodontitis	i	Chronic periodontitis
11		ii	Aggressive periodontitis
12	Gingival Diseases	i	Desquamative gingivitis
13		ii	Allergic gingivitis, gingival diseases in childhood
14	Gingival Enlargement	i	Types of gingival enlargement, diagnosis and treatment
15	Extension of inflammation of gingiva	i	Mechanism of spread of inflammation from gingiva, factors modifying the spread
16	Epidemiology of periodontal diseases	i	Definition, classification, Silness & Loe index, Loe & Silness gingival index, CPITN index, Russell's index, Papillary index etc.
17	Periodontal Pocket	i	Definition, classification, signs and symptoms, pathogenesis and histopathology
18	Etiology	i	Dental plaque, WHO definition, types, composition, formation stages, bacterial colonisation, growth and maturation of plaque, role of dental plaque in health and disease, periodontal microorganisms in detail
19		ii	Specific and non-specific hypothesis, plaque retentive factors, food impaction: definition, types, etiology Hirschfeld's classification, signs, symptoms, sequelae and treatment.
20	Calculus	i	Role of dental calculus in disease. Definition, types, composition, attachment, theories of calculus formation
21	Trauma From Occlusion	i	Definition, types, histopathological changes, role of TFO in periodontal disease
22	Habits	i	Bruxism, parafunctional habits, tongue thrusting, mouth breathing, lip biting, occupational habits
23	Iatrogenic factors	i	Conservative Dentistry – restorations, contact point, marginal ridge, surface roughness, overhanging restorations etc.
24		ii	Prosthetics – pontics, surface contour, margins of the tooth preparation, orthodontic considerations.
25	Systemic diseases	i	Diabetes Mellitus
26		ii	Coronary heart disease
27		iii	Respiratory diseases
28		iv	Stress, nutrition
29		v	Bleeding disorders
30		vi	Effect of hormones on periodontal health and disease
31	AIDS	i	AIDS and periodontium
32	Risk factors	i	Definition, risk factor, smoking and periodontal disease
33	Genetic factors associated with periodontal disease	i	Genetic study designs, influence of genetic factors in aggressive and chronic periodontal diseases
34	Host response	i	Basic concepts of immunity and Complement system
35		ii	Microbiologic aspects of microbial-host interaction
36		iii	Immunologic aspects of microbial-host interaction
37		iv	Molecular signaling of pathogen mediated bone destruction in periodontal disease



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

38	Furcation Involvement	i	Furcation involvement, classification, prognosis and management
39	Bone loss patterns	i	Patterns of bone loss and bone loss in periodontal disease
40	Diagnosis	i	Case History: Part I
41		ii	Case History: Part II
42		iii	Halitosis
43	Radiographic aids in the diagnosis of periodontal disease	i	Normal anatomic features seen on IOPA, OPG etc., radiographic appearance of periodontal disease, bone loss and pattern of bone destruction, distortions produced by alteration in radiographic technique
44	Advanced diagnostic techniques	i	Advances in clinical diagnosis, radiographic assessment, microscopic analysis and advances in characterising the host response
45	Prognosis	i	Definition, types of prognosis, factors in determination of prognosis, relationship between diagnosis and prognosis, reevaluation of prognosis after phase I therapy
46	Periodontal therapy	i	Treatment plan, rationale and general principles of periodontal therapy, periodontal regeneration, repair, new attachment, reattachment
47	Plaque control	i	Mechanical plaque control
48		ii	Chemical plaque control
49	Chemotherapeutic agents	i	Various chemotherapeutic agents used in periodontal therapy
50	Instruments	i	Types of instruments
51		ii	Principles of instrumentation
52	Periodontal therapy in female patient	i	Puberty, Menstrual cycle, Periodontal manifestations of pregnancy, oral contraceptives and menopause
53	Periodontal treatment of older adults	i	Aging periodontium, demographics, dental and medical assessments, periodontal diseases in older patients, treatment planning, prevention of periodontal disease and maintenance
54	Host Modulation	i	Host modulation and host modulating agents
55	Local Drug delivery	i	Local drug delivery
56	Hypersensitivity	i	Definition, etiology, theories of hypersensitivity and management
57	Flap Surgery	i	Periodontal flaps
58		ii	Flap techniques for pocket therapy
59	Resective osseous surgery	i	Resective osseous surgery
60	Regenerative osseous surgery	i	Guided tissue regeneration
61		ii	Guided bone regeneration
62	Mucogingival surgery	i	Terminology, problems associated with attached gingiva, shallow vestibule and aberrant frenum, etiology of recession, factors that affect surgical outcome
63		ii	Techniques to increase attached gingiva, deepen the vestibule and remove aberrant frenum. Criteria for selection of techniques
64	Periodontal Interrelationship	i	Periodontal-Restorative interrelationships
65		ii	Periodontic-Endodontic continuum



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66		iii	Periodontal –Prosthetic interrelationships
67		iv	Perio – Ortho interrelationships
68	Splints	i	Periodontal splints, periodontal dressings
69	Lasers	i	Lasers in periodontal therapy
70	Implants	i	Biological aspects of oral implants, diagnostic imaging for the implant patient
71		ii	Standard and advanced implant surgical procedures
72		iii	Biomechanics, treatment planning and prosthetic considerations, implant related complications and failures
73	Periodontal maintenance	i	Supportive periodontal therapy, results of periodontal treatment
74	Evidence Based Decision Making (EBDM)	i	Introduction to EBDM
75		ii	Assessing evidence and implementation of EBDM in clinical practice

Course Contents - Clinical

Clinical work for 5th/6th term posting

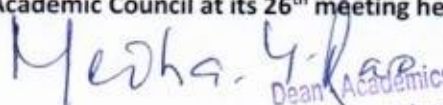
1	Discussion on gingiva
2	Discussion on periodontal ligament
3	Discussion on cementum
4	Discussion on alveolar bone
5	Discussion on clinical features and stages of gingivitis
6	Discussion on instruments, principles of instrumentation
7	Discussion on principles of instrumentation
8	Discussion on case history: Part I
9	Discussion on case history: Part II
10	Case history discussion with patient demonstration
11	Demonstration of patient position, instrument usage and oral prophylactic procedure
12	Review and chair side quiz, patient case history recording by students, followed by chair side discussion and clinical work under supervision
13	Review and chair side quiz, Patient case history recording by students, followed by chair side discussion and clinical work under supervision
14	Review and chair side quiz, Patient case history recording by students, followed by chair side discussion and clinical work under supervision
15	Assessment CEP A
16	Viva Voce

Clinical work for 7th/8th term posting

1	Discussion on instruments, principles of instrumentation
2	Discussion on principles of instrumentation
3	Discussion on case history: Part I
4	Discussion on case history: Part II
5 - 22	Review and chair side quiz, patient case history recording by students, followed by chair side discussion and clinical work under supervision
23	Assessment CEP A
24	Viva Voce



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3	2	1	1									3	2		
CO-2		2	3	2										3		
CO-3		2	2	3		1								3		
CO-4		3		3										3		
CO-5		1	1	2			1							3		
CO-6							1					1			3	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	50	50
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		140
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	130	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	10	
Others		15
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	10	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		225

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of Cos on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X		X	X	X
CO-3				X	X	X
CO-4	X	X	X	X	X	X
CO-5						X
CO-6	X	X	X			X
The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.						

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment



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9. Course Resources

a. Essential Reading

19. Class Notes
20. Newman MG, Takaei HH, Klokkevold PR, Carranza FA. (2006), 10th Edition. Carranza's Clinical Periodontology. Saunders Company
21. Lindhe J, Lang NP, Karring T. (2008), 5th Edition. Clinical Periodontology and Implant Dentistry. Volume 1 & 2. Blackwell Munksgaard

b. Recommended Reading

1. Genco RJ, Goldman HM, Cohen DW. (1980), 6th Edition. Contemporary Periodontics, C.V. Mosby Company, St Louis.
2. Grant DA, Stern IB, Listgarten MA. (1998), 6th Edition. Periodontics. C.V. Mosby Company, St Louis.
3. Ramfjord SP, Ash MM. (1996). Periodontology and Periodontics Modern Theory and Practice. AITBS Publishers, India.
4. Ito T, Johnson JD. (1994). Colour Atlas of Periodontal Surgery. Mosby & Wolfe, USA.
5. Cohen ES. Atlas of Periodontal Surgery. C.V. Mosby Company, USA.
6. Glickman (1990). Manual of Periodontal Instruments. WB Saunders and Co.
7. Wilson TG, Kornman KS. (2003), 2nd Edition. Fundamentals of Periodontics. Quintessence Publishing.
8. Garant PR. (2003). Oral Cells and Tissues. Quintessence Publishing.

c. Magazines and Journals

1. Journal of Periodontology
2. Journal of periodontal Research
3. Journal of Indian Society of periodontology
4. Periodontology 2000
5. Journal of American Dental Association
6. British Dental Journal
7. Quintessence International
8. Dental Clinics of North America
9. Australian Dental Journal
10. Journal of Canadian Dental Association
11. Journal of Dental Research

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications

Course Title	Prosthodontics and Crown & Bridge
Course Code	BDC407A
Course Type	Core Course
Department	Prosthodontics and Crown & Bridge
Faculty	Dental Sciences

1. Course Summary

The aim of studying Prosthodontics is to prepare students to diagnose patient needs and plan comprehensive treatment for fabrication of prosthesis to restore lost teeth and its associated structures and rehabilitate the patient.

The students will learn etiology and consequences of edentulous and maxillofacial defects, apply principles and plan methods of rehabilitation with a fixed / removable tooth or implant supported prosthesis. The students are also taught the principles of esthetic and functional rehabilitation of the fully dentate patient. The students are trained to diagnose and treat partial and completely edentulous patients with removable prostheses while valuing the concerns of the patient

2. Course Size and Credits

Number of Credits	11
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	240
Number of Weeks in a term	20
Department Responsible	Prosthodontics and Crown & Bridge
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1.** Describe biomechanics of rehabilitation of the edentulous patients
- CO-2.** Analyse treatment options for the edentulous patient with tooth/ implant supported restoration
- CO-3.** Diagnose, develop a treatment plan, and execute the same for rehabilitation of the partially edentulous patient with a removable/ fixed prosthesis with empathy and compassion
- CO-4.** Diagnose, develop a treatment plan, and execute the same for rehabilitation of the completely edentulous patient with a removable prosthesis with empathy and compassion
- CO-5.** Diagnose and recommend esthetic prosthetic restorative procedures for rehabilitation of the maxillofacial & aesthetically compromised patient
- CO-6.** Integrate multidisciplinary approach in treatment planning for optimum prosthodontic rehabilitation

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4. Course Contents

Course Contents - Theory			
	Chapter		Lesson Topics
1-2	Components of RPD	i	Major connector- maxillary
3-4		ii	Major Connectors- Mandibular
5		iii	Minor Connectors
6		iv	Rest and Rest Seats
7-8		v	Direct Retainers
9		vi	RPI system in brief
10		vii	Indirect retainer
11		vii	Denture base and teeth
12-13		Biomechanics of RPD	i ii iii
14-15	Survey and Design	i	Introduction to surveyors, parts and uses
		ii	Methods of surveying and Factors influencing path of insertion
16-18	Principles of RPD design	i	Introduction Forces acting on partial dentures
		ii	Factors influencing magnitude of stresses transmitted to abutment teeth Controlling stresses by design considerations
		iii	Designing using a surveyor
19-20	Mouth preparation and master cast	i	Preparation of mouth and abutment teeth
21-22	Preparation of abutment tooth	i	Classification, sequence of preparation
23-24	Impression procedures for removable partial dentures	i	Introduction to materials in RPD , Requirements , Classification, precautions
		ii	Special impression procedures, impression trays Factors influencing support of distal extension base, Master cast
25-26	Jaw relation and esthetic try in	i	Techniques to record
		ii	Articulation (in brief)
		iii	Selection of teeth and denture base (in brief)
		iv	Arrangement of artificial teeth and occlusion (in brief)
27	Support for distal extension base	i	Distal extension RPD
28-29	Laboratory procedures for framework construction	i	Survey and designing of master cast
		ii	Block out procedures
		iii	Duplication and fabrication of refractory cast
		iv	Waxing the framework
		v	Spruing, investing, burnout, casting
		vi	Finishing and polishing
30	Work authorization for	i	Work authorization

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

	RPD		
31	Try in of framework	i	Assessment and correction of framework
		ii	Clinical try in
32-33	Relining and Rebasing the RPD	i	Tooth supported Distal extension base
		ii	Methods of re-establishing occlusion on a relined RPD
34-35	Repairs and additions to RPD	i	Broken clasp arm
		ii	Fractured occlusal rest
		iii	Distortion / breakage of other components
		iv	Loss of tooth not involved in the support of the restoration
		v	Loss of an abutment tooth Other types of repairs
36-37	Processing of RPD	i	Denture base component
		ii	Teeth arrangement and processing
38	Insertion and post insertion follow up	i	Inspection of prosthesis
		ii	Checking fit of denture base
		iii	Checking extension
		iv	Occlusal correction
		v	Post insertion problems
39	Temporary acrylic partial dentures (Tutorials)	i	Interim
		ii	Transitional
		iii	Treatment
40	Immediate partial dentures	i	Temporary and definitive prosthesis
41	Removable Partial Dentures opposing complete dentures		
42-47	Dental Implants in complete denture	i	The science of osseointegration
		ii	Implant biomaterials
		iii	Clinical protocol for implant supported fixed prosthesis
		iv	Clinical protocol for treating with implant supported overdentures
		v	Managing complications
		vi	Recent advances
48	Introduction	i	Definitions Indications and Contraindications for FPD Advantages and Disadvantages Classification of FPD Parts of FPD
49-51	Fundamentals of occlusion in FPD – in brief.	i	Mandibular movements Centric relation
		ii	Ideal occlusion and Concepts of occlusion
		iii	Occlusal interferences Pathogenic occlusion
52-53	Articulators – in brief	i	Functions Advantages and Disadvantages
		ii	Requirements Classification
54	Diagnosis and Treatment planning	i	For single tooth restorations For multiple missing teeth

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

55	Abutment evaluation and selection	i	Introduction, crown and root evaluation, biomechanical design consideration
56	Periodontal considerations in FPD fabrication	i	Introduction, biologic width, finish lines,
57	Mouth preparation		
58-60	Principles of tooth preparations	i	Mechanical considerations
		ii	Biological considerations
		iii	Aesthetic considerations
61	Preparations for full veneer crowns	i	Advantages and Disadvantages Indications Contraindications Armamentarium and tooth preparation
62	Preparations for partial veneer crowns	i	Advantages and Disadvantages Indications and Contraindications Armamentarium and tooth preparation
63-64	Provisional Restorations	i	Ideal requirements of provisional restorations Classifications Materials used for provisional restorations
		ii	Techniques for fabrication Provisional cementation
65-66	Fluid Control and Soft Tissue Management	i	Objectives Methods
		ii	Gingival displacement in detail
67-68	Impressions	i	Impression materials Impression techniques
		ii	Impression techniques, Evaluating the impression
69	Working Casts and Dies	i	Requirements Materials
		ii	Types
70	Wax Patterns	i	Ideal requirements Properties Technique of fabrication Pontic fabrication
71-72	Pontics and Edentulous Ridges	i	Definitions Requirements Pre-treatment assessment
		ii	Biologic, esthetic and mechanical factors
73	Connectors for fixed partial dentures	i	Introduction, types, indications, contraindications, specifications
74-75	Esthetic Considerations	i	Color and light Shade guides Shade selection guidelines
		ii	Components of smile aesthetics



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			Proportion in smile design
76	Finishing and Cementation	i	Evaluation of the prosthesis Try in Cementation procedure Post cementation instructions
77	Solder Joints and Other Connectors	i	Requirements of a solder Soldering materials and soldering Brazing
78-79	All - Ceramic Restorations	i	Advantages Disadvantages Indications Contraindications Classification
		ii	Clinical procedures Cementation
80	Metal - Ceramic Restorations	i	Introduction Advantages Disadvantages Indications Contraindications
81-82	Preparations of intracoronal restorations	i	Principles of treatment Post - Ideal requirements, Classification, Selection criteria, Tooth preparation
		ii	Cores - Ideal requirements, Classification, Selection criteria
83	Preparations for extensively damaged teeth	i	Introduction, Principles of substitution, bases and cores, modification of damaged vital teeth, orthodontic adjuncts
84	Preparations for periodontally weakened teeth	i	Introduction, Preparation of finish lines, root resection
85	The Functionally Generated Path Technique	i	Introduction, advantages, disadvantages and technique
86-88	Investing and Casting	i	Investment materials Ideal requirements Investment procedures
			Casting alloys Casting procedures Finishing the cast restoration
			Ceramic build-up, tryin, staining and glazing
89	Resin - Bonded Fixed Partial Denture	i	Indications and contraindications Advantages and disadvantages Classification fabrication



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90	Luting agents and cementation procedures		Introduction, Luting agents, techniques
Course Contents – Clinicals			
DAYS	Term 5 & 6 Clinicals		
1-12	RPD		Fabrication of RPD-1 1-15
13-24	RPD		Fabrication of RPD-2 1-15
25-33	RPD		Fabrication of RPD-3 1-15
34-41	RPD		Fabrication of RPD-4 1-15
42-48	RPD		Fabrication of RPD-5 1-15
49	ASSESSMENT CEP B		
50	VIVA VOCE		
Term 7 & 8 - Practicals			
1-20	CD		Fabrication of CD -1 1-15
21-35	CD		Fabrication of CD-2 1-15
36-50	CD		Fabrication of CD -3 1-15
51-60	CD		Relining /Rebasing a CD 1-15
61-75	CD		Immediate denture 1-15
Crown cutting Practicals			
76-81	Tooth Preparation		Anterior PFM -1 1-15
82-87	Tooth Preparation		Anterior PFM -2 1-15
88-92	Tooth Preparation		Anterior PFM -3 1-15
93-97	Tooth Preparation		Posterior PFM -1 1-15
98-99	ASSESSMENT CEP B		
100	VIVA VOCE		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2		2	2	3			2				1			3		
CO-3		2	2	3		2	2	2						2	2	1
CO-4		3	2	3		2	2	2						3	2	1
CO-5		1		1										1	1	
CO-6					1									2		1

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	60	60
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Practical Work		150
Pre-Clinical laboratories/ Laboratory	20	
Clinical Area – FDS	120	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	10	
Others		10
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	10	
5. Group Discussions	00	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		240

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

Focus of Cos on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X				X
CO-3	X	X		X	X	X
CO-4	X	X		X	X	X
CO-5	X	X	X			X
CO-6	X	X	X	X	X	X
The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.						

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

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8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Zarb GA, Bolender C I, Hickey JC, Carlsson GE.(1996), Boucher's Prosthodontic treatment for Edentulous Patients. 12th Edition, St. Louis: CV Mosby.
3. Winkler S. (1988), Essentials of complete denture Prosthodontics. 2nd Edition, PSG Publishing Company.
4. Rosenstiel SF, Martin F I and Fujimoto J. (2006), Contemporary fixed Prosthodontics. 4th Edition, Mosby
5. Malone WFP, Koth DL, Cavazos E, et al. (1989), Tylman's theory & Practice of fixed Prosthodontics. 8th ed, St. Louis: Ishiyaku.
6. Hobo S, Ichida E and Gracia LT. (1989), Osseointegration& occlusal rehabilitation. 1st Ed, Quintessence Pub Co.
7. Graber DA, Goldstein RE and Feinman RE (1988), Porcelain laminate veneers. 1st Edition, Quintessence.

b. Recommended Reading

1. Zarb GA, Bolender C I, (1990), Boucher's Prosthodontic treatment for Edentulous Patients. 10th edition, St. Louis: CV Mosby.
2. Fenn HRB, Liddelw KP, Gimson AP. (1953), Clinical Dental Prosthetics. 1st Edition. CBS.
3. McKinney RV, (1991), Endosteal dental implants. 1st Ed, St Louis Mosby.
4. Agarwal NK. & Tripathi R. Clinical text on complete denture Prosthodontics. 1st Edition, Jaypee Brothers Medical Publishers.
5. Smith BGN. (1998), Planning & Making Crowns & bridges. 1st Edition, Dunitz Martin Ltd.

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6. Cowell CR, Curson I, Kantorowicz GF and Shovelton DS. (1985), Inlays Crowns & Bridges. 4th Edition, Wright.
7. Fagan MJ. (1990), Implant Prosthodontics. 1st Ed, Mosby.
8. Agur, AMR. & Arthur FD. (2012) Grant's atlas of anatomy. 13th Edition, Lippincott Williams & Wilkins.
9. Tay YM. (1992), Resin bonded bridges- a practitioner's guide. 1st Edition, Martin Dunitz.

c. Magazines and Journals

1. Journal of Prosthodontic Society
2. Journal of Indian Prosthodontic Society
3. Journal of Dental Research
4. Journal of American Dental Association
5. British Dental Journal
6. Quintessential International Journal
7. Dental Clinics of North America
8. Australian Dental Journal
9. Journal of Canadian Dental Association

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

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Course Specifications

Course Title	Conservative Dentistry and Endodontics
Course Code	BDC408A
Course Type	Core Course
Department	Conservative Dentistry and Endodontics
Faculty	Dental Sciences

1. Course Summary

The aim of Conservative Dentistry and Endodontics is to prepare students to diagnose, prevent and treat diseases and injuries of the hard dental tissues, pulp and associated peri-radicular tissues.

The students study clinical applications of dental materials, preventive modalities pertaining to the diseases of pulp and peri-radicular tissues, and basic root canal treatment. The students are trained to perform independently restorative, aesthetic and simple endodontic procedures.

2. Course Size and Credits:

Number of Credits	11
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	240
Number of Weeks in a term	20
Department Responsible	Conservative Dentistry and Endodontics
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Explain the disease process involving dental hard tissue and its sequelae
- CO-2. Describe bio-material science and instrumentation related to Restorative dentistry and Endodontics
- CO-3. Choose appropriate diagnostic and clinical techniques to restore form, function and aesthetics of the tooth based on fundamental principles
- CO-4. Diagnose Endodontic pathology and perform simple Endodontic treatment with compassion and concise post-operative care
- CO-5. Develop a preventive protocol for diseases of pulp
- CO-6. Plan evidence based management of clinical diseases

4. Course Contents

Course Contents - Theory			
SL No	Chapter		Topics
1.	Diagnosis and treatment planning	i	Detailed case history
2.		ii	Diagnosis and treatment planning
3.	Diagnosing Dental Caries	i	Different aids for caries diagnosis
4.	Management of deep carious lesions	i	Rationale, Zones of caries
5.		ii	Armamentarium, Management
6.	Pain Management	i	Control of pain
7.	Isolation of operating field	i	Control of moisture, Techniques
8.		ii	Rubber Dam isolation

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9.	Gingival Tissue Management	i	Management of gingival tissue during operative procedures
10.	Hypersensitive Dentin	i	Etiology, mechanism and management
11.	Non Carious lesions	i	Attrition, Abrasion
12.		ii	Erosion, Abfraction
13.	Pins in Restorative dentistry	i	Indication, contraindication, types of pins
14.		ii	Advantages, disadvantages, technical considerations, failure of pin restorations
15.	Recent cavity modification in amalgam restorations	i	Different modifications in amalgam cavity designs
16.		ii	Bonded amalgam restorations
17.	Direct gold restorations	i	Material Science, Case selection
18.		ii	Cavity designs
19.		iii	Manipulation and placement techniques
20.	Air Abrasion	i	Clinical Application
21.	Digital Radiography	i	Clinical Application
22.	Microscopes	i	Clinical Application
23.	Introduction to Endodontics	i	Background information
24.	Rationale of Endodontics	i	Case selection and treatment planning, indications and contraindications
25.	Pulpal lesions	i	Etiology, classification
26.		ii	Clinical Features and management
27.	Peri-apical lesions	i	Etiology, classification
28.		ii	C/F and management
29.	Endodontics – Periodontics interrelationship	i	Etiology, classification and management
30.	Traumatized teeth	i	Classification of fractures
31.		ii	Management
32.	Management of open Apex	i	Apexification
33.		ii	Apexogenesis
34.	Diagnostic aids in Endodontics	i	Different aids (including advanced aids) and their appropriate selection
35.	Anatomy of the pulp space (internal anatomy)	i	Internal anatomy of teeth
36.		ii	Root apex
37.	Endodontic Armamentarium	i	Classification, Standardisation
38.		ii	Hand instruments
39.	Rotary and other instruments for shaping	i	Engine driven instruments, ultrasonic instruments
40.		ii	Introduction to NiTi
41.	Principles of Endodontics	i	Isolation and sterilization
42.	Microbiology as related to Endodontics	i	Microbial flora of infected pulp, Culturing techniques
43.	Disinfection of root canal	i	Irrigants and techniques
44.		ii	Intra canal medicaments
45.	Access opening and its principles	i	Access opening principles
46.		ii	Procedure
47.	Working Length	i	Rationale, Methods
48.		ii	Techniques
49.	Preparation of root canal	i	Steps and principles of Root canal preparation

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50.		ii	Conventional
51.		iii	Step back technique
52.		iv	Crown Down and Balanced force technique
53.	Root canal obturation	i	Objectives, obturation materials
54.		ii	Root canal sealers
55.		iii	Techniques of root canal obturation
56.		iv	Recent advances
57.	Procedural errors encountered during endodontic treatment	i	Procedural errors
58.		ii	Management
59.	Post endodontic restoration	i	Types
60.		ii	Post and Core, Types of posts, fabrication
61.	Endodontic emergencies and management	i	Different Endodontic emergencies and their management
62.	Surgical Endodontics	i	Case selection, Classification, Surgical steps
63.		ii	Flap design
64.		iii	Apicoectomy, Flap Closure and suturing
65.		iv	Microsurgical Endodontics
65.		v	Other Surgical procedures
66.		vi	Endodontic Implants
67.	Regenerative Endodontics	i	Regeneration in Endodontics
68.	Cast restoration	i	Inlays and onlays , Principles of preparation
69.		ii	Cavity designs for Class II Cast Gold inlay
70.		iii	Investing and Casting
71.		iv	Casting defects and prevention
72.	Smear layer	i	Composition and its importance in restorative dentistry and Endodontics
73.	Lasers	i	Types, Clinical Application
74.	Discoloration of teeth	i	Etiology-Micro/Macroabrasion
75.		ii	Bleaching- Vital
76.		iii	Non-Vital
77.	Minimal Invasive Dentistry	i	Principles of MID
78.		ii	Materials and techniques
79.	Anterior restorations	i	GIC-Cavity preparation Technical
80.		ii	Considerations
81.		iii	Composites-Cavity preparation
81.		iv	Technical Considerations
83.	Esthetic Treatment planning	i	Principles of Esthetics
84.		ii	Fundamentals of colour, Shade matching
85.		iii	Esthetic treatment planning
86.	Adhesion to tooth structure	i	Adhesion and mechanism of adhesion
87.		ii	Dentin bonding systems
88.		iii	Challenges in bonding
89.	Esthetic Restorations	i	Inlays and Onlays
90.		ii	Veneers –Tooth preparation and fabrication, Clinical procedures for CAD CAM



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Contents – Clinical		
Clinical work for 5 th /6 th term posting		
1	Day 1	Introduction to the clinics, Case history discussion
2	Day 2	Infection control protocol
3	Day 3	Demonstration of Vitality testing
4	Day 4	Demonstration of isolation procedures
5	Day 5 - 14	Clinical work
6	Day 15	Assessment – CEP A
7	Day 16	Viva Voce
Clinical work for 7 th /8 th term posting		
1	Day 1	Rubber Dam isolation
2	Day 2	Access preparation, working length determination-Demonstration
3	Day 3	Magnification Aids including Microscope- Demonstration
4	Day 4	Digital radiography-Demonstration
5	Day 5 - 22	Clinical Work
6	Day 23	Assessment - CEP B
7	Day 24	Viva Voce

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												2			
CO-2		2											2		2	
CO-3		2	2	3			2							3		2
CO-4			2	3		2								2		2
CO-5	2	2		3	2	2									2	2
CO-6					2	2	2			1	2	1			2	2

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	60	60
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		150
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	140	
Workplace based assessment methods	00	
Hospital Setup – MSRHR	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	10	
Others		10
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	10	
5. Group Discussions	00	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		240

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or SEE) or subcomponent of CE (SC1, SC2, SC3, SC4 or SC5), COs are assessed as illustrated in the following Table.

Focus of Cos on each Component or Subcomponent of Evaluation						
Subcomponent ▶	Component 1: CE (10% Weightage)					Component 2: YEE (90% Weightage)
	SC1	SC2	SC3	SC4	SC5	
Subcomponent Type ▶	Term Test	Term Test	Assignment	Clinical Term Test	Clinical Term Test	200 Marks
Maximum Marks ▶	25	25	50	50	50	
CO-1	X	X				X
CO-2	X	X		X	X	X
CO-3	X	X		X	X	X
CO-4				X	X	X
CO-5	X	X	X			X
CO-6	X	X	X	X	X	X
The details of SC1, SC2, SC3, SC4 or SC5 are presented in the Programme Specifications Document.						

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Roberson T, Heymann H and Swift E. (2013), Sturdevant's Art and Science of Operative Dentistry. 5th Edition, Mosby Year Book Inc.
3. Charbeneau G T. (1988), Principles and Practice of Operative Dentistry. 3rd Edition, Lea & Febiger.
4. Marzouk M.A. (1997), Operative dentistry -Modern Theory and Practice.1st Edition, All India Publishers & Distributors.
5. Anusavice K J, Phillips R W. (2013), Phillips' Science of Dental Materials. 12th Edition, W.B.Saunders Company.
6. Suresh Chandra B, Gopi Krishna V. (2010), Grossmans Endodontic Practice. 12nd Edition, Varghese Pub House.

b. Recommended Reading

1. Craig R G, Ward M L. (1997), Restorative Dental Materials.10th Edition, Mosby Year Book Inc.
2. O'Brien W J. (2002), Dental Materials and their selection.3rd Edition, Quintessence Pub. Co.
3. Cohen S. (2006) Pathways of Pulp. 9th Edition, Elsevier Science Ltd.
4. Ingle J, Bakland. (2009), Endodontics. 6th Edition, Elsevier Science Ltd.
5. Goldstein R E. (1998), Esthetics in Dentistry. 2nd Edition, B.C. Decker Inc.

c. Magazines and Journals

1. Journal of Dental Research

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2. Journal of American Dental Association
3. British Dental Journal
4. Quintessence International
5. Dental Clinics of North America
6. Australian Dental Journal
7. Journal of Canadian Dental Association

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Course Specifications: Compulsory Rotatory Internship

Course Title	Oral Medicine and Radiology
Course Code	BDI401A
Course Type	Compulsory Rotatory Internship
Department	Oral Medicine and Radiology
Faculty	Dental Sciences

1. Course Summary

The aim of the Compulsory rotatory internship in Oral Medicine and Radiology is to develop basic diagnostic skills in the field of Oral Medicine and Radiology. The student is expected to perform basic clinical procedures under supervision which would enable him/her to function independently in the future as a practitioner.

The student should be able to perform basic radiographic procedures. The student should be able to manage simple symptomatic oral conditions

2. Course Size and Credits

Number of Credits	3
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	160
Number of Weeks in a term	20
Department Responsible	Oral Medicine and Radiology
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Perform basic diagnostic procedures used in Oral Medicine and Radiology
- CO-2. Outline treatment planning options for simple cases
- CO-3. Perform simple intraoral and extraoral radiographic procedures
- CO-4. Provide tobacco cessation counseling and pharmacotherapy for tobacco users

4. Course Contents

Theory – Content of BDC401A
Practical - Clinical History taking, clinical examination, diagnosis, charting and recording of treatment plan Observe chairside diagnostic procedures for oral potentially malignant disorders Observe chairside diagnostic procedures for diagnosis of Temporomandibular disorders
Practical/Laboratory content Perform full mouth intraoral periapical radiographic procedures Perform extraoral (OPG and Lateral Cephalogram) radiographic procedures Observe clinical, pathological and laboratory procedures including exfoliative cytology and Biopsy



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1		2	3	2			2							2		
CO-2		2	3	2			2							2		
CO-3		2	3	2			2							2		
CO-4				1	1		1			1						1

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		140
Pre-Clinical laboratories	00	
Clinical Area – FDS	140	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		10
1. Case Study Presentation	05	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		
Total Duration in Hours		160

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ►	SC1: Log Book	
Maximum Marks ►	50% Weightage	
CO-1	X	
CO-2	X	X
CO-3	X	X
CO-4	X	
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Rajendran R. (2012) Shafer's Textbook of Oral Pathology. 7th ed. New Delhi: Elsevier India.
2. Martin S. Greenberg, Michael Glick, Jonathan A. Ship (2008) Burket's oral medicine. 11th ed. McGraw Hill Education.



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3. Steven L. Bricker, Robert P. Langlais, Craig S. Miller (2002) Oral Diagnosis, Oral Medicine and Treatment Planning. 2nd ed. BC Decker Inc
4. Brad W. Neville, Douglas D. Damn, Carl M. Allen (2008) Oral and Maxillofacial Pathology. 3rd ed. Saunders publications.
5. Norman K. Wood and Paul W. Goaz (1997) Differential Diagnosis of Oral and Maxillofacial Lesions. 5th ed. St Louis Missouri (USA): Mosby publishers.
6. Joseph Regezi, James J Sciubba, (2008), Oral pathology: Clinicopathological correlations. 5th Edition, Elsevier.

b. Recommended Reading

1. Mervyn Shear, Paul M. Speight (2007) Cysts of the Oral and Maxillofacial Regions. 4th ed. Australia: Blackwell Publishing Asia Pvt Ltd.
2. Stanley F. Malamed (2007) Medical Emergencies in the Dental Office. 6th ed. Mosby Elsevier publications.

c. Magazines and Journals

1. Dento-Maxillofacial Radiology
2. Journal of Oral Medicine, Oral Surgery and Oral Radiology
3. Journal of Indian Association of Oral Medicine and Radiology
4. Journal of Dental Research
5. Journal of American Dental Association
6. British Dental Journal
7. Quintessential International Journal
8. Dental Clinics of North America
9. Australian Dental Journal
10. Journal of Canadian Dental Association

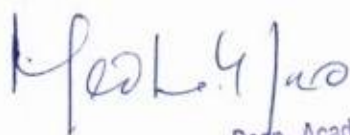
d. Websites

1. <http://www.birpublications.org/loi/dmfr>
2. <http://www.oooejournal.net>
3. <http://www.journalonweb.com/jiaomr>
4. <http://www.jomfp.in>
5. <http://www.oraloncology.com>

e. Other Electronic Resources

1. HELINET
2. EBSCO host


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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications: Compulsory Rotatory Internship

Course Title	Pediatric and Preventive Dentistry
Course Code	BDI402A
Course Type	Compulsory Rotatory Internship
Department	Pediatric and Preventive dentistry
Faculty	Dental Sciences

1. Course Summary

The course aims to train the interns to identify the oral health problems in children from infancy to adolescence and plan comprehensive oral rehabilitation.

The interns will also be trained to evaluate the dental behaviour of children and provide positive feedback in the maintenance of oral health. The interns will also diagnose the risk factors for dental caries and malocclusion. The interns will also observe and perform under supervision advanced endodontic techniques.

2. Course Size and Credits

Number of Credits	3
Credit Structure (Lecture: Tutorial: Practical)	1:0:3
Total Hours of Interaction	160
Number of Weeks in a term	20
Department Responsible	Pediatric and Preventive dentistry
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Describe the oral health problems and its manifestations in children from infancy through adolescence.

CO-2. Plan comprehensive treatment for children with oral health problems

4. Course Contents

Theory – Content of BDC402A
Practical - Clinical
Observation:
1. Procedure of Pulpotomy, Pulpectomy in primary teeth
2. Procedure of anterior and posterior primary crown
3. Oral rehabilitation under general anesthesia/inhalation sedation(optional)
Perform:
1. Topical fluoride application including varnish
2. Restorative work on primary teeth
3. Pulpotomy
4. Pulpectomy
5. Fabrication and insertion of space maintainer
6. Habit breaking appliance

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3	2	3	2	1	2	2	1	1	1	2	1	3			
CO-2		3	1	3			2	2		1				3		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		02
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	02	
Practical Work		150
Pre-Clinical laboratories	00	
Clinical Area – FDS	150	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		08
1. Case Study Presentation	03	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		
Total Duration in Hours		160

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ►	SC1: Log Book	
Maximum Marks ►	50% Weightage	
CO-1	X	X
CO-2	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. J.R Pinkham (2005). Pediatric Dentistry - Infancy through adolescence. 4th Edition : Elsevier Science Ltd
2. Ralph E McDonald, David R. Avery, Jeffery A Dean (2004). Dentistry for the Child and Adolescent. 8th Edition: Mosby Inc
3. Raymond L. Braham, Merle E. Morris (1985). Textbook of Pediatric Dentistry. 2nd Edition: CBS Publishers



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

b. Recommended Reading

1. Richard J. Mathewson, Robert E. Primosch (1995). *Fundamentals of Pediatric Dentistry*. 3rd Edition: Quintessence Publishers
2. Angus C Cameron, Richard P Widmer (2003). *Handbook of Pediatric Dentistry*. 3rd Edition: Mosby Year Book Inc
3. Sidney B Finn (1973). *Clinical Pedodontics*. 4th Edition: AITBS publishers
4. Stephen H. Y. Wei (1988). *Pediatric Dentistry: Total Patient Care*. 1st Edition: Lea & Febiger, U.S

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Course Specifications: Compulsory Rotatory Internship

Course Title	Public Health Dentistry Including Comprehensive Oral Health
Course Code	BDI403A
Course Type	Compulsory Rotatory Internship
Department	Public Health Dentistry
Faculty	Dental Sciences

1. Course Summary

The course aims to equip interns with skills essential to integrate multiple disciplines into an individualized, comprehensive, sequenced treatment plan using risk assessment diagnostic, and prognostic information for patients with holistic approach.

The interns will be provided an opportunity to treat patients as a whole, including diagnosis, treatment plan, treatment sequence, realistic expectations, time requirements and costs incurred entailing the patients' responsibilities. Thus, establishing therapeutic alliance between the patient and comprehensive care provider.

2. Course Size and Credits

Number of Credits	4
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	180
Number of Weeks in a term	20
Department Responsible	Public Health Dentistry
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Develop a comprehensive diagnosis and treatment plan incorporating historical, laboratory, radiographic and clinical findings of the patient
- CO-2. Provide comprehensive oral health care to patient
- CO-3. Establish therapeutic alliance between the patient and care provider
- CO-4. Maintain a patient record system that facilitates the retrieval and analysis of the process and outcomes of patient treatment
- CO-5. Practice and promote the principles of jurisprudence, professionalism and ethics in the practice of dentistry and in relationships with patients, personnel and colleagues



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4. Course Contents

Theory – Content of BDC403A
Practical - Clinical
Observation:
<ol style="list-style-type: none"> 1. Diagnosis and Comprehensive treatment plan 2. Assist in complex procedures / Observe complex treatment procedures
Perform:
Comprehensive treatment- including range of services as follows (but not limited to)
<ol style="list-style-type: none"> 1. Pit and fissure sealant/ topical fluorides 2. Restore teeth using a functionally acceptable range of materials and methods 3. Anterior RCT 4. Perform surgical and nonsurgical extraction of teeth 5. Perform uncomplicated pre-prosthetic surgery 6. Treat patients with missing teeth requiring removable and/or fixed prostheses

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)				
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4	
CO-1		3												3			
CO-2		3												3			
CO-3								2									2
CO-4							1								1		
CO-5								2									2

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		
1. Demonstration using Videos	00	00
2. Demonstration using Physical Models /Patients	00	
Practical Work		
Pre-Clinical laboratories/ Laboratory	00	170
Clinical Area – FDS	170	
Workplace based assessment methods	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		10
1. Case Study Presentation	05	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		
Total Duration in Hours		180

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Masahide Tsutsui, Teruko Tsutsui. (2008) Comprehensive Dentistry, Quintessence Publishing Ltd.
2. Malcolm A Lynch, Martin S Greenberg, (2003), Burket's Oral Medicine. 8th Edition, BC Decker.
3. Malcolm A Lynch, Martin S Greenberg, (2003), Burket's Oral Medicine. 8th Edition, BC Decker.
4. Malamed. (2008)Text book of Local Anesthesia. 5th Edition, Mosby.
5. Scully,C and Cawson,R. (2005)Medical Problems in Dentistry. 5th Edition, Elsevier.
6. Howe, G L. (1970, Reprinted in 1999) Extraction of teeth. 2nd Edition, Varghese Publishing House.
7. Newman MG, Takaei HH, Klokkevold PR, Carranza FA. (2006), 10th Edition. Carranza's Clinical Periodontology. Saunders Company.
8. Zarb GA, Bolender CI, Hickey JC, Carlsson GE. (1996), Boucher's Prosthodontic treatment for Edentulous Patients. 12th Edition, St. Louis: CV Mosby.
9. Winkler S. (1988), Essentials of complete denture Prosthodontics. 2nd Edition, PSG Publishing Company.
10. Rosenstiel SF, Martin F I and Fujimoto J. (2006), Contemporary fixed Prosthodontics. 4th Edition, Mosby.
11. Roberson T, Heymann H and Swift E. (2013), Sturdevant's Art and Science of Operative Dentistry. 5th Edition, Mosby Yearbook Inc.
12. Suresh Chandra B, Gopi Krishna V. (2010), Grossmans Endodontic Practice. 2nd Edition, Varghese Pub House.

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b. Recommended Reading

1. Goldstein R E. (1998), Esthetics in Dentistry. 2nd Edition, B.C. Decker Inc.
2. Proffit William R (2000) Contemporary Orthodontics. 2nd Edition, Mosby publishers

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Course Specifications: Compulsory Rotatory Internship

Course Title	Orthodontics & Dentofacial Orthopedics
Course Code	BDI404A
Course Type	Compulsory Rotatory Internship
Department	Orthodontics & Dentofacial Orthopedics
Faculty	Dental Sciences

1. Course Summary

The course aims to equip interns with skills essential to identify orthodontic problems and initiate further action.

The interns will be provided an opportunity to get familiarized in diagnostic procedures and treatment planning of orthodontic cases by observation. The interns will also be trained to fabricate simple removable orthodontic appliances to get an insight into treatment options for simple malocclusions.

2. Course Size and Credits

Number of Credits	3
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	160
Number of Weeks in a term	20
Department Responsible	Orthodontics & Dentofacial Orthopedics
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Discuss basic diagnostic procedures and treatment planning options in orthodontics

CO-2. Fabricate removable orthodontic appliances for simple orthodontic corrections



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4. Course Contents

Theory – Content of BDC404A	
Practical - Clinical	
Observation:	
<ol style="list-style-type: none"> Detailed diagnostic procedures Treatment plan options and decisions Clinical procedures related to orthodontic appliances Wire bending, soldering, welding, functional appliance fabrication 	
Perform:	
<ol style="list-style-type: none"> Wire bending for removable appliances Wire bending for space maintainers Acrylization of removable appliances Soldering procedure Pre-clinical procedures related to orthodontic appliances: impressions, model preparation, etc 	

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)				
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4	
CO-1		3	3	3	2	2	2	1	1			1			3	2	
CO-2				3	2	1	2								3	2	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		05
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	05	
Practical Work		145
Pre-Clinical laboratories/ Laboratory	30	
Clinical Area – FDS	115	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Others		10
1. Case Study Presentation	05	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		
Total Duration in Hours		160

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ►	SC1: Log Book	
Maximum Marks ►	50% Weightage	
CO-1	X	X
CO-2	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

		Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Graber TM (2000) Orthodontics: Current principles and technique. 3rd Edition, Mosby publishers.
2. Proffit William R (2000) Contemporary Orthodontics. 2nd Edition, Mosby publishers.
3. White T C, Gardiner J H, Leikton BC (1976) Orthodontics for dental student. 3rd Edition, Mac Millan India.
4. Adams C P, John S Kerr W (1990) Removable Orthodontic Appliances. 6th Edition, Varghese Pub House.

b. Recommended Reading

1. Moyers Robert E (1988) Hand book of Orthodontics. 4th Edition, Year book of medical publication.
2. Graber, Vanarsdall and Vig: Orthodontics Current Principles and Techniques. 5th Edition: Elsevier Publishers.

c. Magazines and Journals

1. Journal of Clinical Orthodontics

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Course Specifications: Compulsory Rotatory Internship

Course Title	Oral & Maxillofacial Surgery
Course Code	BDI405A
Course Type	Compulsory Rotatory Internship
Department	Oral & Maxillofacial Surgery
Faculty	Dental Sciences

1. Course Summary

The aim of this course is to equip students to perform basic oral surgical skills so as to function independently in the future as a practitioner in the field of oral surgery.

The students will be trained to assess patients and plan the treatment with special considerations to their health status and referrals to the other specialties as required. The students will also be trained to provide resuscitation procedures and learn to manage dental & medical emergencies. The students will learn to diagnose and maintain records of special cases like oral cancer, trauma etc.

2. Course Size and Credits

Number of Credits	3
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	160
Number of Weeks in a term	20
Department Responsible	Oral & Maxillofacial Surgery
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Discuss underlying principles of history taking, diagnosis and treatment planning protocols for basic oral surgical procedures with special consideration for medically compromised patients and patients undergoing radiotherapy.

CO-2. Perform simple minor surgical procedures like surgical extractions, soft tissue impactions, biopsies, Alveoloplasty, incision & drainage, cyst enucleation

CO-3. Demonstrate basic skills in management of dental emergencies like toothache, post extraction bleeding & bleeding due to trauma, dislocation of the mandible, dento alveolar fractures.

CO-4. Perform Resuscitation procedures following a posting in the emergency department



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4. Course Contents

Theory – Content of BDC405A	
Practical – Clinical	
<ol style="list-style-type: none"> 1. Perform simple extractions 2. Perform / Assist open extractions 3. Perform/Assist soft tissue impactions 4. Perform / Assist biopsy procedures 5. Perform /Assist dento alveolar fracture and arch bar wiring 6. Perform/Assist Incision and drainage 7. Perform /Assist Alveoloplasty 8. Assist/Observe cyst enucleation 9. Observe cases of Oral Cancer and document the case history 10. Perform extractions in patient undergoing Radiotherapy 1 case 	
Observe management of dental and medical emergencies like	
<ol style="list-style-type: none"> 1. Bleeding due to trauma 2. Dislocation of TMJ 3. Post extraction bleeding 4. Syncope in dental patients 5. Trigeminal neuralgia 6. Ludwig's Angina 7. Fractures of the jaws 	

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	2	2	2	2	1								3	3		
CO-2		3	2	2	1		2							3		
CO-3		2	2	3	1		2							3	2	
CO-4		3		2	1		2							3	1	
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution																

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		10
1. Demonstration using Videos	03	
2. Demonstration using Physical Models /Patients	07	
Practical Work		140
Pre-Clinical laboratories	00	
Clinical Area – FDS	140	
Workplace based assessment methods	00	

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Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		10
1. Case Study Presentation	05	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		
Total Duration in Hours		160

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Monheim, S. (1990) Local anesthesia and pain control in dental practice. 7th Edition, CBS.
2. Malamed. (2008) Textbook of Local Anesthesia. 5th Edition, Mosby.
3. Malamed, S F. (2007) Handbook of Medical Emergencies in the Dental Office. 6th Edition, Mosby.
4. Scully,C and Cawson,R. (2005) Medical Problems in Dentistry. 5th Edition, Elsevier.
5. Kruger, GO. (1989) Textbook of Oral and Maxillofacial Surgery. 6th Edition, Mosby.
6. Banks, P. (1991 Reprinted in 1993) Killeys Fracture of Mandible. 4th Edition, Wright.
7. Banks, P. (1987, Reprinted in 1992) Kiley's Fracture of middle third of the facial skeleton. 5th Edition, Wright.
8. Laskin, D M. (1992) Oral and Maxillofacial Surgery. Vol 1 & Vol 2- 1st Edition, Mosby.
9. Peterson, I J et al (2006) Contemporary Oral and Maxillofacial Surgery, 4th Edition, Elsevier
10. Howe, G L. (1970, Reprinted in 1999) Extraction of teeth. 2nd Edition, Varghese Publishing House

b. Recommended Reading

1. Mallik, NA. (2012) Textbook of Oral and Maxillofacial Surgery. 3rd Edition, Jaypee Brothers.
2. Alling CC, Helfrick JF, Alling RD (1993) Impacted teeth. 1st Edition, WB Saunders.
3. Miloro M, Ghali GE, Larsen PE, Waite PD. (Revised 2004) Peterson's Principles of Oral and Maxillofacial Surgery. Vol 1 & 2, 2nd Edition, B.C. Decker.
4. Peterson LJ, Ellis E, Hupp JR, Tucker MR, (Revised 2006) Peterson's Contemporary Oral and Maxillofacial Surgery. 4th Edition, Mosby

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5. McGovanda, (1993) The Maxillary Sinus and its Dental Implication. 1st Edition, Wright.
6. Seward GR, Killey HC, Kay LW (1987, Reprinted in 1992) Killey and Kay's outline of Oral Surgery Part I. 2nd Edition, Varghese Publishing House
7. Howe, G L. (1985, Reprinted in 1994), Minor Oral Surgery. 3rd Edition, Wright.
8. Topazian, R G & Goldberg M H (2002) Oral and Maxillofacial infections. 4th Edition, Saunders company.
9. Francis, C M (1993) Medical Ethics. 1st Edition, Jaypee Brothers.
10. Dimitroulis, G.Dolwick, MF. Van Sickels, JE (1994) Orthognathic Surgery: A Synopsis of Basic Principles and Surgical Techniques.1st Edition, Wright.
11. Rowe, NL and Williams IL, Maxillofacial Injuries (Vols. 1-2), 2nd Edition, Churchill Livingstone.
12. Pindborg,J.(1980) Oral Cancer And Precancer. Butterworth-Heinemann Ltd.
13. Starshak, T.J. (1971) Stein, HA. Slatt, BJ.Stein, RM. Preprosthetic Oral Surgery.1st Edition, Mosby.
14. Quinn, PD. (1998) Color atlas of Temporomandibular Joint Surgery. Mosby.
15. Varghese Mani, (1995), Orthognathic Surgery: Esthetic Surgery of the Face.1st Edition, Jaypee Brothers

c. Magazines and Journals

1. Dento-Maxillofacial Radiology
2. Journal of Oral Medicine, Oral Surgery and Oral Radiology
3. Journal of Indian Association of Oral Medicine and Radiology
4. Journal of Dental Research
5. Journal of American Dental Association
6. British Dental Journal
7. Quintessence International
8. Dental Clinics of North America
9. Australian Dental Journal
10. Journal of Canadian Dental Association

d. Websites

1. <http://www.birpublications.org/loi/dmfr>
2. <http://www.oooojournal.net>
3. <http://www.journalonweb.com/jiaomr>
4. <http://www.jomfp.in>
5. <http://www.oraloncology.com>

e. Other Electronic Resources

1. HELINET
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Course Specifications: Compulsory Rotatory Internship

Course Title	Periodontology
Course Code	BDI406A
Course Type	Compulsory Rotatory Internship
Department	Periodontology
Faculty	Dental Sciences

1. Course Summary

The aim of the Compulsory Rotatory Internship in Periodontology is to equip the student with basic clinical skills in the field of Periodontology.

The student is expected to diagnose and perform basic clinical procedures under supervision which would enable him/her to function independently in the future as a practitioner.

2. Course Size and Credits:

Number of Credits	3
Credit Structure (Lecture: Tutorial: Practical)	1:0:3
Total Hours of Interaction	160
Number of Weeks in a term	20
Department Responsible	Periodontology
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Diagnose and outline the appropriate treatment plan for periodontal disease in a given patient.

CO-2. Perform non-surgical procedures effectively in the management of periodontal diseases

CO-3. Perform under supervision minor surgical procedures effectively in the management of periodontal diseases

CO-4. Observe and assist complex surgical procedures performed under local anesthesia like Frenectomy, Gingivectomy, Flap Surgery, Regenerative Procedures and Rehabilitation with Dental Implants

4. Course Contents

Theory – Content of BDC406A

Practical - Clinical

Observation:

1. Observe treatment plan options and decisions
2. Assist Frenectomy/ Frenotomy
3. Assist Gingivectomy
4. Observe and Assist Flap Surgery



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Prepare a model or poster related to periodontology
- Perform:
1. Perform oral prophylaxis
 2. Root Planing
 3. Abscess Drainage
 4. Local drug delivery
 5. Periodontal splinting
 6. Polyp excision

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2		2		1										3		
CO-3		3												3		
CO-4		2	2	1						1					2	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		05
1. Demonstration using Videos	03	
2. Demonstration using Physical Models /Patients	02	
Practical Work		150
Pre-Clinical laboratories	00	
Clinical Area – FDS	150	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		05
1. Case Study Presentation	02	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	03	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		
Total Duration in Hours		160



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7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

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9. Course Resources

a. Essential Reading

1. Newman MG, Takaei HH, Klokkevold PR, Carranza FA. (2006), 10th Edition. Carranza's Clinical Periodontology. Saunders Company
2. Lindhe J, Lang NP, Karring T. (2008), 5th Edition. Clinical Periodontology and Implant Dentistry. Volume 1 and 2. Blackwell Munksgaard

b. Recommended Reading

3. Genco RJ, Goldman HM, Cohen DW. (1980), 6th Edition. Contemporary Periodontics, C.V. Mosby Company, St Louis.
4. Grant DA, Stern IB, Listgarten MA. (1998), 6th Edition. Periodontics. C.V. Mosby Company, St Louis.
5. Ramfjord SP, Ash MM. (1996). Periodontology and Periodontics Modern Theory and Practice. AITBS Publishers, India.
6. Ito T, Johnson JD. (1994). Colour Atlas of Periodontal Surgery. Mosby and Wolfe, USA.
7. Cohen ES. Atlas of Periodontal Surgery. C.V. Mosby Company, USA.
8. Glickman (1990). Manual of Periodontal Instruments. WB Saunders and Co.
9. Wilson TG, Kornman KS. (2003), 2nd Edition. Fundamentals of Periodontics. Quintessence Publishing.
10. Garant PR. (2003). Oral Cells and Tissues. Quintessence Publishing.

c. Magazines and Journals

1. Journal of Periodontology
2. Journal of Clinical periodontology
3. Periodontology 2000

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Course Specifications: Compulsory Rotatory Internship

Course Title	Prosthodontics and Crown & Bridge
Course Code	BDI407A
Course Type	Compulsory Rotatory Internship
Department	Prosthodontics and Crown & Bridge
Faculty	Dental Sciences

1. Course Summary

The aim of this course is to equip interns in treating and managing the partially or completely edentulous patients and thus rehabilitating and improving the oral health quality of life of patients. The students will be equipped with skills that are essential to analyze, diagnose and plan treatment for complete and partial edentulous patients that can be managed by removable or fixed prosthesis. The students will also be trained to select patients, plan treatment and assist in the rehabilitation of single missing tooth with implant prosthesis.

2. Course Size and Credits

Number of Credits	5
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	160
Number of Weeks in a term	20
Department Responsible	Prosthodontics and Crown & Bridge
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss treatment plan to rehabilitate the partially edentulous patient using a multidisciplinary approach.
- CO-2. Fabricate removable prosthesis. (Complete denture and Removable partial prosthesis)
- CO-3. Demonstrate clinical steps for anterior and posterior single and multi-unit fixed prosthodontics.
- CO-4. Explain the significance of implants in rehabilitation of missing teeth and recommend appropriate investigations required for the same.

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4. Course Contents

Theory – Content of BDC407A	
Practical - Clinical	
Observation:	
<ol style="list-style-type: none"> Detailed diagnostic procedures Treatment planning and design for removable partial denture Interpretation of diagnostic cast and radiographs Basic surgical protocol and instrumentation for fixed prosthodontics and implant treatment 	
Perform:	
<ol style="list-style-type: none"> Clinical procedures related to removable denture Tooth preparation on extracted/typhodont posterior teeth for single unit crown Single unit crowns on patients Denture reline, rebase and repair 	

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3	2	2	2	1		2	1		1			3	2		
CO-2				3										3	1	
CO-3				1										1	1	
CO-4	1		1										1	1	1	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		05
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	05	
Practical Work		145
Pre-Clinical laboratories/ Laboratory	30	
Clinical Area – FDS	115	
Workplace based assessment methods	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	05	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		
Total Duration in Hours		160

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Contemporary fixed prosthodontics: Rosenstiel Stephen F. 2nd edition. Mosby.
2. Fundamentals of fixed prosthodontics: Herbert T. Shillingburg; Sumiya Hobo, 3rd edition. Quintessence books.
3. Dental laboratory procedures. In Fixed partial Dentures: Rhodes. Rudd and Murrow; volume two. Mosby

b. Recommended Reading

1. Johnson's Modern Practice In Fixed Prosthodontics: Dykema Goodacre Phillips, 4th Edition; Saunders
2. M. Fradeani, G. Barducci Esthetic Rehabilitation In Fixed Prosthodontics: volume 2
3. F. Bassi, S. Carossa, G. Gassino: Advances in clinical Prosthodontics, Piccin

c. Magazines and Journals

1. Journal of Prosthetic Dentistry
2. Indian Journal of Prosthodontics
3. Journal of Prosthodontics
4. Dental Materials

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Course Specifications: Compulsory Rotatory Internship

Course Title	Conservative Dentistry and Endodontics
Course Code	BDI408A
Course Type	Compulsory Rotatory Internship
Department	Conservative Dentistry and Endodontics
Faculty	Dental Sciences

1. Course Summary

The course aims to equip interns with skills essential to identify restorative, esthetic and endodontic problems and initiate further action. The interns will be provided an opportunity to get familiarized to diagnose, prevent and treat diseases and injuries of the hard dental tissues, pulp and associated periradicular tissues.

The interns will be trained to perform independently restorative, aesthetic and simple endodontic procedures.

2. Course Size and Credits

Number of Credits	5
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	240
Number of Weeks in a term	20
Department Responsible	Conservative Dentistry and Endodontics
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Choose appropriate diagnostic and clinical techniques to restore form, function and aesthetics of the tooth based on fundamental principles

CO-2. Diagnose Endodontic pathology and perform simple Endodontic treatment with compassion and concise post-operative care

CO-3. Plan evidence based management of clinical diseases

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4. Course Contents

<p>Theory – Content of BDC408A</p> <p>Practical - Clinical</p> <p>Perform:</p> <ol style="list-style-type: none"> Simple and complex restorations using appropriate restorative materials Endodontic treatment of single rooted teeth including preventive protocols and pulp capping Simple esthetic restorations of anterior and posterior teeth <p>Observe:</p> <ol style="list-style-type: none"> Endodontic management of multi-rooted teeth including usage of advanced equipments and technologies Advanced esthetic procedures Endodontic surgeries

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1		3	2	2		2	2	2						2	2	
CO-2		3	2	2		2	2	2						2	2	2
CO-3		3	2	2		2	2	2						2	2	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		05
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	05	
Practical Work		220
Pre-Clinical laboratories/ Laboratory	10	
Clinical Area – FDS	210	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		15
1. Case Study Presentation	05	
2. Guest Lecture	00	
3. Industry / Field Visit	00	



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4. Brain Storming Sessions	00	
5. Group Discussions	10	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		
Total Duration in Hours		240

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Roberson T, Heymann H and Swift E. (2013), Sturdevant's Art and Science of Operative Dentistry. 5th Edition, Mosby Year Book Inc.
2. Charbeneau G T. (1988), Principles and Practice of Operative Dentistry. 3rd Edition, Lea and Febiger.
3. Marzouk M.A. (1997), Operative dentistry -Modern Theory and Practice. 1st Edition, All India Publishers and Distributors.
4. Anusavice K J, Phillips R W. (2013), Phillips' Science of Dental Materials. 12th Edition, W. B. Saunders Company.
5. Suresh Chandra B, Gopi Krishna V. (2010), Grossmans Endodontic Practice. 2nd Edition, Varghese Pub House.

b. Recommended Reading

1. Craig R G, Ward M L. (1997), Restorative Dental Materials. 10th Edition, Mosby Year Book Inc.
2. O'Brien W J. (2002), Dental Materials and their selection. 3rd Edition, Quintessence Pub. Co.
3. Cohen S. (2006) Pathways of Pulp.9th Edition, Elsevier Science Ltd.
4. Ingle J, Bakland. (2009), Endodontics. 6th Edition, Elsevier Science Ltd.
5. Goldstein R E. (1998), Esthetics in Dentistry.2nd Edition, B.C. Decker Inc.

c. Magazines and Journals

1. Journal of Conservative Dentistry
2. Journal of Endodontics

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Course Specifications: Compulsory Rotatory Internship

Course Title	Oral Pathology & Oral Microbiology
Course Code	BDI409A
Course Type	Compulsory Rotatory Internship
Department	Oral & Maxillofacial Pathology and Oral Microbiology
Faculty	Dental Sciences

1. Course Summary

The aim of this course is to train students to record case history with clinical examination, perform blood and sputum examination which will aid in diagnosis of systemic and or oral condition. They will be trained to perform blood and sputum examination. The students will be trained in the techniques of biopsy, routine tissue processing and staining for case reporting. The students also learn to perform the procedure and application of oral exfoliative cytology in the diagnosis of oral pathologic lesions.

2. Course Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	30
Number of Weeks in a term	20
Department Responsible	Oral & Maxillofacial Pathology and Oral Microbiology
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Discuss biopsy, tissue processing, staining and reporting of oral pathologic lesions

CO-2. Perform oral exfoliative cytology procedure & blood examination

4. Course Contents

<p>Theory Content-BDC303A</p> <p>Practical - Clinical Perform:</p> <ol style="list-style-type: none"> 7. Blood and sputum examination 8. Biopsy, routine tissue processing and staining for case reporting 9. Oral exfoliative cytology



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

CO-1. Discuss biopsy, tissue processing, staining and reporting of oral pathologic lesions

CO-2. Perform oral exfoliative cytology procedure & blood examination

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	2	3	3											3		
CO-2		3	3											3		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		05
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	05	
Practical Work		20
Pre-Clinical laboratories/ Laboratory	10	
Clinical Area – FDS	10	
Workplace based assessment methods	00	
Hospital Setup – MSRHS	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		05
1. Case Study Presentation	05	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		
Total Duration in Hours		30



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7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document.

The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ►	SC1: Log Book	
Maximum Marks ►	50% Weightage	
CO-1	X	X
CO-2	X	X

The details are presented in the Programme Specifications Document.

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the semester.

Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment



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9. Course Resources

f. Essential Reading

7. Bancroft JD, Gamble M. (2008) Theory and Practice of Histological Techniques, 6th ed, USA: Churchill Livingstone
8. Culling CFA, Allison RT, Barr WT. 1985 Cellular pathology techniques, 4th edition, Butterworths and co publishers

Recommended Reading

11. Freida LC, Christa H. 2009 Histotechnology: A Self-Instructional Text (3rd Edition) College of American Pathologists
12. Jamie M. Nowacek, BS, HT. Dako Laboratory manual.
13. Carleton, H.M., Drury, R.A.B. and Wallington, E.A., 1980. Carleton's histological technique. Oxford University Press, USA.
14. Kumar, K., Shetty, D.C. and Dua, M., 2012. Biopsy and tissue processing artifacts in oral mucosal tissues. Int J Head Neck Surg, 3, pp.92-98.
15. Patel, P.V., Kumar, S., Kumar, V., Vidya, G.D. (2011) Quantitative cytomorphometric analysis of exfoliated normal gingival cells, Journal of Cytology/Indian Academy of Cytologists, 28(2), p 66.

b. Magazines and Journals

- a. Journal of Cytology

c. Websites

- a. www.Pubmed.com

d. Other Electronic Resources

- a. HELINET
- b. EBSCO HOST

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Course Specifications: Compulsory Rotatory Internship

Course Title	Accident & Emergency
Course Code	BDI410A
Course Type	Compulsory Rotatory Internship
Department	Accident & Emergency Medicine
Faculty	Dental Sciences

1. Course Summary

The aim of this course is to equip students to manage medical emergencies and also to provide preliminary care. The students will be trained to assess patients and record vitals and perform detailed examination of all systems. They are also trained to perform basic suturing and securing peripheral intravenous cannulation and perform parenteral routes of drug administration under guidance. The students will learn to diagnose and maintain records of special cases.

2. Course Size and Credits

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	30
Number of Weeks in a term	20
Department Responsible	Accident and Emergency Medicine
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Check for functioning of all body systems
- CO-2. Demonstrate basic skills in management of medical and dental emergencies
- CO-3. Perform Resuscitation procedures following a posting in the emergency department
- CO-4. Perform basic suturing, IV Cannulation and parenteral routes of drug administration

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4. Course Contents

Theory – Content of BDC405A	
Practical – Clinical	
1.	Emergencies like - Tooth Ache, trigeminal neuralgia, bleeding from mouth, airway obstruction,
2.	Work in ICU
3.	Reporting on Medico legal aspects
4.	Others (Basic Suturing, IV Cannulation, IM/SC Injections) Observe cases of Oral Cancer and document the case history
5.	Observe management of dental and medical emergencies like
6.	Bleeding due to trauma
7.	Dislocation of TMJ
8.	Post extraction bleeding
9.	Ludwig's Angina
10.	Fractures of the jaws

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2		3		2	1		1					1		3		
CO-3		3		2	1		1					1		3		
CO-4		3		2	1		1					1		3	2	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		02
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	02	
Practical Work		25
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	25	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Projects	00	03
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	03	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		
Total Duration in Hours		30

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ►	SC1: Log Book	
Maximum Marks ►	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study

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9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Monheim, S. (1990) Local anesthesia and pain control in dental practice. 7th Edition, CBS.
2. Malamed. (2008) Text book of Local anesthesia. 5th Edition, Mosby.
3. Malamed, S F. (2007) Handbook of medical emergencies in the dental office. 6th Edition, Mosby.
4. Scully, C & Cawson, R. (2005) Medical problems in Dentistry. 5th Edition, Elsevier.
5. Kruger, G O. (1989) Textbook of oral and Maxillofacial Surgery. 6th Edition, Mosby.
6. Banks, P. (1991) Reprinted in 1993) Killey's fracture of mandible. 4th Edition, Wright.
7. Banks, P. (1987, Reprinted in 1992) Killey's fracture of middle third of the facial skeleton. 5th edition, Wright.
8. Laskin, D M. (1992) Oral and Maxillofacial Surgery. Vol 1 & Vol 2 - 1st Edition, Mosby.
9. Peterson, I J et al (2006) Contemporary Oral and Maxillofacial Surgery, 4th edition, Elsevier
10. Howe, G L. (1970, Reprinted in 1999) Extraction of teeth. 2nd edition, Varghese Publishing House

b. Recommended Reading

1. Mallik, N A. (2012) Textbook of Oral and Maxillofacial Surgery. 3rd edition, Jaypee Brothers.
2. Alling, J F et al (1993) Impacted teeth. 1st edition, Saunders.
3. Peterson, I J et al. (Revised 2004) Principles of Oral and Maxillofacial Surgery. Vol 1 & 2, 2nd edition, B.C. Decker.
4. MC Govanda, (1993) The Maxillary sinus and its dental implication. 1st edition, Wright.
5. Seward, G R et al (1987, Reprinted in 1992) Killey and Kay's outline of oral surgery Part I. 2nd edition, Varghese Publishing House
6. Howe, G L. (1985, Reprinted in 1994), Minor oral surgery. 3rd edition, Wright.
7. Topazian, R G & Goldberg M H (2002) Oral and Maxillofacial infections. 4th edition, Saunders Company.
8. Francis, C M (1993) Medical Ethics. 1st Edition, Jaypee Brothers.

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

9. Dimitroulis, G. Dolwick, MF. Van Sickels, JE (1994) Orthognathic Surgery: A Synopsis of Basic Principles and Surgical Techniques. 1st edition, Wright.
10. Rowe, NL & Williams IL. Maxillofacial Injuries (Vols. 1-2), 2nd Edition, Churchill Livingstone.
11. Pindborg, J. (1980) Oral Cancer And Precancer. Butterworth-Heinemann Ltd.
12. Starshak, T.J. (1971) Stein, HA. Slatt, B.J. Stein, RM. Preprosthetic Oral Surgery. 1st Edition, Mosby.
13. Quinn, PD. (1998) Color atlas of temporomandibular joint surgery. Mosby.
14. Varghese Mani, (1995), Orthognathic Surgery: Esthetic Surgery of the Face. 1st Edition, Jaypee Brothers

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Course Specifications: Compulsory Rotatory Internship

Course Title	Rural Posting
Course Code	BDI411A
Course Type	Compulsory Rotatory Internship *
Department	Public Health Dentistry
Faculty	Dental Sciences

1. Course Summary

The aim of the rural postings is to expose the students to the social determinants of the rural settings, so as to render the services with prime empathy, compassion without considering the differed social stratifications. This would also enable them to contrast the factors contributing to the health status or events between the urban and rural population.

The students would also be introduced to the research experience through hands on with data collection and entry. The students will also participate in developing customized oral health education materials for the rural patients. The students are intended to comply the life, witnessed in the rural settings.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	180
Number of Weeks in a term	20
Department Responsible	Public Health Dentistry
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Expose students to the social determinants of the rural settings, so as to render the services with prime empathy and compassion
- CO-2. Appraise the lifestyle issues and problems encountered at the rural settings of an individual
- CO-3. Develop and participate in the cost effective strategy for Oral Health promotion at individual level and community at large
- CO-4. Collect and analyze the oral health status data of school children using appropriate tool
- CO-5. Assist in research projects by data collection and data entry
- CO-6. Demonstrate leadership qualities while organizing different community programmes



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	80	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	15	
Outreach centres	60	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	15	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		
Total Duration in Hours		180

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X
CO-5	X	
CO-6	X	
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications: Professional Core Elective

Course Title	Management of Oral Mucosal Lesions
Course Code	BDE401A
Course Type	Professional Core Elective 1
Department	Oral Medicine and Radiology
Faculty	Dental Sciences

1. Course Summary

This course aims to prepare the students for comprehensive management of oral mucosal lesions of the oral cavity.

The students are trained to diagnose mucosal lesions commonly encountered in clinical practice based on clinical examination and lab investigation. Students are also trained to devise an appropriate management protocol and implement.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Oral Medicine and Radiology
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Record case history relevant to the oral mucosal lesions
- CO-2. Prescribe necessary investigations to aid in diagnosis
- CO-3. Develop an appropriate treatment protocol for oral mucosal lesions
- CO-4. Discuss recent trends and innovations in management of mucosal lesions

4. Course Contents

Lesson No	Chapter		Lesson Topics
1	Etiopathogenesis of common mucosal lesions	i.	Introduction, Basics of etiopathogenesis of common mucosal lesions
2	Case history	i.	Importance of case history, personal history with general examination and extra oral examination, Intraoral examination – soft and hard tissue examination, Investigation, diagnosis and treatment planning
		ii.	Performing clinical examination to grade and stage the lesion clinically
3		i.	Prescribing and performing relevant investigations to confirm the provisional diagnosis of the lesion

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

	Investigations for diagnosis of various mucosal lesions	ii.	Informed consent Infection control protocols to be followed
4	Principles of management of various mucosal lesions	i.	General Principles for emergency management and care
		ii.	Definitive care of mucosal lesions
		iii.	Follow up and review
5	Barriers Management in of mucosal lesions	i	Systemic influences(associated co morbidities) on oral health and management of mucosal lesions
		ii	Drug Resistance and relapse seen in certain conditions
6	Recent trends and innovations in management of mucosal lesions	i.	Herbal therapies , Acupuncture, stem cell therapy, photodynamic therapy, Multidisciplinary approach for management of mucosal lesions
CLINICAL WORK			
1	Case discussion		
2	Chair side investigations		
3	Writing referral for physician opinion		
4	Providing definitive care for mucosal lesions		
5	Follow up and Review		
6	Case presentation		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)				
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4	
CO-1		2		3			2							2			
CO-2		2	3	2			2							2			
CO-3		2		3			2							2			
CO-4		2		2			2							2	1		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		15
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	15	
Practical Work		55
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	45	
Workplace based assessment methods	00	
Hospital Setup – MSRH	08	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Field work/dental camp	00	
Outreach centres	02	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	04	30
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations	05	
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

2. Rajendran R. (2012) Shafer's Textbook of Oral Pathology. 7th ed. New Delhi: Elsevier India.
3. Martin S. Greenberg, Michael Glick, Jonathan A. Ship (2008) Burket's oral medicine. 11th ed. McGraw Hill Education.
4. Steven L. Bricker, Robert P. Langlais, Craig S. Miller (2002) Oral Diagnosis, Oral Medicine and Treatment Planning. 2nd ed. BC Decker Inc
5. Shafer, Hine, Levy, (2009), Textbook of Oral Pathology. 6th Edition, Elsevier.
6. Brad W. Neville, Douglas D. Damron, Carl M. Allen (2008) Oral and Maxillofacial Pathology. 3rd ed. Saunders publications.
7. Davidson, (2006), Principles and Practice of General Medicine. 20th Edition, Elsevier

b. Recommended Reading

1. Norman K. Wood and Paul W. Goaz (1997) Differential Diagnosis of Oral and Maxillofacial Lesions. 5th ed. St Louis Missouri (USA): Mosby publishers
2. Joseph Regezi, James J Sciubba, (2008), Oral pathology: Clinicopathological correlations. 5th Edition, Elsevier.

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Basics of CBCT in Implant Dentistry
Course Code	BDE402A
Course Type	Professional Core Elective 2
Department	Oral Medicine and Radiology
Faculty	Dental Sciences

1. Course Summary

This Course aims to provide an introduction to Cone Beam Computerized Tomography (CBCT) and its application.

The student will be trained on the various aspects of clinical consideration for operating CBCT machine. The student will also be trained for task specific applications of CBCT relevant to simple procedures in Dental Implantology.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Oral Medicine and Radiology
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Discuss the principles of CBCT Imaging

CO-2. Discuss Strengths and Limitations of CBCT

CO-3. Demonstrate the Clinical considerations for CBCT application

CO-4. Perform Dental Implant Site Assessment for Simple case using CBCT

4. Course Contents

Lesson No	Chapter		Lesson Topics
1	Principles of Cone-Beam Computed Tomographic Imaging	i	Image Acquisition Image Detection Image Display
2	Clinical Considerations	i	Patient selection criteria Patient Preparation Imaging Protocol Image Optimization Archiving, Export and Distribution
3	Image Artifacts	i	Inherent Artifact Procedure-Related Artifacts Introduced Artifacts Patient Motion Artifacts



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4	Task-Specific Applications	i	Diagnosis Preoperative Assessment Treatment Planning Virtual Simulations
CLINICAL WORK			
1	Image Acquisition		
2	Digital manipulation of Displayed Image/ Image Optimization		
3	Patient selection criteria		
4	Imaging Protocol		
5	Preoperative Assessment		
6	Dental Implant Treatment Planning		
7	Virtual Simulations		
8	Case presentation		
9	Assignment		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	2		2	2			1						2	2		
CO-2	2													2		
CO-3		2	3	2			1							2	1	
CO-4		2	3	2			1							2	1	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		15
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	15	
Practical Work		55
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	45	
Workplace based assessment methods	00	
Hospital Setup – MSRH	08	
Field work/dental camp	00	
Outreach centres	02	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		30

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	
CO-2	X	
CO-3	X	
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

	Overview of laser wavelengths used in dentistry	ii	Laser –art and science of reconstructive process
4	Laser use in fixed, removable and implant dentistry, periodontics, pediatric dentistry, cosmetic dentistry	i	Monotherapy and as adjunctive modality in management of periodontal pathology
		ii	Function of lasers in cosmetic dentistry and the historic and contemporary methods used for bleaching teeth, comparison of bleaching agents and energy sources, discuss the procedures and related safety issues
5	Lasers in a hospital based dental practice	i	Lasers in a hospital based dental practice
CLINICAL WORK			
1	Case history discussion with patient demonstration		
2	Case presentation		
3	Assignment		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2		3	3											3		
CO-3			3	2										3	2	
CO-4		3	3				1			1		1		3	2	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		15
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	15	
Practical Work		55
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	55	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Advanced Learning Centre	00	30
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations	05	
Total Duration in Hours	105	

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	
CO-2	X	X
CO-3	X	X
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Carranza, F. A., Newman, M. G., Takei, H. H., & Klokkevoold, P. R. (2006). Carranza's Clinical Periodontology. St. Louis, Mo, Saunders Elsevier.
2. Lindhe, J., Karring, T., & Lang, N. P. (2003). Clinical Periodontology and Implant Dentistry. Oxford, Uk, Blackwell.
3. Robert A.Convissar. (2000). Lasers and Light Amplification in Dentistry. The Dental Clinics of North America.
4. Donald J. Coluzzi and Robert A.Convissar (2004). Lasers in Clinical Dentistry. The Dental Clinics of North America.

b. Recommended Reading

1. Sato, N. (2000). Periodontal surgery: A Clinical Atlas. Chicago, Quintessence Pub. Co
2. Cohen, E. S. (2007). Atlas of Cosmetic and Reconstructive Periodontal Surgery. Hamilton, BC Decker.
3. Kieser, J. B. (1990). Periodontology: A Practical Approach. London, Wright.
4. Nevins, M., & Mellonig, J. T. (1998). Periodontal Therapy: Clinical Approaches and Evidence of Success. Chicago, Quintessence Pub. Co.
5. Serio, F. G., & Hawley, C. E. (2009). Manual of Clinical Periodontology: A Reference Manual for Diagnosis & Treatment. Hudson, Ohio, Lexi-Comp.
6. Bartolucci, E. G. (2001). Periodontology: Text-Atlas. Milan, Italy, RC Libri
7. Rajendran, R., Sivapathasundharam, B., & Shafer, W. G. (2012). Shafer's textbook of Oral Pathology.
8. J., Goldman, H. M., Cohen, D. W., & Goldman, H. M. (1990). Contemporary Periodontology. St. Louis, Mosby.
9. Langlais, R. P., Miller, C. S., & Nield-Gehrig, J. S. (2009). Color Atlas of Common Oral Diseases.

c. Magazines and Journals

1. Journal of Periodontology
2. Journal of Periodontal Research
3. Periodontology 2000
4. Journal of Indian Society of Periodontology

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Periodontal Surgery for Clinician
Course Code	BDE404A
Course Type	Professional Core Elective 2
Department	Periodontology
Faculty	Dental Sciences

1. Course Summary

The students will be trained to identify cases for minor periodontal surgeries. They will also be trained in the area of armamentarium and instrumentation relevant to minor surgical procedures. The student will be trained to demonstrate three different types of incisions and suturing techniques on models and perform minor periodontal surgical procedures.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Periodontology
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss the general principles for periodontal surgery
- CO-2. Select patients for minor periodontal surgery
- CO-3. Demonstrate different incisions and suturing techniques on models
- CO-4. Perform minor periodontal surgeries

4. Course Contents

Lesson No	Chapter	Lesson Topics
1	General Principles of Periodontal Surgery & Treatment Planning	1. Patient preparation, 2. Emergency equipment, 3. Periodontal dressings, 4. Management of post-operative pain.
2	Surgical anatomy of periodontium and related structures	1. Maxilla 2. Mandible 3. muscles and anatomic spaces
3	Surgical instruments	1. Excisional and incisional instruments, 2. Surgical curettes and sickles, Periosteal elevators, Surgical chisels, Tissue forceps,

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

		Scissors and nippers, Needle holders,
4	Gingival Surgical Techniques	1.Gingivectomy 2.Gingivoplasty 3.Indications and Contraindications 4.Healing,
5	Minor mucogingival surgical technique	1. Frenectomy Indication and contraindications 2. Frenotomy Indication and contraindications 3. Abscess drainage
CLINICAL WORK		
1	Case history discussion with patient demonstration	
2	Assessment of child behavior	
3	Sterilization and infection control practices	
4	Hospital protocols	
5	Operation theatre protocols	
6	Patient admission	
7	Oral Rehabilitation under mild sedation	
8	Oral Rehabilitation under General anesthesia	
9	Case presentation	
10	Assignment	

5. Course Map (CO-PO-PSO Map)

- CO-1. Discuss the general principles for periodontal surgery
- CO-2. Select patients for minor periodontal surgery
- CO-3. Demonstrate different incisions and suturing techniques on models
- CO-4. Perform minor periodontal surgeries

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2		2												2		
CO-3		3												3	1	
CO-4							2			1				2		
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution																

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6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		15
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	15	
Practical Work		55
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	55	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ►	SC1: Log Book	
Maximum Marks ►	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X

The details are presented in the Programme Specifications Document.



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

Sl. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Perry R Klokkevold , Henry H Takei and Fermin A Carranza. General principles of Periodontal Surgery, 10th edition, Elsevier Science Ltd
2. Greg JM Surgical Anatomy. In Laskin DM Oral and Maxillofacial Surgery Vol 1 St Louis 1980, Mosby.
3. Fermin A Carranza Surgical Anatomy of the Periodontium and Related Structures. 10th Edition, Elsevier Science Ltd
4. Edwards Cohen Sutures and Suturing Techniques Atlas of Cosmetic and Reconstructive Periodontal Surgery 3rd Edition, Peoples Medical Publishing House.
5. Edwards Cohen Gingivectomy and Gingivoplasty Atlas of Cosmetic and Reconstructive Periodontal Surgery 3rd Edition, Peoples Medical Publishing House.
6. Naoshi Sato Frenectomy and Frenotomy Periodontal Surgery: A Clinical Atlas 2nd edition quintessence publishing.
7. Jan I Wennstrom. Mucogingival therapy – periodontal plastic surgery clinical periodontology and implant dentistry 5th edition Blackwell publishers.

b. Recommended Reading

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

1. Lucinda B McKechnie. Instrumentation Selection and Care Contemporary Periodontics Mosby Publisher.
2. Peter J Robinson And Charles H Goodman General Principles Of Surgical Therapy Contemporary Periodontics Mosby Publisher.

c. Magazines and Journals

1. Journal of Periodontology
2. Journal of Periodontal Research
3. Periodontology 2000
4. Journal of Indian Society of Periodontology

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Hospital Pediatric Dentistry
Course Code	BDE405A
Course Type	Professional Core Elective 1
Department	Pediatric and Preventive Dentistry
Faculty	Dental Sciences

1. Course Summary

This course aims to prepare students to identify child patients requiring oral rehabilitation under general anesthesia and co-ordinate appropriate referrals.

The students will be able to analyze uncooperative child behavior and select patients for oral rehabilitation under general anesthesia. They will also relate to hospital protocols and assist oral rehabilitation under both mild to moderate sedation and general anesthesia.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Pediatric and Preventive Dentistry
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Assess patients based on risk benefit ratios for oral rehabilitation under general anesthesia

CO-2. Discuss the concepts of hospital pediatric dentistry

CO-3. Co-ordinate with the hospital for operation theatre protocols

CO-4. Assist for oral rehabilitation under general anesthesia

4. Course Contents

Lesson No	Chapter		Lesson Topics
1	Introduction to Hospital Pediatric Dentistry	i	Definition and scope of Hospital Pediatric Dentistry
2	Selection of the Patient	i	Importance of case history, personal history with general examination and extra oral examination
3		ii	Intraoral examination – soft and hard tissue examination, Investigation, diagnosis and treatment planning
4	Child psychology with emphasis on behavioral and emotional development	i	Definition of behaviour and behaviour management and factors affecting child behavior
5		ii	Classification of child behavior and role of dental team in behaviour management and role of parents

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6	Behaviour management in Pediatric Dentistry	i	Domains of behaviour management – physical and pharmacologic domain – mild sedation
7		ii	Domains of behaviour management –pharmacologic domain – moderate sedation
8		iii	Domains of behaviour management –pharmacologic domain - deep sedation / general anesthesia
9	Hospital Pediatric dentistry	i	Informed consent
10		ii	Hospital administration protocols
11		iii	Operating theatre protocols
12		iv	Infection control in Operation theatre
13	Role of systemic diseases in children for Hospital Pediatric dentistry	i	Management of children with medical problems – CNS, CVS, RS and GIT problems
14		ii	Management of children with medical problems – Renal, Endocrinological problems
15		iii	Management of children with medical problems – Hematological problems
CLINICAL WORK			
1	Case history discussion with patient demonstration		
2	Assessment of child behavior		
3	Sterilization and infection control practices		
4	Hospital protocols		
5	Operation theatre protocols		
6	Patient admission		
7	Oral Rehabilitation under mild sedation		
8	Oral Rehabilitation under General anesthesia		
9	Case presentation		
10	Assignment		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	2	3	3	3		2							3	3		
CO-2	3	3	3	3		2	2							3		
CO-3	2	3	3	3		2	1							3	2	
CO-4	3	3	3	3										3		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		60
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	10	
Workplace based assessment methods	00	
Hospital Setup – MSRH	40	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	10	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		30
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ►	SC1: Log Book	
Maximum Marks ►	50% Weightage	
CO-1	X	X
CO-2	X	
CO-3	X	
CO-4	X	X

The details are presented in the Programme Specifications Document.



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. J.R Pinkham (2005). Pediatric Dentistry - Infancy through adolescence. 4th Edition : Elsevier Science Ltd
3. Ralph E McDonald, David R. Avery, Jeffery A Dean (2004). Dentistry for the Child and Adolescent. 8th Edition: Mosby Inc
4. Raymond L. Braham, Merle E. Morris (1985). Textbook of Pediatric Dentistry. 2nd Edition: CBS Publishers
5. Richard J. Mathewson, Robert E. Primosch (1995). Fundamentals of Pediatric Dentistry. 3rd Edition: Quintessence Publishers
6. Angus C Cameron, Richard P Widmer (2003). Handbook of Pediatric Dentistry. 3rd Edition: Mosby Year Book Inc
7. Sidney B Finn (1973). Clinical Pedodontics. 4th Edition: AITBS publishers
8. Stephen H. Y. Wei (1988). Pediatric Dentistry: Total Patient Care. 1st Edition: Lea & Febiger, U.S
9. Sakharkar, B. M. (1998). Principles of Hospital Administration and Planning, Jaypee Publishers, New Delhi

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

10. Sharma K. R., Sharma Yashpal (2003) - A handbook on Hospital Administration, Durga Printers, Jammu
11. Davies Llewellyn R. and Macaulay H. M. C. (1995) - Hospital Planning and Administration, Jaypee Brothers, New Delhi

b. Recommended Reading

1. Leonard B Kaban (2004). Pediatric Oral and Maxillofacial Surgery. 1st Edition: W B Saunders Books
2. Sohrab N Tomasi (2000). Manual of Pediatric Drug Therapy. 2nd Edition: Springhouse Publishing
3. Crispian Scully, Roderick A Cawson (2005). Medical Problems in Dentistry. 5th Edition: Elsevier Science Ltd

c. Magazines and Journals

1. Journal of Indian Society of Pedodontics

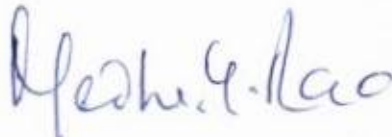
d. Websites

1. www.pubmed.com

e. Other Electronic Resources

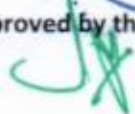
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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Comprehensive Pediatric Rehabilitation
Course Code	BDE406A
Course Type	Professional Core Elective 2
Department	Pediatric and Preventive Dentistry
Faculty	Dental Sciences

1. Course Summary

This course aims to prepare the students for comprehensive, preventive and therapeutic oral health care for children with severe Early Childhood Caries in terms of restorative and endodontic perspectives.

The students will be trained to assess caries risk and plan comprehensive restorative treatment. The students will also be trained to diagnose pulpal conditions and deliver appropriate treatment.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Pediatric and Preventive Dentistry
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Plan comprehensive treatment based on caries risk assessment
- CO-2. Select appropriate restorative material for rehabilitation
- CO-3. Provide endodontic treatment in primary teeth
- CO-4. Rehabilitate children with severe early childhood caries

4. Course Contents

Lesson No	Chapter		Lesson Topics
1	Introduction to Pediatric Dentistry	i	Definition and scope of Pediatric Dentistry
2	Selection of the Patient	i	Importance of case history, personal history with general examination and extra oral examination Intraoral examination – soft and hard tissue examination, Investigation, diagnosis and treatment planning
3	Child psychology with emphasis on behavioral and emotional development	i	Definition of behavior and behavior management and factors affecting child behavior
4		i	Classification of child behavior and role of dental team in behavior management and role of parents

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5	Behaviour management in Pediatric Dentistry	i	Domains of behavior management – Non pharmacologic domains
6		ii	Domains of behavior management – pharmacologic domain – moderate sedation
7	Cariology	i.	Historical background Definition - Etiology & Pathogenesis Caries pattern in primary, young permanent and permanent teeth in children Early childhood caries Rampant caries, and extensive caries - Definition, etiology, Pathogenesis, Clinical features, Complications and Management
9		ii.	Role of diet and nutrition in Dental Caries - Dietary modifications and Diet counseling Dental Plaque - Definition, Initiation, Pathogenesis, Biochemistry, and Morphology' & Metabolism
10		iii.	Subjective and objective methods of Caries detection with emphasis on Caries Activity tests, Caries prediction, Caries susceptibility and their clinical Applications
11	Pediatric Operative Dentistry -	i	Principle of Operative Dentistry along with modifications of required for cavity preparation in primary and young permanent teeth Various Isolation Techniques
12		ii	Dental Materials - past, current & latest including tooth colored materials
13		iii	Restorations of decayed primary, young permanent and permanent teeth in children using various restorative material like Glass Ionomer, Composites, Silver, Amalgam & its alternatives, Stainless steel, Polycarbonate and Resin Crowns / Veneers & fiber post systems.
14	Pediatric Endodontics	i.	Primary Dentition - Diagnosis of pulpal diseases including recent advances and armamentarium
15		ii.	Management - Pulp capping, Pulpotomy, Pulpectomy (Materials & Methods)

CLINICAL WORK

1	Case history discussion with patient demonstration
2	Assessment of child behavior
3	Caries risk assessment
4	Comprehensive treatment planning
5	Oral rehabilitation of patients
6	Oral rehabilitation of patients
7	Oral rehabilitation of patients
8	Oral rehabilitation of patients
9	Case presentation
10	Assignment



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3	2	1	
CO-2		2				1								2		1
CO-3		2	2											2		
CO-4			1	2										2		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		60
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	60	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		30
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	
CO-3	X	
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. J.R Pinkham (2005). Pediatric Dentistry - Infancy through adolescence. 4th Edition : Elsevier Science Ltd
2. Ralph E McDonald, David R. Avery, Jeffery A Dean (2004). Dentistry for the Child and Adolescent. 8th Edition: Mosby Inc
3. Raymond L. Braham, Merle E. Morris (1985). Textbook of Pediatric Dentistry. 2nd Edition: CBS Publishers

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4. Richard J. Mathewson, Robert E. Primosch (1995). *Fundamentals of Pediatric Dentistry*. 3rd Edition: Quintessence Publishers
5. Angus C Cameron, Richard P Widmer (2003). *Handbook of Pediatric Dentistry*. 3rd Edition: Mosby Year Book Inc
6. Sidney B Finn (1973). *Clinical Pedodontics*. 4th Edition: AITBS publishers
7. Stephen H. Y. Wei (1988). *Pediatric Dentistry: Total Patient Care*. 1st Edition: Lea & Febiger, U.S

b. Recommended Reading

1. Ole Fejerskov, Edwina Kidd, Bente Nyvad (2008). *Dental Caries: The Disease and Its Clinical Management*. 2nd Edition: Blackwell Munksgaard
2. Gordon Nikiforuk (Volume 1 & 2) (1985). *Understanding Dental Caries: Etiology And Mechanisms: Basic And Clinical Aspects. Understanding Dental Caries: Prevention*. 1st Edition: Karger Publications
3. Martin E. J. Curzon, J. F. Roberts (1996). *Kennedy's Pediatric Operative Dentistry*. 4th Edition: Wright Publishers
4. Theodore Roberson, Harold Heymann and Edward Swift (2006). *Sturdevant's Art and Science of Operative Dentistry*. 4th Edition: Mosby Year Book Inc
5. Stephen Cohen (2006). *Pathways of pulp*. 9th Edition: Elsevier Science Ltd
6. John I Ingle, Bakland (2009). *Endodontics*. 6th Edition: Elsevier Science Ltd
7. N.O Harris, F.G Godoy (2008). *Primary Preventive Dentistry*. 7th Edition: Prentice Hall Publishers

c. Magazines and Journals

1. Journal of Indian Society of Pedodontics

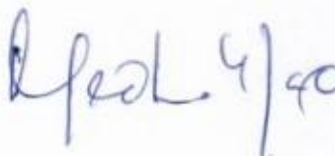
d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST


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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Introduction to Implantology
Course Code	BDE407A
Course Type	Professional Core Elective 1
Department	Prosthodontics and Crown & Bridge
Faculty	Dental Sciences

1. Course Summary

This course equips students to select patients, plan treatment and assist in the rehabilitation of single missing tooth with implant prosthesis. The students will be trained to educate patients about the advantages and importance of replacement with implants. The students will learn about selection of cases, diagnostic aids, treatment planning and maintenance protocols of single tooth replacements by implants.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Prosthodontics and Crown & Bridge
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Explain the role and significance of an implant in the replacement of missing teeth

CO-2. Communicate the importance of implant replacement to patients.

CO-3. Suggest appropriate diagnostic aids and investigations.

CO-4. Prepare the patient to receive an implant

4. Course Contents

Lesson No	Chapter	Lesson Topics
1	Introduction to implants and its components	Indications and brief historical review of dental implants, description of components and uses and advantages of implants, classification of implants.
2	Biology of Osseointegration	Healing of hard and soft tissues, basic principles of osseointegration, surgical anatomy of maxilla and mandible, various factors affecting osseointegration
3.	Diagnostic Aids	Selection of patients, diagnostic casts, radiographs, stents and other instruments used in the planning of implants along with introduction to implant software and digital radiography.
4	Examination, Diagnosis and Treatment Planning	Intraoral examination – soft and hard tissue examination, Investigation, diagnosis and treatment planning



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5	Instrumentation and sterilization	- Brief sterilization protocols, importance of asepsis and introduction to basic surgical instruments for osteotomy, instruments used for simple prosthodontic rehabilitation and implant maintenance.
6.	Prosthodontic rehabilitation	Outline of prosthodontic protocols including impression procedures, basics of implant loading, types of implant prosthesis based on retention and design, follow up and maintenance.
CLINICAL WORK		
1	Case history discussion with patient demonstration	
2	Interpretation of diagnostic casts and Radiography	
3	Sterilization and infection control practices	
4	Basic surgical protocols and instrumentation	
5	Patient preparation	
6	Observation of implant placement	
7	Observation of Prosthodontic protocols	
8	Maintenance and Follow up of Patients	

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2		2		2	2	2	1	1						2		
CO-3		2	3	2			1							2	1	
CO-4		2		2	2	2	1	1						2	1	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		60
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	60	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Others		30
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ►	SC1: Log Book	
Maximum Marks ►	50% Weightage	
CO-1	X	X
CO-2	X	
CO-3	X	
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

		Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Carl E. Misch (1st printed in 2008, reprinted in 2013), 3rd Mosby (an imprint of Elsevier)
3. Linkow (1990) Implant Dentistry Today, A Multi-disciplinary Approach (3 volumes), Piccin, Italy

b. Recommended Reading

1. Charles M. Weiss, Adam Weiss (2001), Principles and Practice of Implant Dentistry, 1st Mosby Publishers
2. Richard Palmer, Brian J. Smith, Leslie C. Howe, Paul J. Palmer (1st printed in 2002, reprinted in 2005), Implants in Clinical Dentistry
3. Charles A. Babbush (2001) Dental Implants: The Art and Science W.B. Saunders Company
4. Sargon Lazarof, Sumiya Hobo, Hassam Mowzari (1998), The Immediate Load Implant System Quintessence Publishing Co. Ltd., Tokyo
5. Ralph V. Mc. Kinney (1991), Endosteal Dental Implant, Mosby Year Book

c. Magazines and Journals

1. Journal of Indian Prosthodontic Society

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Basics of Fixed Partial Denture
Course Code	BDE408A
Course Type	Professional Core Elective 2
Department	Prosthodontics and Crown & Bridge
Faculty	Dental Sciences

1. Course Summary

This course equips students to select patients, plan treatment and assist in the rehabilitation of single missing tooth with implant prosthesis. The students will be trained to educate patients about the advantages and importance of replacement with implants. The students will learn about selection of cases, diagnostic aids, treatment planning and maintenance protocols of single tooth replacements by implants.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Prosthodontics and Crown & Bridge
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1.** Demonstrate pre- clinical steps for anterior and posterior single and multi- unit fixed prosthodontics
- CO-2.** Propose treatment plan to rehabilitate the partially edentulous patient using a multidisciplinary approach
- CO-3.** Demonstrate clinical steps for anterior and posterior single and multi-unit fixed prosthodontics
- CO-4.** Deliver the simple single and multi-unit FPDs to the patient

4. Course Contents

Lesson No	Chapter	Lesson Topics
1	Introduction to basics of fixed prosthodontics	i. Parts of FPD, Patient selection criteria and available materials and techniques to treat the partially edentulous patient
2	Principles of tooth preparation	i. Biologic
3		i. Mechanical
4		ii. Esthetic



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5	Abutment evaluation and selection	i.	Evaluation and treatment of abutment teeth
6		ii.	Selection of abutment teeth
7	Steps in Tooth preparation for single cast metal crown	i.	Advantages and Disadvantages Indications Contraindications Armamentarium and tooth preparation
8	Steps in Tooth preparation for partial veneer crowns	i.	Advantages and Disadvantages Indications Contraindications Armamentarium and tooth preparation
9		ii	Multi-unit bridge tooth preparations and Pier abutments
10	Steps in Tooth preparation for All ceramic crowns	i.	Advantages and Disadvantages Indications Contraindications Armamentarium and tooth preparation
11	Tissue management and impression making	i.	Gingival retraction
12		ii	Fluid control
13		iii	Impressions in FPD
14	Trouble-shooting in FPD	i	Management of clinical failures in FPD
15		ii	Management of Laboratory failures in FPD
PRE - CLINICAL WORK			
1	Tooth preparation on plaster models to show steps in preparation for anterior PFM crown		
2	Tooth preparation on plaster model to show steps in preparation for posterior cast metal crown		
3	Tooth preparation on mounted typhodont teeth for single unit anterior PFM crown		
4	Tooth preparation on mounted typhodont teeth for 3-unit posterior PFM crowns		
5	Tooth preparation on mounted typhodont teeth for single unit anterior All ceramic crown		
CLINICAL WORK			
6	Case history taking and abutment evaluation		
7	Tooth preparation of anterior tooth for single unit PFM restoration		
8	Tooth preparation of posterior tooth for single unit cast restoration		
9	Demonstration of gingival retraction procedure and impression procedures in FPD		
10	Assignment		

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3			2									3	2		
CO-2		2		2	1									2		
CO-3		2		2			1							2	1	
CO-4		2		2	1		2							2		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		60
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	60	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Contemporary Fixed Prosthodontics: Rosenstiel Stephen F. 2nd edition. Mosby.
3. Fundamentals of fixed prosthodontics: Herbert T. Shillingburg; Sumiya Hobo, 3rd edition. Quintessence books.
4. Dental laboratory procedures. In Fixed partial Dentures: Rhodes. Rudd and Murrow; volume II Mosby



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

b. Recommended Reading

1. Johnson's Modern Practice In Fixed Prosthodontics : Dykema Goodacre Phillips, 4th Edition; Saunders
2. M. Fradeani, G. Barducci Esthetic rehabilitation In Fixed Prosthodontics. volume 2
3. F. Bassi, S. Carossa, G. Gassino: Advances in Clinical Prosthodontics.

c. Magazines and Journals

1. Journal of Indian Prosthodontic Society

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Aesthetic Dentistry
Course Code	BDE409A
Course Type	Professional Core Elective 1
Department	Conservative Dentistry and Endodontics
Faculty	Dental Sciences

1. Course Summary

This Course aims to train students develop aesthetic protocols and perform simple esthetic procedures relevant to patient requirement.

The students will be trained on principles of aesthetics, assess patient requirements and perform direct anterior and posterior aesthetic restorations including tooth Whitening Procedures.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Conservative Dentistry and Endodontics
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Discuss the principles of aesthetic rehabilitation

CO-2. Explain Basic Concepts of Adhesion

CO-3. Demonstrate direct anterior and posterior aesthetic restorations on models

CO-4. Perform direct anterior and posterior aesthetic restorations and Tooth Whitening procedures on patients

4. Course Contents

Lesson No.	Chapter	Lesson topics
1.	Fundamentals of esthetics	Light and shadow, the principals of colour – hue, chroma, value, opacity, translucency, depth, Principle of form – illusion, law of face, alteration of face.
2.	Basic concept of adhesion, Enamel Adhesion, Dentin Adhesion	Development of dentin bonding systems, Types of esthetic restorative materials such as glass ionomers, composites, ceramics.
3.	Direct Anterior / Posterior composite restorations ,including veneer	Principles of tooth preparation

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4.	Discoloration of teeth	Principles of Management
Practicals		
1. Tooth Preparation for direct restorations on models		
Clinicals		
1. Performing esthetic restorations-Anterior/Posterior on patients		
2. Managing tooth discolorations on patients		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3		2	
CO-2	3												3		2	
CO-3				3								1		3	2	
CO-4		3						2				1		3	2	2

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		
1. Demonstration using Videos	00	10
2. Demonstration using Physical Models /Patients	10	
Practical Work		
Pre-Clinical laboratories/ Laboratory	00	60
Clinical Area – FDS	60	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	04	30
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105



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7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	
CO-2	X	
CO-3	X	
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment



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9. Course Resources

a. Essential Reading

1. Class Notes
2. Aschheim, K. and Dale, B. (2001). Esthetic dentistry. St. Louis: Mosby.
3. Freedman, G. (2012). Contemporary esthetic dentistry. St. Louis, Mo.: Mosby.
4. Goldstein, R. (1976). Esthetics in dentistry. Philadelphia: Lippincott.
5. Jordan, R. (1993). Esthetic composite bonding. St. Louis: Mosby-Year Book.
6. Paravina, R. and Powers, J. (2004). Esthetic color training in dentistry. St. Louis, Mo.: Elsevier Mosby.
7. Rufenacht, C. (2000). Principles of esthetic integration. Chicago: Quintessence Pub. Co.

b. Recommended Reading

1. Terry, D., Geller, W. (2013). Esthetic & restorative dentistry. Chicago: Quintessence Pub. Co.
2. Touati, B., Miara, P. and Nathanson, D. (1999). Esthetic dentistry and ceramic restorations. London: Martin Dunitz.

c. Magazines and Journals

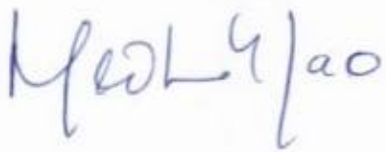
d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST


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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Practice Based Endodontics
Course Code	BDE410A
Course Type	Professional Core Elective 2
Department	Conservative Dentistry and Endodontics
Faculty	Dental Sciences

1. Course Summary

This Course aims to equip students with competencies in endodontics to manage irreversible diseases of the pulp related to anteriors and premolars.

The students will be trained on the fundamental concepts of endodontics including armamentarium, case selection, pain and infection management. They will be equipped to perform root canal instrumentation and obturation on premolars including post treatment follow up.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Conservative Dentistry and Endodontics
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss the fundamental concepts of endodontic instrumentation
- CO-2. Select endodontic instruments and materials for the given case
- CO-3. Demonstrate canal instrumentation and obturation on extracted premolar
- CO-4. Perform root canal treatment on patients while managing pain and infection

4. Course Contents

Lesson No	Chapter		Lesson Topics
1.	Root Canal Morphology	i	Common Canal configurations and variations in internal anatomy of anterior teeth and premolars
		ii	Apical third canal anatomy and its significance in endodontic therapy
2.	Access Cavity Preparation	i	Objectives of access cavity preparation, Guidelines to access cavity preparation, Concept of straight line access



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022


		ii	Armamentarium, basic outline shapes of access cavity for premolar, steps in access cavity preparation
3.	Introduction to rotary Endodontics	i	Introduction to Ni-Ti instruments, motions of instrumentation, armamentarium, rotary instruments commonly used, concept of greater taper files
		ii	Fundamental concepts of rotary endodontics, glide path, canal patency, guidelines to the usage of rotary endodontic instruments
4.	WL determination and Cleaning and shaping using rotary endodontics	i	Techniques of working length determination
		ii	Crown down technique, hybrid technique, orifice enlargement
		iii	Management of curved canals, pre-curving of files
5.	Obturation in Endodontics	i	Obturation Techniques
		ii	Recent advances
Pre-Clinical Work			
1	Endodontic Case history discussion		
2	Access Cavity Preparation on extracted teeth – anterior and premolars		
3	Rubber Dam Placement		
4	Working length techniques demonstration and performing on extracted teeth		
5	Hand instrumentation of root canals on extracted premolars		
6	Rotary instrumentation of root canals on extracted premolars		
7	Obturation of cleaned and shaped extracted teeth		
Clinical work			
1	Assisting and observation of endodontic cases		
2	Performing root canal treatment on patients		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	2												2			
CO-2				2									2	2	2	
CO-3				2										2	2	
CO-4		3	3	3			2	2				1		3	2	2
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution																



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6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		60
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	60	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	
CO-2	X	
CO-3	X	
CO-4	X	X
The details are presented in the Programme Specifications Document.		

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Grossman. L, Ollet. S and Del Rio. C (1988) Endodontic practice. 12th ed. Philadelphia: Lea & Febiger
3. Hargreaves K, Cohen. S and Berman. L (2011) Cohen's Pathways of the pulp. 6th ed St. Louis, Mo.: Mosby Elsevier.
4. John I. Ingle, Leif K. Bakland, J. Craig Baumgartner (2008) Ingle's Endodontics. 6th ed. Hamilton, ON: BC Decker.

b. Recommended Reading

1. Walton. R and Torabinejad, M (2009) Endodontics. St. Louis, Mo.: Saunders/Elsevier.
2. Gulabivala. K and Ng. Y. Endodontics. Elsevier Publications

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Practice Management
Course Code	BDE411A
Course Type	Professional Core Elective 1
Department	Public Health Dentistry
Faculty	Dental Sciences

1. Course Summary

This course equips students with skills and competencies essential to establish and manage private dental practice.

The students are trained on the considerations for choosing location, type and design of practice emphasizing on the engineering and esthetic aspects. They are trained on the strategies to be adopted for procuring equipment, inventory management, marketing and pricing. They are also trained on nuance of practice organization, patient and dental team management.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Public Health Dentistry
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

CO-1. Discuss the considerations for location, type and design for setting dental practice

CO-2. Discuss the facets of practice organization

CO-3. Suggest strategies for equipment and inventory management

CO-4. Suggest strategies for marketing and pricing in dental practice

4. Course Contents

Lesson	Chapter	Lesson Topic
1	Career options within dentistry	General dental practice, Specialist, Salaried practice, industry options, Navy, Army, within corporate body, Community dental practice, Academia, Hospital dentistry, Research
2	Tips on writing and building Curriculum Vitae	Formats, options, references
3	Tips on writing application and facing interview	Written communication skills and interview skills



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4	Dental Health Care Delivery System	Structure, location, types of practice and stake holders
5	Managerial areas in Private Practice Management	Equipment management, Inventory Management, Financial management, Infection control, staff management, marketing and pricing
6	Regulations for private practice	Registrations, MOU's, Certification requirements from Government, Private and Apex Body
7	Patient management skills	Skills to increase psychological accessibility with patients
8	Entrepreneurial aspects of dental practice	Practice building, business of practice, out of the box thinking for improving revenues

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1							3							1		
CO-2							3							1		
CO-3							3							1		
CO-4							3									1

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		60
Pre-Clinical laboratories/ Laboratory	15	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	15	
Outreach centres	30	
Advanced Learning Centre	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Projects	00	30
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations	05	
Total Duration in Hours	105	

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. George M. Gluck and Warren M. Morganstein(2002) Jong's community dental health, 5th edition
3. Burt BA & Eklund SE. (2005), Dental practice and community, 6th ed, New York. Elsevier.
4. Margaret Seward (1990), Into dental practice, British Dental Journal

b. Recommended Reading

1. F.J. Trevor Burke and Ruth Freeman (2004), Preparing for Dental Practice, 1st ed, Oxford University Press.
2. Fritz Schon (1972), Teamwork in the Dental Practice, Buch-und Zeitschriften-Verlag "Die Quintessenz", Berlin and Chicago.

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST


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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Data Management
Course Code	BDE412A
Course Type	Professional Core Elective 2
Department	Public Health Dentistry
Faculty	Dental Sciences

1. Course Summary

The aim of the course is to equip students to analyse data related to health care research using appropriate data analysis tools. The students will be trained to differentiate and analyse different types of data emphasizing on quantitative data. The students will also be trained to interpret the data and present choosing appropriate data presentation methods.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Public Health Dentistry
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Demonstrate proficiency in using data analysis tools
- CO-2. Select statistical tests relevant to type of data
- CO-3. Analyse the given data using statistical tools
- CO-4. Present the obtained data in appropriate presentation methods and interpret

4. Course Contents

Lesson No	Chapter		Lesson Topics
1	Introduction to Biostatistics	i	Uses and its application in dental health research
2	Data	i	Types and sources of data
3		ii	Scales of data measurement
4	Data collection methods	i	Research methodology including steps required before and after data collection
5		ii	Data collection methods-Qualitative, quantitative
		i	Data collection and management methods-Quantitative



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

7	Essentials before data analysis– Quantitative	ii	Use of MS excel, data cleaning
8		iii	Basics of data analysis using statistical software
9	Data analysis	i	Parametric data analysis
10		ii	Applications of non parametric data analysis
11		iii	Software in analyzing data
12		iv	Basics of data analysis using SPSS
13	Data presentation	i	Creating Charts
14		ii	Creating Graphs

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1											1				2	
CO-2											2				2	
CO-3											2				2	
CO-4									2						2	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		40
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients/Computer	40	
Practical Work		30
Pre-Clinical laboratories/ Laboratory		
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	30	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		30
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	15	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

		Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. NSN Rao, NS Murthy (2008) Applied Statistics in Health Sciences. 2nd Edition: JP Medical Publishers
3. Park K. (2017) Park text book of preventive and social medicine, 24th ed. Banarasidas Bhanot Publishers.
4. Research methodology: methods & techniques Kothari C.R., Gaurav Garg (2013) New Age International Publishers, 3rd edition ISBN-13: 978-8122436235

b. Recommended Reading

1. Jekel J.F., Katz D.L., Elmore J.G., Wild D.M.G. (2007) Epidemiology, Biostatistics and Preventive Medicine. 3rd ed. Saunders Elsevier publishers, Philadelphia.
2. Jay S. Kim, Ronald J. Dailey (2007) Biostatistics for Oral Healthcare, Wiley-Blackwell ISBN: 978-0-8138-2818-3

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST


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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Surgical Extraction
Course Code	BDE413A
Course Type	Professional Core Elective 1
Department	Oral & Maxillofacial Surgery
Faculty	Dental Sciences

1. Course Summary

The aim of the course is to equip the students with the competencies to manage surgical / open method of extraction.

The students will be trained to select and use the appropriate equipments and instruments required for surgical extraction, handle difficult extractions as well as gain exposure to surgical removal of partially or completely impacted teeth. They will also be trained to recognize, prevent and manage complications arising during and/ or after the procedure.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Oral & Maxillofacial Surgery
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss the indications and underlying principles in the surgical extraction of teeth.
- CO-2. Select cases for open extraction based on clinical and radiological assessment.
- CO-3. Demonstrate the techniques of surgical removal of teeth.
- CO-4. Manage the complications related to surgical removal of teeth.

4. Course Contents

Lesson No	Chapter	Lesson Topics
1.	Case history	1. Chief complaint 2. General Physical Examination 3. local examination 4. Investigations 5. Diagnosis
2.	Assessment of difficulty level of extraction.	1. Clinical assessment 2. Radiological assessment



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

3.	Surgical equipments	1. Micromotor and Surgical handpiece 2. Electrocautery. 3. Suction apparatus
4.	Surgical instruments	1. Extraction forceps and elevators. 2. Principles of elevators. 3. Surgical burs. 4. Chisel and Mallet 5. Suturing instruments and suture materials. 6. Principles of suturing
5.	Surgical procedure - Open method of tooth extraction	1. Indications and contraindications. 2. Types of incisions. 3. Various Flap designs. 4. Osteotomy procedure. 5. Odontectomy. 6. Haemostasis and haemostatic agents.
6.	Post operative care	1. Post operative instructions 2. Infection control. 3. Assessment and management of post operative complications
CLINICAL WORK		
1	Patient complete case history	
2	Instrument selection and its applications	
3	Patient and operator chair position – Ergonomics	
4	Different types of incision and Suturing techniques on models	
5	Demonstration of surgical removal of the teeth.	

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2		3												3		
CO-3				3			1							3		
CO-4		2		2		1	1								1	1
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution																



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6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		60
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	60	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		30
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	
CO-3	X	
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Peterson's Principles of oral and maxillofacial surgery-MilloreMicheal, G.E.Gholi, Peter E Larsen, 2nd edition, vol. 1 & 2, B.C.Decker Publishers
3. Oral and maxillofacial surgery-Daniel M.Laskin, vol.1&2, AITBS Publishers
4. Textbook of oral and maxillofacial surgery-George Kruger, 6th Edition, Mosby
5. Oral and maxillofacial surgery-W.Harry Archer,5th Edition, vol. 1 & 2, W.B.Saunders Company
6. Text book of oral and maxillofacial surgery-Neelima Mallik, 3rd edition, Jaypee brothers

b. Recommended Reading

1. Impacted teeth – John.F.Helferick, Charles C., Rocklin D Alling, W.B.Saunders Company
2. Handbook of Third Molar Surgery- George Dimitroulis, Wright Publishers

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Management of Medically Compromised Patients
Course Code	BDE414A
Course Type	Professional Core Elective 2
Department	Oral & Maxillofacial Surgery
Faculty	Dental Sciences

1. Course Summary

The aim of the course is to equip the students to manage medically compromised patients in dental practice. The students will be trained to recognize and manage systemic conditions and their implications on the proposed dental procedures that dentists might encounter in daily practice. They will also be trained to prevent potential complications.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Oral & Maxillofacial Surgery
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss the importance of case history in medically compromised patients.
- CO-2. Develop treatment protocols specific to each medically compromised condition.
- CO-3. Demonstrate the management of any given medically compromised patient.
- CO-4. Apply management protocols for dental treatment in medically compromised patients.

4. Course Contents

Chapter	Lesson Topics
Case History	Chief complaint, Medical history and investigations and classification of physical status
Diabetes Mellitus	Definition, Pathophysiology, and Classification of Diabetes Mellitus
	Normal Blood Sugar levels, preoperative investigations, Intra and postoperative management, Complications.
Renal Diseases	Introduction, Pathophysiology
	Preoperative Investigations, Intra and Postoperative Management
Antiplatelet and Anticoagulants	Introductions, Indications, Oral antiplatelet and anticoagulant drugs
	Protocols for treating the patients on blood thinners
	Preoperative investigations, Intra and Postoperative Management
Cardiovascular Diseases	Introduction, Classification of physical status, stress reduction protocols, investigations, Intra and postoperative Management

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3												3			
CO-2		3		2	1									3		
CO-3		3		2	1		1							3		
CO-4		3		2	1		1							3	1	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		60
Pre-Clinical laboratories/ Laboratory	00	
Clinical Area – FDS	30	
Workplace based assessment methods	00	
Hospital Setup – MSRHS	30	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the Cos. In either component (CE or Posting End Exam) or subcomponent of CE. Cos are assessed as illustrated in the following Table.



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Cawsen and Scully (2005), Medical Problems in Dentistry. Elsevier Churchill Living stone Limited 2005, UK
3. Stanley Malamed (2014), Medical Emergencies in Dental Office 7th Edition, Elsevier
4. Neelima Anil Malik (2016), Textbook of Oral and Maxillofacial Surgery, Jaypee
5. Geoffrey Leslie Howe. (1990). The Extraction of Teeth. 2nd Ed. John Wright.
6. Daniel M. Laskin (1985). Oral and Maxillofacial Surgery Vol 1 & 2. 2nd Ed, Mosby.

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7. Gustav O. Kruger (1979) Textbook of Oral and Maxillofacial Surgery .

b. Recommended Reading

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Orthodontics for General Practice
Course Code	BDE415A
Course Type	Professional Core Elective 1
Department	Orthodontics & Dentofacial Orthopedics
Faculty	Dental Sciences

1. Course Summary

This course aims to train the students to assess the case for orthodontic diagnosis, basic treatment planning and provide supplementary support to the orthodontist for successful orthodontic care.

The students will be trained to obtain complete case history and advise relevant investigation to arrive at orthodontic diagnosis. They will be trained to provide supplementary dental treatment prior to orthodontic therapy. They will be trained to assist the orthodontist and provide supportive care during orthodontic treatment. They will also be trained to be an intermediary between the patient and the orthodontist.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Orthodontics & Dentofacial Orthopedics
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss the importance of case history, investigations in arriving at orthodontic diagnosis
- CO-2. Interpret the case history and investigation for orthodontic referral
- CO-3. Counsel patients for receiving Orthodontic treatment
- CO-4. Perform preliminary dental care prior to orthodontic therapy

4. Course Contents

Lesson No	Chapter		Lesson Topics
1	Diagnosis and treatment planning in General orthodontics	i	Definition and scope of General Orthodontics Dentistry
2	Selection of the Patient	i	Importance of case history, personal history with general examination and extra oral examination
		ii	Intraoral examination – soft and hard tissue examination, Investigation, diagnosis and treatment planning
3	Behaviour management	i	Case History recording in Orthodontic Practice
		i	Diagnostic Records in Orthodontic practice

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4	General orthodontic Dentistry	i	Cephalometrics Records in Orthodontic practice
5	General Orthodontic Dentistry	i	Informed consent
		ii	Essential Diagnostic Aids
		iii	Supplementary Diagnostic Aids
6	Infection control	i	Infection control in General orthodontic Dentistry
CLINICAL WORK			
1	Case history discussion with patient demonstration		
2	Essential Diagnostic Aids		
3	Supplementary Diagnostic Aids		
4	Impression taking in Orthodontic patient		
5	Fabrication of study models of patients		
6	Cephalometric tracing of Patients		
7	Observation and Assisting in Photographic Records		
8	Case History Recording		
9	Case presentation		
10	Assignment		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1		3	3	2										3		
CO-2			3		3	2	2		1			1		3		
CO-3						3								2		3
CO-4		3		3	2				2					2	2	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		60
Pre-Clinical laboratories/ Laboratory	20	
Clinical Area – FDS	40	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	04	30
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	
CO-2	X	X
CO-3	X	
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

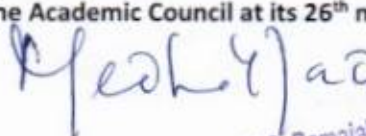
8. Achieving COs


The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

Sl. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment

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7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Graber TM (2000) Orthodontics: Current principles and technique. 3rd Edition, Mosby publishers.
3. Proffit William R (2000) Contemporary Orthodontics. 2nd Edition, Mosby publishers.
4. White T C, Gardiner J H, Leikton BC (1976) Orthodontics for dental students. 3rd Edition, Mac Millan India.
5. Adams C P, John S Kerr W (1990) Removable Orthodontic Appliances. 6th Edition, Varghese Pub House.
6. Houston W.J (1992). A textbook of Orthodontics. 2nd Edition, Wright Pub.

b. Recommended Reading

1. Moyers Robert E (1988) Handbook of Orthodontics. 4th Edition, Yearbook of medical publication
2. Graber, Vanarsdall and Vig : Orthodontics Current Principles and Techniques. 5th Edition: Elsevier Publishers.

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Preventive Orthodontics
Course Code	BDE416A
Course Type	Professional Core Elective 2
Department	Orthodontics & Dentofacial Orthopedics
Faculty	Dental Sciences

1. Course Summary

This course intends to equip the students with knowledge in early preventive approach to different orthodontic anomalies. Students are taught a thorough diagnosis and treatment planning based on overall analysis of patient's condition.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Orthodontics & Dentofacial Orthopedics
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Explain the need, significance of preventive orthodontic therapy
- CO-2. Identify clinical and radiographic indicators for early orthodontic treatment
- CO-3. Choose from various preventive procedures depending on the requirement of the case.
- CO-4. Design an appliance for space maintenance in case of early loss of deciduous teeth and justify the choice of appliance for space maintenance

4. Course Contents

Lesson No	Chapter		Lesson Topics
1.	Introduction	i.	Need for Preventive Orthodontics
2.	Early diagnosis	i	Clinical indicators
		ii	Radiographic indicators
		iii	Study models.
3.	Preventive Orthodontic procedures	i	Predental procedure Parent education Oral hygiene, Caries prevention,
		ii	Monitoring of primary dentition and transition stage
		iii	Removal of supernumerary tooth Extraction of retained deciduous tooth
		iv	Restoration of decayed teeth



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

		v	Occlusal Equilibration
		vi	Early detection of habits
		iii.	Tongue tie management
		viii	Disking
		ix	Locked permanent first molar
4.	Space control in Deciduous and mixed dentition	i	Definition, Planning for space maintainers, Space maintenance in maxillary and mandibular arch, Space maintenance in buccal segments
5.	Space Maintaining Appliance	i.	Indications, Classification Prerequisites for space maintainers Choice of space maintainers and fabrication.
		ii	Choice of space maintainers and fabrication.
PRE - CLINICAL WORK			
1	Fabrication of functional space maintainer on working model		
2	Fabrication of Distal shoe space maintainer on working model		
3	Fabrication of Transpalatal arch in the maxillary cast.		
4	Fabrication of Lingual arch in the mandibular cast.		
5	Fabrication of one habit breaking appliance.		
CLINICAL WORK			
1	Case history taking and radiographic evaluation of mixed dentition in transition phase.		
2	Impression making		
3	Fabrication and delivery of space maintainer.		
4	Assignment		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	2	2		3		2							3	3		
CO-2		2	2	2									2	2		
CO-3				3										3		
CO-4		2	2	3	3									2		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		10
1. Demonstration using Videos	00	



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

2. Demonstration using Physical Models /Patients	10	
Practical Work		
Pre-Clinical laboratories/ Laboratory	20	60
Clinical Area – FDS	40	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	04	30
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE. COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Graber TM (2000) Orthodontics: Current principles and technique. 3rd Edition, Mosby publishers.
3. Proffit William R (2000) Contemporary Orthodontics. 2nd Edition, Mosby publishers.
4. White T C, Gardiner J H, Leikton BC (1976) Orthodontics for dental student. 3rd Edition, Mac Millan India.
5. Adams C P, John S Kerr W (1990) Removable Orthodontic Appliances. 6th Edition, Varghese Pub House.
6. Houston W.J (1992). A textbook of Orthodontics. 2nd Edition, Wright Pub.

b. Recommended Reading

1. Moyers Robert E (1988) Handbook of Orthodontics. 4th Edition, Yearbook of medical publication
2. Graber, Vanarsdall and Vig : Orthodontics Current Principles and Techniques. 5th Edition: Elsevier Publishers.

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
2. EBSCO HOST

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Routine Tissue Processing
Course Code	BDE417A
Course Type	Professional Core Elective 1
Department	Oral & Maxillofacial Pathology and Oral Microbiology
Faculty	Dental Sciences

1. Course Summary

The aim of the course is to train the students in the field of routine tissue processing. The students will be trained in the techniques of routine tissue processing and staining for further examination of tissue under microscope. The student will be trained to perform various methods of tissue processing.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Oral & Maxillofacial Pathology and Oral Microbiology
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Explain the various methods of tissue processing
- CO-2. Prepare tissue sample for microscopic analysis and interpretation
- CO-3. Perform an appropriate staining technique for studying biological tissue specimens for microscopic study
- CO-4. Suggest remedies for troubleshooters during tissue processing

4. Course Contents

Lesson No	Chapter	Lesson Topics
1	Introduction to routine tissue processing	Terminologies, definition and significance of tissue processing
2	Collection of samples	Ideal protocol of sample collection
3	Fixation	Definition, ideal properties of fixation, Factors affecting fixation, Classification of fixatives and principle of individual fixatives, advantages and disadvantages.
4	Tissue processing	Definition and types of tissue processing, Steps involved in the tissue processing
5	Dehydration	Definition, ideal properties, classification of dehydrating agents and principle

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6	Clearing	Definition, ideal properties, classification of clearing agents and principle of individual agents
7	Embedding	Definition, ideal properties, classification of embedding medias
8	Sectioning & Staining	Microtome sectioning, Hematoxylin & Eosin staining procedure
9	Artefacts in routine tissue processing and their remedies	Prefixation, fixation, processing & staining artefacts
CLINICAL/ LABORATORY WORK		
1	Perform fixation of three biopsied tissues	
2	Perform routine tissue processing of three biopsied specimens	
3	Perform sectioning of the processed tissue and stain with H&E stain	
4	Microscopic analysis of the tissue specimen	

5. Course Map (CO-PO-PSO Map)

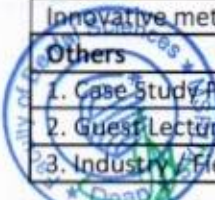
	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	2	2	2										2			
CO-2		2	2											2		
CO-3		2	2											1		
CO-4			2											1		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	00
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		60
Pre-Clinical laboratories/ Laboratory	60	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		30
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry /Field Visit/School Visit	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X
The details are presented in the Programme Specifications Document.		

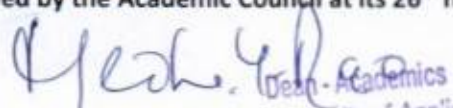
The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

		Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Bancroft JD, Gamble M. (2008) Theory and Practice of Histological Techniques, 6th ed, USA: Churchill Livingstone
3. Culling CFA, Allison RT, Barr WT. 1985 Cellular pathology techniques, 4th edition, Butterworths and co publishers

b. Recommended Reading

1. Culling CFA, Allison RT, Barr WT. (1985) Handbook of histopathological and histochemical techniques, 4th ed, Butterworths and co publishers.
2. Freida LC, Christa H. 2009 Histotechnology: A Self-Instructional Text (3rd Edition) College of American Pathologists.
3. Jamie M. Nowacek, BS, HT. Dako Laboratory manual.
4. Carleton, H.M., Drury, R.A.B. and Wallington, E.A., 1980. *Carleton's histological technique*. Oxford University Press, USA.
5. Kumar, K., Shetty, D.C. and Dua, M., 2012. Biopsy and tissue processing artifacts in oral mucosal tissues. *Int J Head Neck Surg*, 3, pp.92-98.
6. Luna, L.G., 1992. Histopathologic methods and color atlas of special stains and tissue artifacts. Amer Histolabs Pub Dept.
7. Spurlock, B.O., Kattine, V.C. and Freeman, J.A., 1963. Technical modifications in Maraglas embedding. *The Journal of cell biology*, 17(1), pp.203-207.
8. Wynnchuk, M., 2013. Minimizing artifacts in tissue processing: Part 2. Theory of tissue processing. *Journal of Histotechnology*

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Title	Exfoliative Cytology in Pathologic Diagnosis
Course Code	BDE418A
Course Type	Professional Core Elective 2
Department	Oral & Maxillofacial Pathology and Oral Microbiology
Faculty	Dental Sciences

1. Course Summary

This Course deals with the application of exfoliative cytology in the diagnosis of oral pathologic lesions. The students will be trained on the principles and procedures of exfoliative cytology. They will also be trained to perform exfoliative cytology and use appropriate staining procedures in diagnostic cytopathology.

2. Course Size and Credits

Number of Credits	04
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Oral & Maxillofacial Pathology and Oral Microbiology
Total Course Marks	Component 1: 50% weightage Component 2: 50% weightage
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Explain the principles of exfoliative cytology and their diagnostic applications
- CO-2. Prepare cytological smears for oral pathological lesions
- CO-3. Perform appropriate special staining procedure for diagnosis
- CO-4. Interpret and diagnose the underlying pathologic condition

4. Course Contents

Lesson No	Chapter	Lesson Topics
1	Introduction To Cytopathology	Historical evolution, Classification, Principles of cytology
2	Exfoliative cytology	Rationale, Advantages, disadvantages, uses, limitations, indications and contraindications
3	Diagnostic Cytopathology	Applications/ Role in Oral Pathology
4	Cytopreparatory techniques	Collection, Preparation, Staining and Interpretation of cytologic smears
5	Collection	Armamentarium, Fixation and fixatives used, Sampling devices and their types
6	Preparation of smear	Methods and procedure, causes for unsatisfactory smears



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

7	Staining	Types of stains- Hematoxylin and eosin, Papanicolaou, May-Grunwald-Giemsa (MGG), Periodic Acid Schiff (PAS) Principles and Steps involved
8	Interpretation and Diagnosis	Classification of cells, Qualitative and quantitative assessment
9	Troubleshooters in exfoliative cytology	Artefacts, Causes and remedies
CLINICAL/ LABORATORY WORK		
1	Selection of case for exfoliative cytology	
2	Sterilization and infection control practices	
3	Preparation of cytological smear	
4	Fixation protocol	
5	Selection of appropriate stain indicated for the case	
6	Staining protocol	
7	Interpretation of the findings	
8	Diagnosis	

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3	2											3	2		
CO-2		2	3	2			1							3		
CO-3		2	3	2										3		
CO-4		2	3	2			2							3		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures	00	
Demonstrations		10
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	10	
Practical Work		60
Pre-Clinical laboratories/ Laboratory	30	
Clinical Area – FDS	30	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		30

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit/School Visit	00	
4. Brain Storming Sessions/ Assignments	15	
5. Group Discussions	11	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		05
Total Duration in Hours		105

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Assignment/ Case Presentation (50% Weightage)
Subcomponent ▶	SC1: Log Book	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Class Notes
2. Koss, L.G., Melamed, M.R. (2005) Koss' diagnostic cytology, Koss LG, Melamed MR, editors, pp282-394.
3. Rickles, N.H. (1972) Oral exfoliative cytology: an adjunct to biopsy, CA: a cancer journal for clinicians, 22(3), pp163-171.
4. Vitanov, S., Dimitrov, D. and Bochukov, A.(1995) Manual of cytology and histology with histological techniques, Zemizdat, Sofia, 3rd ed, Bulgaria.

b. Recommended Reading

1. Bansal, C., Handa, U., Mohan, H. (2011) Fine needle aspiration cytology of pilomatrixoma. Journal of cytology/Indian Academy of Cytologists, 28(1), p 1.
2. Patel, P.V., Kumar, S., Kumar, V., Vidya, G.D. (2011) Quantitative cytomorphometric analysis of exfoliated normal gingival cells, Journal of Cytology/Indian Academy of Cytologists, 28(2), p 66.
3. Pektaş, Z.Ö., Keskin, A., Günhan, Ö., Karslıoğlu, Y. (2006) Evaluation of nuclear morphometry and DNA ploidy status for detection of malignant and premalignant oral lesions: quantitative cytologic assessment and review of methods for cytomorphometric measurements, Journal of oral and maxillofacial surgery, 64(4), pp 628-635.
4. Prasad, H., Ramesh, V., Balamurali, P.D. (2010) Morphologic and cytomorphometric analysis of exfoliated buccal mucosal cells in diabetes patients, Journal of cytology/Indian Academy of Cytologists, 27(4), p 113.
5. Reginald, A., Sivapathasundharam, B. (2010) Oral hairy leukoplakia: an exfoliative cytology study, Contemporary clinical dentistry, 1(1), p 10.
6. Yang, L. (2006) Incidence and mortality of gastric cancer in China, World journal of gastroenterology: WJG, 12(1), p17.

c. Magazines and Journals

d. Websites

1. www.pubmed.com

e. Other Electronic Resources

1. HELINET
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Course Specifications: UG Group Research

Course Title	UG Group Research
Course Code	BDR301A
Course Type	Research
Department	Respective Department
Faculty	Dental Sciences

1. Course Summary

The aim of this course is to give students an experience of conducting research / design the project, understand the process, and perform basic data collection.

Students are trained to use software for data entry and also analyze the data for descriptive statistics basic inferential statistics. Students are also trained to interpret the data, draw conclusions and develop technical report. The students are expected to work in a team of not more than 4 members and are required to present the findings in an appropriate forum. Students can choose a project from the priority areas of research of the Faculty.

2. Course Size and Credits

Number of credits	08
Total hours of class room interaction	30 hours
Number of practical hours	270 hours
Total number of hours for the team of 4 members	The size of the problem to be solved / research to be conducted must be in commensurate with the total number of hours available with the team
Department Responsible	Respective departments
Total Course Marks	Total Marks: 100 Component 1(CE): Presentation/ Demonstration, Abstract Submission: 50% Weight Component 2: Technical Report: 50% Weight
Pass Criterion	A minimum of 50% marks in component 1 and 2 are required to earn credits.
Attendance Requirement	85% attendance is mandatory to be eligible for examination

3. Course Outcomes (CO)

After undergoing this Course, the student will be able to

CO-1 Recognize the need for conducting the research project through an organized survey of literature

CO-2 Describe the methodological steps to be adopted for the research project

CO-3 Execute the research project

CO-4 Write a technical report and prepare a poster as per the given specifications



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

CO-5 Present the research project in an appropriate forum

4. Course Contents

- a. Importance of literature search, Types of literature, use of search engines, use of literature management systems, Constituents of Good Literature Review, Strategies for Literature Search, Referencing, Paraphrasing, and Summarizing Academic Standards and Ethics
- b. Research and Research Methodology: Types of research, Study designs, formulation of hypothesis, selection/ developing study tools and its validation, methods of data collection, standardization and calibration, study population, variables, scales of measurements,
- c. Sampling, sample size, sampling methodologies, Need for adequate sample, sampling errors
- d. Software tools: MS Office (Excel, Word, Power Point, Publisher) SPSS, Mendeley
- e. Biostatistics: Tabulation and presentation of Data, Statistical Methods and Data Analysis- Descriptive statistics(mean, mode, median, standard deviation, range), Probability and Standard Distributions, Inferential Statistics- Test of significance, Kappa statistics
- f. Technical communication, report writing, Guidelines for preparing scientific poster
- g. Effective Presentation – Preparation, Templates, Balance between Good Design and Good Content, Planning and Sequencing, PAMPERS (Projection, Articulation, Modulation, Punctuation, Enunciation, Repetition and Speed) rule, PEOPLE (Position & Gestures, Eye Contact, Orientation, Proximation, Looks & Appearance, and Expressions & Emotion) rule,
- h. 4P's Rule (Plan, Prepare, Practice and Present), Essentials of Effectiveness, Effective Pausing.

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1											3	1			2	
CO-2											3	1			2	
CO-3											3	1			2	
CO-4										3		1			2	
CO-5										3		1			2	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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6. Course Teaching and Learning Methods

Teaching and Learning Methods		Duration in Hours
Classroom Interaction		
1. Face to Face Lectures	25	30
2. Seminars, Journal clubs, IDM	-	
3. Guest Lecture	05	
4. Brain Storming Sessions / Group Discussions / Discussing Possible Innovations	-	
5. Case study presentation	--	
Demonstrations		
1. Demonstration using Videos	--	260
2. Demonstration using Physical Models/Systems	--	
3. Demonstration on a Computer	10	
Practical Work		
1. Literature search	10	
2. Developing research protocol	40	
3. Study tool development and validation	40	
4. Data collection	50	
5. Data analysis and interpretation	30	
6. Writing report and preparing poster	50	
7. Information Centre	30	
Term Tests, Laboratory Examination/Written Examination, Presentations		10
Total Duration in Hours		300

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Posting End Exam) or subcomponent of CE, COs are assessed as illustrated in the following Table.



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of COs on each Component or Subcomponent of Evaluation		
	Component 1: CE (50% Weightage)	Component 2: Technical Report (50% Weightage)
Subcomponent ▶	SC1: Demonstration/ Poster Presentation, Abstract submission	
Maximum Marks ▶	50% Weightage	
CO-1	X	X
CO-2	X	X
CO-3	X	X
CO-4	X	X
CO-5	X	X
The details are presented in the Programme Specifications Document.		

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving Learning Outcomes

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

Sl.No	Curriculum and Capabilities Skills	How imparted during the Course
1.	Knowledge	Class room lectures, Guest Lecture, Information centre, Project work
2.	Understanding	Class room lectures, Guest Lecture, Information centre, Project work
3.	Critical Skills	Class room lectures, Guest Lecture, Information centre, Project work
4.	Analytical Skills	Class room lectures, Guest Lecture, Information centre, Project work
5.	Problem Solving Skills	Class room lectures, Guest Lecture, Information centre, Project work
6.	Practical Skills	Project work
7.	Group Work	Project work , Assignment
8.	Self-Learning	Assignment, Information centre, Project work
9.	Written Communication Skills	Technical Report
10.	Verbal Communication Skills	Project Presentation, Interaction during project work
11.	Presentation Skills	Project Presentation
12.	Behavioural Skills	Project work
13.	Information Management	Project work
14.	Personal Management	Project work
15.	Leadership Skills	Project work



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9. Course Resources

a. Essential Reading

Presentations made by the Head of the Department on "Importance of Project work and The Methodology to be followed for successful Completion of Project work"

b. Recommended Reading

1. Park K. (2014) Park textbook of Preventive and Social Medicine, 22nd ed. Banarasidas Bhanot Publishers.
2. J.H Abramson. Survey and methods in community Medicine, 6th ed. Wiley Publications
3. Health Research Methodology: a guide for training in research methods (western pacific education in action series no.5) by WHO, 2001, World Health Organization 2nd edition ISBN-10: 929061157X, ISBN-13: 978-9290611578.
4. Research Methodology: methods & techniques Kothari C.R., Gaurav Garg 2013, New Age International Publishers, 3rd edition ISBN-13: 978-8122436235.
5. Oral health surveys basic methods by WHO, 2013, 5th edition World Health Organisation ISBN: 978 92 4 154864 9.
6. Thinking of a poster as an "illustrated abstract" (Hess and Liegel, 2004
7. Durai R and Venkatraman R (2005) How to prepare a good poster. Hospital Doctor, 19 May, p38;
8. Hess G and Liegel L (2004) Creating Effective Poster Presentations.
9. <http://www.ncsu.edu/project/posters> (accessed 02 June 2004);
10. Nicol A A M and Pexman P M (2003). Displaying Your Findings: a practical guide for creating figures, posters and presentations. Washington DC: American Psychological Association.
11. AMEE guide number 40

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Course Specifications: Ability Enhancement Compulsory Course

Course Title	Law for Dental Professionals
Course Code	BDF101A
Course Type	Ability Enhancement Compulsory Course
Department	School of Law
Faculty	Dental Sciences

1. Course Summary

This Course creates awareness regarding ethical and professional behaviour in both clinical and societal setups while keeping in mind the legal aspects of their behaviour. The students are taught to identify various situations that may present an ethical dilemma in everyday clinical life and act in a professional manner. The students are also trained to understand the legal system in India and its functioning especially in relation to medicolegal situations.

2. Course Size and Credits

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	School of Law
Total Course Marks	20
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe the structure and functioning of legal system of India
- CO-2. Differentiate between various laws relevant to dentistry
- CO-3. Identify clinical situations that pose ethical dilemma to be resolved with sound ethical principles
- CO-4. Apply principles of professionalism in the practice of dentistry
- CO-5. Communicate effectively with patients, colleagues and public to instill a positive dental attitude
- CO-6. Prepare plan of action in case of litigation against the doctor.



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4. Course Contents

1	Introduction to Constitution of India		
2	Laws relevant to dentistry	i	Civil, criminal laws and code of procedure
		li	Laws relevant to consent
		lii	Laws relevant to care
		lv	Laws relevant to confidentiality
		V	Consumer protection act
3	Ethics and code of conduct in dentistry	I	In clinical scenario
		li	In research
4	Professionalism in dentistry		Concept and principles of professionalism
5	Communicating effectively		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1							1									1
CO-2							1									1
CO-3							2	3								3
CO-4							3									3
CO-5						2	2	3								3
CO-6							2									2

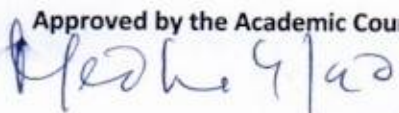
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures		10
Demonstrations		00
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	00	
Practical Work		00
Pre-Clinical laboratories	00	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		04
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	00	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		01
Total Duration in Hours		15

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Presentation) or subcomponent of CE, COs are assessed as illustrated in the following Table.

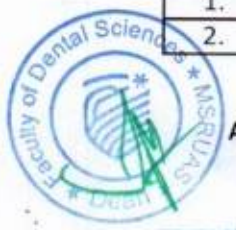
Focus of COs on each Component or Subcomponent of Evaluation	
	Component 1: CE (100% Weightage)
Subcomponent ▶	SC1: CE
Maximum Marks ▶	20
CO-1	X
CO-2	X
CO-3	X
CO-4	X
CO-5	X
CO-6	X
The details are presented in the Programme Specifications Document.	

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the semester. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Course notes
2. Paul G. Medical Law for the Dental Surgeons. 1st Ed., Jaypee Publishers.

b. Recommended Reading

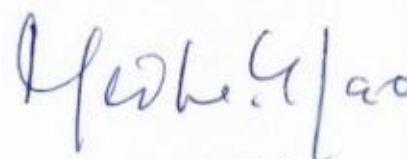
c. Magazines and Journals

d. Websites

e. Other Electronic Resources



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications: Ability Enhancement Compulsory Course

Course Title	Basic Life Support
Course Code	BDF201A
Course Type	Ability Enhancement Compulsory Course
Department	Oral & Maxillofacial Surgery
Faculty	Dental Sciences

1. Course Summary

This Course aims to educate health care work force to provide emergency life support, cardiopulmonary resuscitation and the use of automatic external defibrillator in adults, children and infants as applicable. The student also learns the basics of airway management, relief of choking, use of adjuvant for rescue breathing for adult, child and infants.

2. Course Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	1:0:3
Total Hours of Interaction	30
Number of Weeks in a term	20
Department Responsible	Oral & Maxillofacial Surgery
Total Course Marks	20
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Describe and demonstrate effective cardio pulmonary resuscitation with automatic external defibrillator use for adults and children with 1 rescuer and 2 rescuers.
- CO-2. Describe and demonstrate effective cardio pulmonary resuscitation for infants with 1 rescuer and 2 rescuers.
- CO-3. Differentiate between adult, child and infant rescue techniques.
- CO-4. Demonstrate rescue breathing for adult, child and infant
- CO-5. Demonstrate bag mask technique for adult, child and infant
- CO-6. Demonstrate relief of choking for adult, child and infant

4. Course Contents

	Topic		Lesson Topics
1	Cardio pulmonary resuscitation with automatic External Defibrillator use for adults with 1 rescuer	i	Signs and symptoms
2		ii	Steps of CPR and demonstration
3		iii	Steps of CPR and demonstration
4		iv	Steps of AED use and demonstration
5		v	Steps of AED use and demonstration

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6	Cardio pulmonary resuscitation with automatic External Defibrillator use for adults with 2 rescuers	i	Signs and symptoms
7		ii	Steps of CPR and demonstration
8		iii	Steps of CPR and demonstration
9		iv	Steps of AED use and demonstration
10		v	Steps of AED use and demonstration
11	Cardio pulmonary resuscitation with automatic External Defibrillator use for children with 1 and 2 rescuers	i	Signs and symptoms
12		ii	Steps of CPR with 1 rescuer
13		iii	Steps of CPR with 2 rescuer.
14		iv	Steps of CPR and AED demonstration with 2 rescuer
15	Differences between adult, child and infant techniques	i	Differences between adult, child and infant techniques
16		ii	Demonstration
17	Assessment		
18	Rescue breathing for adults	i	Signs and symptoms, causes
19		ii	Demonstration and Methods of rescue
20	Rescue breathing for children	i	Signs and symptoms, causes, methods
21	Rescue breathing for infants	i	Signs and symptoms, causes, methods
22	Bag mask technique for Adults	i	Rationale and method of use
23		ii	Demonstration
24	Bag mask technique for Children	i	Rationale and method of use and demonstration.
25	Bag mask technique for Infants	i	Rationale and method of use and demonstration.
26	Relief of choking for adults	i	Signs and symptoms, causes
27		ii	Demonstration and Methods of rescue
28	Relief of choking for children	i	Signs and symptoms, causes, methods
29	Relief of choking for infants	i	Signs and symptoms, causes, methods
30	Assessment		

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	2		2	1	1	1	1					1	2	2	1	
CO-2	2		2	1	1	1	1					1	2	2	1	
CO-3			2	1	1	1	1					1		2		
CO-4			2	1	1	1	1					1		2		
CO-5			2	1	1	1	1					1		2		
CO-6			2	1	1	1	1					1		2		

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures		05
Demonstrations		23
1. Demonstration using Videos	03	
2. Demonstration using Physical Models /Patients	20	
Practical Work		00
Pre-Clinical laboratories	00	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		00
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	00	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		02
Total Duration in Hours		30

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Presentation) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation	
	Component 1: CE (100% Weightage)
Subcomponent ▶	SC1: CE
Maximum Marks ▶	20
CO-1	X
CO-2	X
CO-3	X
CO-4	X
CO-5	X
CO-6	X
The details are presented in the Programme Specifications Document.	



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the semester. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

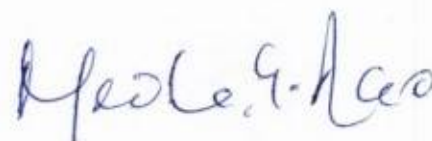
1. Course notes
2. Emergency Response Manual

b. Recommended Reading

c. Magazines and Journals

d. Websites

e. Other Electronic Resources



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Course Specifications: Ability Enhancement Compulsory Course

Course Title	Patient Safety Curriculum
Course Code	BDF301A
Course Type	Ability Enhancement Compulsory Course
Department	Oral & Maxillofacial Surgery
Faculty	Dental Sciences

1. Course Summary

This Course aims to educate health care work force to practice patient centered care in any given situation. The focus is on multi professional perspective that encompasses communication error, medication safety, surgical safety, machine safety and infection control and prevention. The students are equipped with knowledge and skills that will prepare them for safer practice.

2. Course Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	Oral & Maxillofacial Surgery
Total Course Marks	20
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Communicate effectively with patients and Dental Health Care Personnel and to respond to patients using non scholastic soft skills (verbal and non-verbal cues) including adverse events
- CO-2. Elicit proper case history before administering any drug and handle the situation in case of adverse drug reaction.
- CO-3. Identify the possible causes of machine errors and avoid them
- CO-4. Identify medical emergencies and manage these complications
- CO-5. Apply principles of Infection control while providing care
- CO-6. Segregate dental health care waste into appropriate bins

4. Course Contents

	Topic		Lesson Topics
1	Communication errors	i	Building rapport
2		ii	Verbal and nonverbal communication
3			Breaking bad news to patient
3	Medication error	i	Drugs in dentistry
4		ii	Adverse reactions



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

5		iii	Writing prescription
6	Surgical Safety	i	Preoperative and postoperative
7		ii	Patient care during surgery
8		iii	Identify and manage medical emergencies
9	Machine safety	i	Identify machining errors
10		ii	How to prevent these errors.
11	Infection prevention and control	i	Hand hygiene
12		ii	Clinical contact surface area disinfection
13		iii	Immunization and management of needle prick injury
14		iv	Dental Health care waste management

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)				
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4	
CO-1						2	2	1									2
CO-2		2					2							2	1		
CO-3							2								2		
CO-4	2			2	1		1						2	1			
CO-5							3						2	1			
CO-6							3						2	1			

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures		09
Demonstrations		00
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	00	
Practical Work		05
Pre-Clinical laboratories	00	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	05	
Others		00
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit	00	

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

4. Brain Storming Sessions	00	
5. Group Discussions	00	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		01
Total Duration in Hours		15

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Presentation) or subcomponent of CE, COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation	
	Component 1: CE (100% Weightage)
Subcomponent ▶	SC1: CE
Maximum Marks ▶	20
CO-1	X
CO-2	X
CO-3	X
CO-4	X
CO-5	X
CO-6	X
The details are presented in the Programme Specifications Document.	

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the semester. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical



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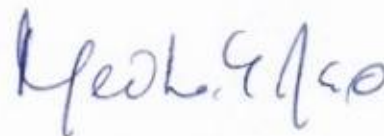
		Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

- a. Essential Reading
 - 1. Course notes
 - 2. Patient Safety Manual
- b. Recommended Reading
- c. Magazines and Journals
- d. Websites
- e. Other Electronic Resources



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Course Specifications: Ability Enhancement Compulsory Course

Course Title	Community Orientation Programme
Course Code	BDF302A
Course Type	Ability Enhancement Compulsory Course
Department	Public Health Dentistry
Faculty	Dental Sciences

1. Course Summary

This Course aims to educate health care work force to practice patient centered care in any given situation. The focus is on multi professional perspective that encompasses communication error, medication safety, surgical safety, machine safety and infection control and prevention. The students are equipped with knowledge and skills that will prepare them for safer practice.

2. Course Size and Credits:

Number of Credits	5
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	150
Number of Weeks in a term	20
Department Responsible	Public Health Dentistry
Total Course Marks	20
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss significance of societal relevance and compassionate attitude in health care profession
- CO-2. Identify determinants of health and disease in different community settings
- CO-3. Describe health care delivery systems
- CO-4. Communicate effectively with stake holders
- CO-5. Conduct survey to collect data and analyse it for planning collaborative community health programs
- CO-6. Recognise and acknowledge cooperation extended by the community towards the learning experience

4. Course Contents

	Topics		SUBTOPIC
1	Concept of Health and diseases	i	Ancient and modern medicine, Changing concepts of public health,
		ii	Determinants of health and diseases
2	Social sciences	i	Behavioral sciences
		ii	Taboos related to oral health
3	Environment and health	i	Natural resources and associated illness



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

		ii	Regulations for Environmental protection
		iii	Disposal of waste
		iv	Health professional's responsibility
4	Health care delivery in India	i	Structure Primary Health Care
		ii	Personnel involved in health care
		iii	Public and private financing for health care
		iv	Beneficiaries in health care
		v	National Health Programs
5	Survey	i	Steps in survey
		ii	Sampling methodology
		iii	Data collection- Tools and methods
		iv	Basic oral Health Survey-part I
		v	Principles and methods of health education and mass media
6	Health communication and education	i	Approaches and models of health education

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)				
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4	
CO-1						3											1
CO-2						1							1				
CO-3				1									1				
CO-4									1								1
CO-5											1					1	
CO-6						1										1	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

H. L. G. / CO

G. R.

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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures		30
Demonstrations		08
1. Demonstration using Videos	04	
2. Demonstration using Physical Models /Patients	04	
Practical Work		00
Pre-Clinical laboratories	00	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		
1. Case Study Presentation	00	
2. Guest Lecture	4	
3. Industry / Field Visit	70	
4. Brain Storming Sessions	06	
5. Group Discussions	20	
6. Discussing Possible Innovations	10	
Term Tests, Laboratory Examination/Written Examination, Presentations		02
Total Duration in Hours		150

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Presentation) or subcomponent of CE. COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation	
	Component 1: CE (100% Weightage)
Subcomponent ▶	SC1: CE
Maximum Marks ▶	20
CO-1	X
CO-2	X
CO-3	X
CO-4	X
CO-5	X
CO-6	X

The details are presented in the Programme Specifications Document.

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the semester.



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8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Course notes
2. Park and park (2011): Preventive and Social medicine 21st Ed M/s Banarsidas Bhanot Publishers, Jabalpur.
3. Dr.Soben Peter (2011): Essentials of preventive and community dentistry. 5th Ed, Arya (Medi) Publishing House, New Delhi.
4. SS Hiremath. (2007): Text Book of Preventive and Community Dentistry. 1st Ed, Elsevier, A division of Reed Elsevier India Pvt Ltd, New Delhi.
5. WHO (1997): Oral Health Surveys-Basic Methods. 4th Ed, WHO, Geneva

b. Recommended Reading

c. Magazines and Journals

d. Websites

e. Other Electronic Resources

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Course Specifications: Ability Enhancement Compulsory Course

Course Title	Practice Observership
Course Code	BDF401A
Course Type	Ability Enhancement Compulsory Course
Department	Public Health Dentistry
Faculty	Dental Sciences

1. Course Summary

The aim of the course is to provide students with adequate knowledge and skills of establishing a Private Dental Practice. The students will be equipped to plan the practice setup including patient management, manpower management, financial management, infection control and prevention, equipment management and inventory management.

2. Course Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	1:0:3
Total Hours of Interaction	30
Number of Weeks in a term	20
Department Responsible	Public Health Dentistry
Total Course Marks	20
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss various managerial areas in Private Dental Practice
- CO-2. Discuss various legislations governing Private Dental Practice
- CO-3. Propose a plan for "My Dream Dental Clinic"

4. Course Contents

	Topic		Lesson Topics
1	Management in private dental practice	i	Communication
		ii	Designing of building
		iii	Patient Management
		iv	Financial Management
		v	Manpower management
		vi	Patient data management
2	Act/Legislations governing Private Dental Practice	i	Environmental Protection Act
		ii	Biomedical Waste Management and Handling Rule
		iii	Radiation Protection
		iv	COPRA
		v	Trade Certificate
		vi	National/State Act pertaining to Private Dental Practice
3	Setting up a Dental Practice	i	Location



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

	ii	Structure
	iii	Type of Dental Practice

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)												Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3	PSO-4
CO-1							3							1		
CO-2							3							1		
CO-3							3							1		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures		04
Demonstrations		00
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	00	
Practical Work		00
Pre-Clinical laboratories	00	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		25
1. Case Study Presentation	00	
2. Guest Lecture	00	
3. Industry / Field Visit/Observerships	25	
4. Brain Storming Sessions	00	
5. Group Discussions	00	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		01
Total Duration in Hours		30

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the Bachelor of Dental Surgery Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or Presentation) or subcomponent of CE. COs are assessed as illustrated in the following Table.



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Programme Structure and Course Details of Bachelor of Dental Surgery (BDS) 2022

Focus of COs on each Component or Subcomponent of Evaluation	
	Component 1: CE (100% Weightage)
Subcomponent ▶	SC1: CE
Maximum Marks ▶	20
CO-1	X
CO-2	X
CO-3	X
The details are presented in the Programme Specifications Document.	

The Course Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the semester.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	Assignment
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	Classroom lectures, Practical Sessions, Examination
11.	Presentation Skills	Classroom lectures, Practical Sessions, Examination
12.	Behavioral Skills	Classroom lectures, Practical Sessions, Examination
13.	Information Management	Assignment
14.	Personal Management	Assignment, Examination
15.	Leadership Skills	Classroom lectures, Assignment

9. Course Resources

a. Essential Reading

1. Course notes
2. George M. Gluck and Warren M. Morganstein: Jong's community dental health: 5th edition, 2002
3. Burt BA & Eklund SE. Dentistry, Dental practice and community. New York. Elsevier. 6th ed. 2005.
4. Seward M. Into Dental Practice, A Working Guide. British Dental Journal, 1990.
5. Christensen GJ. A Consumer Guide to Dentistry. Mosby Publishers, 2nd Ed. 2002.



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- b. Recommended Reading
- c. Magazines and Journals
- d. Websites
- e. Other Electronic Resources


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