



**RAMAIAH  
UNIVERSITY**  
OF APPLIED SCIENCES

**M S Ramaiah University of Applied Sciences**

**Programme Structure and Course Details**

**Of**

**Master Dental Surgery**

**In**

**Oral & Maxillofacial Pathology and Oral  
Microbiology**

**Batch 2022 onwards**

**M S Ramaiah University of Applied Sciences**

**Faculty of Dental Sciences**



Approved by the Academic Council at its 26<sup>th</sup> meeting held on 14<sup>th</sup> July 2022

Dean - Academics

M. S. Ramaiah University of Applied Sciences

Bangalore - 560 054

Registrar  
M. S. Ramaiah University of Applied Sciences  
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## 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 Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, 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 MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**Programme Specifications: MDS in Oral & Maxillofacial Pathology and Oral Microbiology**

<b>Faculty</b>	Dental Sciences
<b>Department</b>	Oral & Maxillofacial Pathology and Oral Microbiology
<b>Programme Code</b>	070
<b>Programme Name</b>	MDS in Oral & Maxillofacial Pathology and Oral Microbiology
<b>Dean of the Faculty</b>	Dr. Silju Mathew
<b>Head of the Department</b>	Dr. Sowmya S.V

1. **Title of the Award:** MDS in Oral & Maxillofacial Pathology and Oral Microbiology
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:** July - 2022
8. **Next Review Date:** July 2025
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**

Oral diseases such as dental caries, periodontal diseases, tooth loss, oral mucosal lesions & oropharyngeal cancers, human immunodeficiency virus-related oral diseases and orodental trauma are major public health problems worldwide. Poor oral health has a profound effect on general health and quality of life. The burden of oral diseases is particularly high for the disadvantaged and poor population groups in both developing and developed countries. In the Indian scenario, often oral health is the most neglected aspect of health care with higher prevalence occurring in rural areas due to multiple barriers including lack of awareness, access to dental care or unaffordability.

The practice of oral pathology includes research, diagnosis of diseases using clinical, radiographic, microscopic, biochemical or other examinations. It occupies a unique position in the health care community for the dental as well as medical professions. A thorough knowledge obtained from this subject will help to correlate human biology with signs and symptoms of human disease. This will help to understand oral diseases so that it can be



*Silju Mathew*  
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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

properly diagnosed and adequately treated. Oral & Maxillofacial Pathology and Oral Microbiology speciality assists the clinicians to diagnose the challenging diseases like head and neck cancers by providing confirmatory evidence. This can be combined with advanced investigative techniques. It also navigates the surgeons for better management of patients. Thus it is imperative to train more oral pathologists to address the oral health care issues.

**15. Programme Mission**

Master's degree programme in Oral & Maxillofacial Pathology and Oral Microbiology is structured to ensure adequate coverage at an advanced level of all areas in Oral & Maxillofacial Pathology and Oral Microbiology. However, the post graduates are expected to possess high end theoretical and topics in applied basic sciences and in all facets of oral pathology; high order skills in analysis, critical evaluation and diagnosis, professional practical application; and the ability to diagnose complex oral health diseases independently. The post graduates are expected to meet the human resource requirement in the arena of oral pathology and opt one of these: exclusive clinical practice, research or academics.

**16. Graduate Attributes (GAs)**

- GA-1. Oral health knowledge:** Ability to apply knowledge of basic and applied medical and dental science to address oral health issues.
- GA-2. Problem Analysis:** Ability to analyse oral health problems, interpret data and arrive at meaningful conclusions involving appropriate investigations and diagnosis.
- GA-3. Provide Solutions:** Ability to understand the etiopathology, clinical features of oral disease and provide solutions considering public health and safety, and the cultural, societal, and environmental considerations
- GA-4. Conduct Investigations of Complex Problems:** Ability to understand and solve complex clinical situations by conducting experimental investigations
- GA-5. Modern Tool Usage:** Ability to apply appropriate tools and techniques and understand utilization of resources appropriately to oral health activities
- GA-6. The Dental Expert and Society:** Ability to understand the effect of oral health solutions on legal, cultural, social, and public health and safety aspects
- 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 dental practices and professional responsibilities
- GA-9. Individual and Teamwork:** Ability to work as a member of a team, to plan and to integrate knowledge of various dental and allied disciplines 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



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

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

**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)**

MDS in Oral & Maxillofacial Pathology and Oral Microbiology graduates will be able to:

- PO1.** Ensure higher understanding in both general and special pathology dealing with the nature of oral diseases, their causes, processes and effects.
- PO2.** Enable the students to operate the diagnostic and investigative devices and interpret the observations.
- PO3.** Enable the students in the performance of routine histopathological evaluation of specimens relating to oral and perioral tissues, to carry out routine diagnostic procedures including hematological, cytological, microbiological, Immunological and ultra-structural investigations.
- PO4.** Ensure in depth understanding in Oral oncology, nature of oral oncological diseases, their causes, processes and effects.
- PO5.** Develop research skills to identify a scientific problem and address independently and as a team.
- PO6.** Function as a competent Oral Pathologist and Forensic Odontologist in any given situation

**18. Programme Goal**

The programme goal is to produce graduates having critical, analytical and problem-solving skills, and ability to think independently, and to pursue a career in Oral & Maxillofacial Pathology and Oral Microbiology

**19. Program Educational Objectives (PEOs)**

The objectives of MDS in Oral & Maxillofacial Pathology and Oral Microbiology Programme are to:

- PEO-1.** Provide students with a strong foundation in basic and applied medical and dental sciences to address oral health issues to enable them to devise and deliver efficient solutions to challenging problems pertaining to oral and maxillofacial region in infants and children through adolescence including those with special health care needs
- PEO-2.** Impart analytic and cognitive skills required to develop innovative solutions for R&D, Industry, and societal requirements as related to pediatric dentistry
- PEO-3.** Provide sound theoretical and practical knowledge of oral health sciences, managerial and entrepreneurial skills to enable students to contribute to the well-being and welfare of the society



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

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

**20. Programme Specific Outcomes (PSOs)**

At the end of MDS in Oral & Maxillofacial Pathology and Oral Microbiology programme, the graduates will be able to:

**PSO-1.** Analyse the clinical features, etiopathogenesis, oral manifestations and laboratory investigations of head and neck pathologies to arrive at a definitive diagnosis

**PSO-2.** Perform routine and advanced laboratory diagnostic techniques for head and neck pathologies

**PSO-3.** Function as a competent Oral Pathologist and Forensic Odontologist in an academic and hospital-based set-up.

**PSO-4.** Conduct quality research and disseminate the inferences to the stake holders of the

**21. Programme Structure:**

Year 1							
Sl. No.	Code	Course Title	Theory (H/W/Y)	Tutorials (H/W/Y)	Practical (H/W/Y)	Total Credits	Max. Marks
1	PMCS01A	Preclinical and Laboratory Phase	05	0	29	48	400
2	MF501A	Clinical Photography*	-	-	1	1	20
3	MF502A	Basic and Advanced Life Support*	-	-	1	1	20
4	MF503A	Personality Development and Soft Skills*	-	-	1	1	20
5	MF504A	Law for Dental Professionals*	-	-	1	1	20
6	MR501A	Research Methodology	1	-	1	2	40
7	MR504A	Dissertation	-	1	-	2	-
8		Part I - Programme End Examination	-	-	-	-	100
<b>Total</b>			<b>6</b>	<b>1</b>	<b>34</b>	<b>56</b>	<b>620</b>
<b>Total number of contact hours per week</b>			<b>36</b>				

\*Faculty Common Modules are conducted for 30 hours as 1 credit courses

Year 2							
Sl. No.	Code	Course Title	Theory (H/W/Y)	Tutorials (H/W/Y)	Practical (H/W/Y)	Total Credits	Max. Marks
1	PMCS02A	Oral Pathology and Oral Oncology	05	0	27	48	400
2	MR502A	Short Term Project/Group Project	-	-	1	6	100
3	MR503A	Library Dissertation	-	1	-	4	60
4	MR504A	Dissertation	-	1	3	10	
5	MR505A	Conference Presentation	-	1	-	1	20
6	MF505A	Teacher Training Module	1	-	-	1	20



*Madhya Rao*

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7	MG501A	Training in Any Other Institution in India or Abroad	1	-	-	3	60
<b>Total</b>			<b>7</b>	<b>3</b>	<b>31</b>	<b>73</b>	<b>660</b>
<b>Total number of contact hours per week</b>			<b>36</b>				

Year 3							
Sl. No.	Code	Course Title	Theory (H/W/Y)	Tutorials (H/W/Y)	Practical (H/W/Y)	Total Credits	Max. Marks
1	PMC503A	Advanced Diagnostics and Comprehensive Oral Pathology and Microbiology	03	0	33	24	400
2	MR504A	Dissertation	-	2	2	6	200
3	MR506A	Journal Publication	-	1	-	1	20
4		Part II - Programme End Examination	-	-	-	20	600
<b>Total</b>			<b>3</b>	<b>3</b>	<b>35</b>	<b>51</b>	<b>1220</b>
<b>Total number of contact hours per week</b>			<b>36</b>				

**22. Course Delivery**

The course is delivered Monday to Saturday of the week according to time table including mandated library/laboratory time towards self- directed learning.

**23. Teaching and Learning Methods**

- a. Team Teaching/ Integrated Teaching
- b. Face to Face Lectures using Audio-Visuals
- c. Seminars/journal clubs/e-lectures
- d. Case Based Discussions
- e. Group Discussions, Debates, Presentations
- f. Demonstrations on videos, computers and models
- g. Clinical based learning
- h. Hospital based learning
- i. Laboratory work
- j. Dissertation/ Group Project work
- k. School visits/Outreach center visits
- l. Interdepartmental meets
- m. Continuing dental education programs/symposiums/workshops
- n. State/National/International conferences and conventions

**24. Assessment and Grading**

**24.1. Components of Grading**

**Programme Specialization Teaching Course (PSTC) 1 - 3**

There are two components-



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**a. Component 1 (Continuous Evaluation)**

**Year 1:**

There are 2 components

- i. Theory component consisting of
  - a. Assignment to be submitted as a word processed document for 100 marks consisting of Section A and Section B
  - b. Assessment as a Mock written examination for Part 1 of component 2 for 100 marks consisting of Section A and Section B
- ii. Clinical component consisting of
  - a. Clinical case discussion/clinical examination for 80 marks for Term 1 and Term 2
  - b. Viva Voce for 20 marks each on the course content including assignment for Term 1 and Term 2

**Year 2:**

There are 2 components

- iii. Theory component consisting of
  - a. Assignment to be submitted as a word processed document for 100 marks consisting of Section A and Section B
  - b. Assessment as a written examination for 100 marks consisting of Section A and Section B
- iv. Clinical component consisting of
  - a. Clinical case discussion/clinical examination for 80 marks for Term 1 and Term 2
  - b. Viva Voce for 20 marks each on the course content including assignment for Term 1 and Term 2.

**Year 3:**

There are 2 components

- v. Theory component consisting of
  - a. Assignment to be submitted as a word processed document for 100 marks consisting of Section A and Section B
  - b. Assessment as a Mock written examination for Part 2 of Component 2 for 300 marks
- vi. Clinical component consisting of
  - a. Clinical case discussion/clinical examination (80 marks) along with Viva Voce (20 marks) on the course content
  - b. Assessment as a Mock Clinical examination for Part 2 of Component 2 for 300 marks

**b. Component 2 (Programme End Exam PEE)**

Component 2 shall have a theory component, Clinical Component, Pedagogy and Viva Voce.

**Theory component**

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at the end of Third year of MDS course. Part-II Examination shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration. Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Paper-III will be



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

**Part-I**

Paper-I : Applied Basic Sciences: Applied anatomy, Physiology (General and oral), Cell Biology, General Histology, Biochemistry, General Pathology, General and Systemic Microbiology, Virology, Mycology, Basic Immunology, Oral Biology (oral and dental histology), Biostatistics and Research Methodology

**Part-II**

Paper-I: Oral Pathology, Oral Microbiology and Immunology and Forensic Odontology

Paper-II : Laboratory techniques and Diagnosis and Oral Oncology

Paper-III: Descriptive and analysis type question

**Clinical Component**

Structured clinical exam for different exercises will be assessed for 200 marks.

- i. Long and short clinical case presentation (30 +20 marks)
- ii. Any 2 Hematological investigations : Total leucocyte count, Differential leucocyte count, Hemoglobin estimation, ESR estimation, Bleeding time, Clotting time- 20 marks
- iii. Staining of tissues using Hematoxylin and Eosin stain or any specific special stain- 20 marks
- iv. Cytology smear preparation & staining or Microbiological investigations including staining using either Ziehl Neelsen stain or Gram stain- 10 marks
- v. Histopathological reporting of 10 slides- 100 marks

**Pedagogy and Viva Voce Component**

Structured Viva Voce exam for 80 marks and pedagogy for 20 marks will be conducted during clinical exam.

**Research, Faculty Common, Elective Modules:**

These modules will be assessed as per the assessment norms as specified in the module specification. The assessment for these modules is through tests, presentations or any other method as specified in the module specification.

**25. Student Support for Learning**

1. Course Notes
2. Reference Books in the Library
3. Magazines and Journals
4. Internet Facility
5. Computing Facility
6. Laboratory Facility
7. Workshop Facility
8. Staff Support
9. Lounges for Discussions
10. 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 PEE their assessed work



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

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)

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

Year	Course Title	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
1	Preclinical and Laboratory Phase	3	3	3	3	3	3	3	3	3	3
1	Clinical Photography*	1	2	3	2			2	2		
1	Basic and Advanced Life Support*		1								
1	Personality Development and Soft Skills*						2			2	
1	Law for Dental Professionals*						2			2	
1	Research Methodology					3	3				3
2	Oral Pathology and Oral Oncology	3	3	3	3	3	3	3	3	3	3
2	Short term project/Group project						3				3
2	Library Dissertation						3				3
2	Conference presentation						3				3
2	Teacher Training Module			2						2	
2	Training in any other institution in India or Abroad	2	2	2	2	2	2	2	2	2	2
3	Advanced Diagnostics and Comprehensive Oral Pathology and Microbiology	3	3	3	3	3	3	3	3	3	3
3	Dissertation						3				3
3	Journal Publication						3				3

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, paper writing, attending industry exhibitions, project competitions and related activities for enhancing their knowledge and networking.

**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 MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**Course Specifications**

Course Title	Preclinical & Laboratory Phase
Course Code	PMC501A
Course Type	Program Specialization Teaching Course
Department	Oral & Maxillofacial Pathology and Oral Microbiology
Faculty	Dental Sciences

**1. Course Summary**

This Course is designed to acquaint the student to basic sciences and preliminary clinical work. The Course imparts an integrated introductory approach to basic oral biology and biochemistry. Also, it trains the students to understand the optics involved and operate light microscopes for interpretation of various tissue specimens. The concepts of tooth morphology will be executed through carving exercises along with evaluation of plaster models of dentition. This Course is designed to train the students in microbiology and basic laboratory procedures. The students will be able to perform hematological and basic histochemical tests along with an overview of microbiology and immunology. The students will examine the patients and perform appropriate investigative procedures. The students will also be able to justify a suitable technique and prepare tissue for microscopic analysis accordingly.

**2. Course Size and Credits:**

Number of Credits	56
Credit Structure (Lecture: Tutorial: Practical)	24:0:24
Total Hours of Interaction	1800
Number of Weeks in a Year	50
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. Review concepts of basic medical sciences with emphasis on oral tissues.
- CO-2. Diagnose oral hematological disorders based on appropriate investigations
- CO-3. Prepare and analyse hard and soft tissue sections and microbiological smears using routine and special stains.
- CO-4. Demonstrate carving of permanent teeth morphology on wax blocks.
- CO-5. Distinguish the operating mechanisms and applications of various light microscopes.
- CO-6. Appraise recent laboratory modalities involved in histopathology.



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**4. Course Contents**

**Theory**

**Unit 1: Applied Gross Anatomy of Head and Neck including Histology** – temporomandibular joint, trigeminal nerve and facial nerve, muscles of mastication, tongue, salivary glands, nerve supply, blood supply, lymphatic drainage and venous drainage of oro-dental tissues, embryology-development of face, palate, mandible, maxilla, tongue and applied aspects of the same, development of teeth and dental tissues and developmental defects of oral and maxillofacial region and abnormalities of teeth, maxillary sinus, jaw muscles and facial muscles, Genetics- introduction modes of inheritance, chromosomal anomalies of oral tissues and single gene disorders.

**Unit 2: General Histology** - Light and electron microscopy considerations of epithelial tissues and glands, bone, hematopoietic system, lymphatic system, muscle, neural tissue, endocrinal system (thyroid, pituitary, parathyroid).

**Unit 3: Physiology (General and oral)** – Saliva, pain, mastication, taste, deglutition, wound healing, vitamins (influence on growth, development and structure of oral soft and hard tissues and paraoral tissues), calcium metabolism, theories of mineralization, tooth eruption and shedding, hormones, (influence on growth, development and structure of oral soft and hard tissues and paraoral tissues), blood and its constituents.

**Unit 4: Oral Biology (Oral and Dental Histology, Embryology)** - Structure and function of oral, dental and paraoral tissues including their ultra-structure, molecular and biochemical aspects, study of morphology of permanent and deciduous teeth.

**Unit 5: Cell Biology** - Cell-structure and function (ultrastructural and molecular aspects), intercellular junctions, cell cycle and division, cell cycle regulators, cell - cell and cell - extra cellular matrix interactions, detailed molecular aspects of DNA, RNA and intracellular organelles, transcription, translation and molecular biology techniques.

**Unit 6: Biochemistry** - Chemistry of carbohydrates, lipids and proteins, methods of identification and purification, metabolism of carbohydrates, lipids and proteins, biological oxidation, various techniques - cell fractionation and ultra-filtration, centrifugation, electro spectrophotometry and radioactive techniques.

**Unit 7: Microscopy**- Definition, parts of microscope, types, principles involved in microscopy, and optics involved.

**Unit 8: Morphology of Deciduous and permanent dentition including their chronology**- Basic terminologies, types of dentitions, nomenclature, tooth numbering system, morphology of deciduous dentition and their chronology, morphology of permanent dentition and their chronology.



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**Unit 9: Haematology and Basic Histotechniques** - Routine haematological tests and clinical significance of the same, biopsy procedures for oral lesions, processing of tissues for paraffin blocks, microtome and principles of microtomy, routine stains, principles and theories of staining techniques, special stains, methods of tissue preparation for decalcified sections and cytopathology.

**Unit 10: Clinical Pathology** - Laboratory investigations - Hematology, Microbiology and urine analysis.

**Unit 11: General Microbiology** - Definitions of various types of infections, routes of infection and spread, sterilization, disinfection and antiseptics, bacterial genetics, physiology and growth of microorganisms.

**Unit 12: Basic Immunology** - Basic principles of immunity, antigen and antibody reactions, cell mediated and humoral immunity, immunology of hypersensitivity, immunological basis of the autoimmune phenomena, immunodeficiency with relevance to opportunistic infections, basic principles of transplantation and tumor immunity.

**Unit 13: Systemic Microbiology/Applied Microbiology-** Morphology, classification, pathogenicity, mode of transmission, methods of collection and transport of specimen, for laboratory diagnosis, staining methods, culture media, interpretation of laboratory reports and antibiotic sensitivity tests, Staphylococci, Streptococci, Corynebacterium diphtheria, Mycobacteria, Clostridia, bacteroides and fusobacteria, Actinomyces, Spirochetes, Virology- General properties: structure, broad classification of viruses, pathogenesis, pathology of viral infections, Herpes virus: list of viruses included, lesions produced, pathogenesis, latency principles and laboratory diagnosis, Hepatitis virus: list of viruses, pathogenesis, and mode of infection, list of diagnostic tests, and their interpretations, methods of prevention and control, Human Immunodeficiency virus: structure with relevance to laboratory diagnosis, type of infection, laboratory tests and their interpretation, universal precautions, specific precautions and recent trends in diagnosis and prophylaxis, Mycology: General properties of fungi, classification based on disease, superficial, subcutaneous, deep opportunistic infections, General principles of fungal infections, diagnosis, method of collection of sample and examination of fungi.

**Preclinical Work**

1. Drawing and submission of basic histology diagrams in the record books.
2. Operating microscopes, experimenting the optics of microscopes by observing hard and soft tissue sections under them to analyze their features.
3. Carving of one set of entire permanent dentition using wax blocks to understand their morphology. Discussion of morphology of deciduous dentition.
4. Preparation of 5 transverse and 5 longitudinal ground sections of teeth to observe and analyze under light microscope, and report the same.
5. Observation and interpretation of soft tissue histology slides.
6. Observation of laboratory procedures performed by senior post graduate students and faculty to get a basic overview of the procedures performed.

**Clinical work /Practical work includes Microbiology, Oral Medicine and Oral Surgery postings for 15 days each**

1. Record 5 detailed case histories, observe and assist a minimum of 3 biopsy procedures.
2. Conduct, record and interpret a minimum of 50 cases of routine hematological investigations



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

including total leucocyte count, differential leucocyte count, blood glucose estimation, hemoglobin estimation, bleeding time, clotting time and ESR.

3. Processing of 15 sample specimens followed by embedding them in paraffin blocks to cut a minimum of 10 soft tissue sections using microtome and staining them using routine Hematoxylin and Eosin (H&E) stain to understand and interpret microscopically.
4. Perform appropriate special staining technique for either a smear or tissue section using periodic acid schiff (PAS), papanicolaou (PAP), mucicarmine, alcian blue, toluidine blue, reticulin, masson trichome, phosphotungstic acid hematoxylin (PTAH) and von kossa.
5. Prepare and report minimum of 100 cytology smears.
6. Prepare and analyze 6 stained microbiological smears.
7. Prepare and interpret 5 H & E stained decalcified sections of teeth under microscope.

**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	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3						3			
CO-2		3						3		
CO-3		3	3					3	2	
CO-4	3						2			
CO-5		3						2		
CO-6			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	
<b>Classroom Interaction</b>		<b>240</b>	
1. Face to Face Lectures	06		
2. Seminars, Journal clubs, IDM	108		
3. Guest Lecture	06		
4. Brain Storming Sessions / Group Discussions / Discussing Possible Innovations	60		
5. Case Study Presentation	60		
<b>Demonstrations</b>		<b>1480</b>	
1. Demonstration using Videos	50		
2. Demonstration using Physical Models/Systems	50		
3. Demonstration on a Computer	50		
<b>Clinical Work</b>			
1. Pre-Clinical area	650		
2. Clinical Area	280		
3. Hospital Setup	400		
4. Dental camp	--		
5. Outreach centres	--		
6. Industry/Field Visit	--		



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

Term Tests, Laboratory Examination/Written Examination, Presentations	<b>80</b>
Total Duration in Hours	<b>1800</b>

**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 MDS in Oral & Maxillofacial Pathology and Oral Microbiology 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 PEE) or subcomponent of CE (SC1, SC2, SC3 or SC4), COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation				
Subcomponent ▶	Component 1: CE			
	Theory		Practical/Clinical	
Subcomponent Type ▶	SC1 - Written assessment	SC2 - Assignment	SC3 - Clinical Assessment and Viva Voce I	SC4 - Clinical Assessment and Viva Voce II
Maximum Marks ▶	100	100	100	100
CO-1	x	x		x
CO-2			x	x
CO-3		x	x	x
CO-4			x	x
CO-5	x	x		x
CO-6	x			x

The details of SC1, SC2, SC3 or SC4 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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

**9. Course Resources**

**a. Essential Reading**

1. Course notes
2. Nanci A. TenCate's. (2009) Oral Histology, development, structure & function, 7<sup>th</sup> ed, Missouri: Mosby Elsevier
3. Kumar GS. Orban's. (2008) Oral Histology & Embryology New Delhi (India), 12<sup>th</sup> ed, Elsevier
4. Ash, Nelson. (2010) Wheelers dental anatomy, physiology and occlusion, 9<sup>th</sup> ed, Elsevier
5. Richard L. Drake, Vogl W, Mitchell W M A, Gray H. (2010) Gray's Anatomy for Students, 2<sup>nd</sup> ed, Philadelphia: Churchill Livingstone, Elsevier
6. Guyton AC. (1998) Hall Textbook of Medical Physiology, 9<sup>th</sup> ed, Philadelphia: WB Saunders
7. Satyanarayana U, Chakrapani U. Biochemistry. (2006) 3<sup>rd</sup> ed, Kolkata (India): Books and Allied Pvt Ltd
8. Greer JP, Foerster J, Rodgers GM, Paraskavas F, Glader B, Arber DA et al. (2009) Wintrobe's Clinical Haematology, 12<sup>th</sup> ed, Philadelphia: Lipincott Williams & Wilkins
9. Bancroft JD, Gamble M. (2008) Theory and Practice of Histological Techniques, 6<sup>th</sup> ed, USA: Churchill Livingstone
10. Mahon CR, Lehman DC, Manusels G. (2007) Textbook of Diagnostic Microbiology, 3<sup>rd</sup> ed, Missouri: Saunders Elsevier
11. Paniker CKJ. Ananthanarayanan & Panikar's. (2005) Textbook of Microbiology, 7<sup>th</sup> ed, Chennai (India): Orient Longman Pvt Ltd
12. Goldsby RA, Kindt TJ, Osborne BA, Kuby J. (2003) Immunology, 5<sup>th</sup> ed, NewYork: WH Freeman & company

**b. Recommended Reading**

1. Chaurasia BD. (2007) Human Anatomy for Dental Students, 4<sup>th</sup> ed, Noida (India): CBS Publishers
2. EroscheskoVP. DiFiore's. (2008) Atlas of Histology with Functional Correlations 11<sup>th</sup> ed, New Delhi: Wolters Kluwer
3. Culling CFA, Allison RT, Barr WT. (1985) Handbook of histopathological and histochemical techniques, 4<sup>th</sup> ed, Butterworths and co publishers
4. Murray PR, Baron EJ, Jorgensen JH, Landry ML, Pfaller MA. (2007) Manual of Clinical Microbiology, 9<sup>th</sup> ed, Vol 1& 2. China: ASM Press
5. Samaranyake L. (2012) Essential microbiology for dentistry, 4<sup>th</sup> ed, USA: Churchill Livingstone
6. Alberts B, Johnson A, Lewis J, Raff M, Roberts K, Water P. (2002) Molecular Biology of the Cell, 4<sup>th</sup> ed, New York: Garland Science
7. Berkovitz BKB, Graham RH. (2009) Oral Anatomy, Histology and Embryology, 4<sup>th</sup> ed, Elsevier

**c. Journals**



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

1. Journal of Dental Research
2. Indian Journal of Dental Research
3. Journal of Oral Biosciences
4. Journal of histology and histopathology
5. Journal of Molecular Histology
6. Journal of Oral & Maxillofacial Pathology
7. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology
8. Journal of Oral Pathology & Medicine
9. Journal of Clinical and Diagnostic Research
10. Journal of Clinical and Laboratory Medicine
11. Lancet
12. Journal of Diagnostic Cytopathology

**d. Websites**

1. [www.oralpath.com/](http://www.oralpath.com/)
2. [www.uiowa.edu/~oprm/AtlasHome.html](http://www.uiowa.edu/~oprm/AtlasHome.html)
3. [www.sciencedirect.com](http://www.sciencedirect.com)
4. [www.onlinelibrary.wiley.com](http://www.onlinelibrary.wiley.com)

**e. Other Electronic Resources**

1. HELINET
2. EBSCO host



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

Course Title	Oral Pathology and Oral Oncology
Course Code	PMC502A
Course Type	Program Specialization Teaching Course
Department	Oral & Maxillofacial Pathology and Oral Microbiology
Faculty	Dental Sciences

**1. Course Summary**

This Course is designed to acquaint the students to basic oral histopathology. The student will be able to categorize developmental disturbances and mucocutaneous diseases of oral and maxillofacial regions. The student will be trained to participate in clinico pathologic meetings, slide discussions and mounting museum specimens. The student will be able to reproduce schematic histopathologies. Students will be enabled to acquire specialized knowledge in the field of oncology related to head and neck region. The students will be able to review the concepts of neoplasia and the use of investigative procedures. The students will also examine and diagnose oncology cases with subsequent presentation

**2. Course Size and Credits:**

Number of Credits	73
Credit Structure (Lecture: Tutorial: Practical)	24:0:24
Total Hours of Interaction	1800
Number of Weeks in a Year	50
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. Distinguish infections, mucocutaneous lesions and developmental disturbances affecting oral and maxillofacial structures.
- CO-2. Diagnose potentially malignant disorders, benign and malignant neoplasms affecting oral and maxillofacial structures.
- CO-3. Explore recent concepts and advanced investigative procedures in pathological diagnosis.
- CO-4. Provide comprehensive histopathological report of archived and prospective oral pathology specimens.
- CO-5. Justify the diagnosis of oncological cases based on clinicopathologic correlation with empathy.
- CO-6. Compile schematic representation of histopathology in laboratory records and exhibit mounted specimens using museum techniques.



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**4. Course Contents**

**Theory**

**Unit 1: General Pathology** - Inflammation and chemical mediators, thrombosis, embolism, necrosis, repair, degeneration, shock, hemorrhage, pathogenic mechanisms at molecular level and blood dyscrasias.

**Unit 2: Basic Oral Pathology**-Detailed study of developmental disturbances affecting oral and para oral structures, dental caries, pulp and periapical Infections, spread of infections, physical and chemical Injuries affecting the oral cavity, regressive alterations of teeth, allergic and immunologic disorders, odontogenic cysts, diseases of skin, oral potentially malignant disorders, diseases of nerves and muscles, diseases of periodontium, diseases of bone, including diseases of temporomandibular joint. Blood disorders, oral manifestations of systemic disorders, bacterial, viral and fungal infections, museum techniques.

**Unit 3: Concepts of Neoplasia**- definitions, nomenclature, characteristics of benign & malignant neoplasms, epidemiology, carcinogenesis, molecular basis of cancer, etiology of cancer: carcinogenic agent, host defense against tumours, tumour immunity, clinical features of neoplasia, biomarkers, immunology, viral oncology.

**Unit 4: Tumors**-Odontogenic, non-odontogenic epithelial, salivary gland, vascular, neural, muscular, osseous, lymphoid, cutaneous, endocrinal, spindle cell, round cell, giant cell, iatrogenic, pigmented, haematopoetic and metastatic tumors.

**Preclinical Work - Clinical work /Practical work** (includes **Dermatology** postings for 15 days)

1. Perform 5 case examinations, record case history, mount 1 museum specimen and have clinico-pathological discussions to arrive at a common consensus.
2. Observe referred cases which come to department for reporting, analyze them, and report.
3. Observe and analyze department's archival slides on common oral and mucocutaneous lesions and report the same.
4. Tissue preparation of minimum of 50 biopsied specimens obtained from patients.
5. Conduct 5 slide discussions of important common oral lesions and or mucocutaneous diseases.
6. Drawing and submission of oral pathology diagrams in the record books.

**Preclinical Work - Clinical /Practical work** (includes **Oncology/FLAHS** postings for 15 days)

1. Observe oncology related slides from department archive, analyze and report the same.
2. Record 5 case histories pertaining to oncology, discuss in detail and report the same.
3. Conduct 5 slide discussions with cases pertaining to oncology and record the same.
4. Study bioinformatic analysis of oral cancer genomics data



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 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	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3						3			
CO-2		2	3	3				3		
CO-3						3			3	
CO-4			3			3			3	
CO-5						3	3		3	
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
<b>Classroom Interaction</b>	
1. Face to Face Lectures	06
2. Seminars, Journal clubs, IDM	108
3. Guest Lecture	06
4. Slide Discussions, Brain Storming Sessions / Group Discussions / Discussing Possible Innovations	60
5. Case Study Presentation	60
<b>Demonstrations</b>	
1. Demonstration using Videos	50
2. Demonstration using Physical Models/Systems	50
3. Demonstration on a Computer	50
<b>Clinical Work</b>	
1. Pre - Clinical area	650
2. Clinical Area	280
3. Hospital Setup	400
4. Dental camp	
5. Outreach centres	
6. Industry/Field Visit	
Term Tests, Laboratory Examination/Written Examination, Presentations	80
<b>Total Duration in Hours</b>	<b>1800</b>

**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 MDS in Oral & Maxillofacial Pathology and Oral Microbiology 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 PEE) or subcomponent of CE



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

(SC1, SC2, SC3 or SC4), COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation				
Subcomponent ▶	Component 1: CE			
	Theory		Practical/Clinical	
Subcomponent Type ▶	SC1 - Written assessment	SC2 - Assignment	SC3 - Clinical Assessment and Viva Voce I	SC4 - Clinical Assessment and Viva Voce II
Maximum Marks ▶	100	100	100	100
CO-1	x	x		x
CO-2	x			x
CO-3	x	x		x
CO-4			x	x
CO-5		x	x	x
CO-6			x	x

The details of SC1, SC2, SC3 or SC4 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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

**9. Course Resources**

**a. Essential Reading:**

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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

1. Kumar V, Abbas AK, Fauston, Mitchell RN. (2007) Robbins Basic Pathology, 8<sup>th</sup> ed, Philadelphia: Saunders Elsevier
2. Rajendran R, Sivapathasundaram B. (2009) Shafer's Textbook of Oral Pathology, 6<sup>th</sup> Ed, India: Elsevier
3. Shear M, Speight PM. (2002) Cysts of the Oral & Maxillofacial Regions, 4<sup>th</sup> ed, Singapore: Blackwell
4. Neville BW, Damm DD, Allen CM, Bouquot JE. (2009) Oral & Maxillofacial Pathology, 3<sup>rd</sup>ed, Missouri: Saunders
5. Elder DE, Elenitsas R, Johnson BL, Murphy GF. (2005) Lever's Histopathology of Skin, 9<sup>th</sup> ed, Philadelphia: Lipincott Williams & Wilkins
6. Ellis GL. (1991) Surgical Pathology of Salivary Glands, 1st ed, Philadelphia: Elsevier Health Science
7. Reichert PA, Philipsen HP. (2004) Odontogenic tumors and allied lesions, London: Quintessence Publishing
8. Rajendran R, Sivapathasundaram B. (2009) Shafer's Textbook of Oral Pathology, 6<sup>th</sup> ed, India: Elsevier
9. Weiss SW, Goldblum JR. (2008) Enzinger and Weiss's Soft tissue Tumors, 5<sup>th</sup> ed, Philadelphia: Mosby Elsevier
10. Gnepp DR. (2009) Diagnostic Surgical Pathology of the Head and Neck, 2<sup>nd</sup> ed, Philadelphia: Saunders Elsevier

**b. Recommended Reading:**

1. Regezi GA, Sciubba JJ, Jordon RCK. (2008) Oral pathology, Clinical Pathologic Correlations, 5<sup>th</sup> ed, Missouri: Saunders Elsevier
2. Bricker SL, Langlais RP, Miller CS. (2002) Oral Diagnosis, Oral Medicine & Treatment planning, 2<sup>nd</sup> ed, London: BC Decker Inc Neubrunn. Cariology
3. Dean K White. (2004) Oral and Maxillofacial Surgery Clinics of North America, Odontogenic Tumors, Saunders
4. Regezi GA, Sciubba JJ, Jordon RCK. (2008) Oral pathology, Clinical Pathologic Correlations, 5<sup>th</sup>ed, Missouri: Saunders Elsevier
5. Dardick, I, Bradley G, Lee, L, Leongl. (2006) Atlas of Salivary Gland Tumor Oral & Surgical Pathology, Pathology Images Inc.: Ottawa
6. Christopher D M Fletcher. (2007) Diagnostic Histopathology of Tumours, 3<sup>rd</sup> ed. Volume 1& 2: Philadelphia; Elsevier, 239-326.
7. Robert E. Marx, Diane Stern. (2002) Oral and Maxillofacial Pathology: A Rationale for Treatment, 1<sup>st</sup> ed, Hong Kong: Quintessence Publishing Co, Inc
8. Shah J P, Johnson NW, Batsakis JG. (2003) Oral Cancer, 1st Edi, United Kingdom: Martin Dunitz Taylor & Francis group
9. Abloff MD, Armitage JO, Lichter AS, Niederhuber JE. (2000) Clinical Oncology, 2<sup>nd</sup> ed, USA: Churchill Livingstone

**c. Journals:**

1. Journal of Oral Pathology & Medicine
2. Journal of Oral Diseases



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

3. Journal of Oral and Maxillofacial Pathology
4. British Dental Journal
5. Indian Journal of Dental Research
6. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology
7. Journal of Oral Oncology

**d. Websites:**

1. [www.oralpath.com/](http://www.oralpath.com/)
2. [www.uiowa.edu/~oprml/AtlasHome.html](http://www.uiowa.edu/~oprml/AtlasHome.html)
3. [www.sciencedirect.com](http://www.sciencedirect.com)
4. [www.onlinelibrary.wiley.com](http://www.onlinelibrary.wiley.com)

**e. Other electronic resources:**

1. HELINET
2. EBSCO host

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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

Course Title	Advanced Diagnostics and Comprehensive Oral Pathology and Microbiology
Course Code	PMCS03A
Course Type	Program Specialization Teaching Course
Department	Oral & Maxillofacial Pathology and Oral Microbiology
Faculty	Dental Sciences

**1. Course Summary**

This course sensitizes the students in advanced diagnostic modalities. Also, it trains the students in forensic science pertaining to dentistry. The student masters the skill in diagnosing challenging cases. This course is designed to comprehensively master the skills in oral pathology and its applied aspects. The course will empower students in attaining clinicopathologic competency.

**2. Course Size and Credits:**

Number of Credits	51
Credit Structure (Lecture: Tutorial: Practical)	12:0:12
Total Hours of Interaction	1800
Number of Weeks in a Year	50
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. Demonstrate the mechanisms of optics in advanced microscopy.
- CO-2. Exhibit competency in the diagnosis of oral and maxillofacial pathology.
- CO-3. Develop a pathology report of head and neck specimens.
- CO-4. Conduct forensic odontology-based academic and medico-legal case examination.
- CO-5. Perform immunohistochemical procedure on tissue specimens
- CO-6. Exhibit competency in usage of advanced diagnostic aids.

**4. Course Contents**

**Theory**

**Unit 1: Advanced Pathology-Microscopy-** Principle, operation, advantages & disadvantages, clinical applications of Fluorescent microscope, phase contrast microscope, darkfield microscope, polarizing microscope, interference microscope and electron microscope.

**Unit 2: Advanced Pathology-Techniques-** Principle, operation, advantages & disadvantages, clinical applications of immunohistochemistry, enzyme histochemistry, ELISA, western blot, PCR, flow cytometry, cytogenetics, insitu hybridization and DNA microarrays.



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**Unit 3: Forensic Odontology-** Evidence collection, post mortem examination of mouth and neck, identification of deceased individual-dental importance, bite marks, rugae patterns and lip prints. Age estimation and sex determination through various structures of mouth and maxillofacial region.

**Unit 4:** Comprehensive coverage of all topics from basic to advanced pathology and allied sciences  
Course contents of PM 1 -3

**Clinical/Practical work**

(Including work done during postings in Pathology/ FLAHS department for 15 days).

1. Observe, analyze and independently perform advanced techniques like immunohistochemistry, enzyme histochemistry, ELISA, western blot, PCR, flow cytometry, cytogenetics, insitu hybridization and DNA microarrays.
2. Assist, observe, operate and analyze fluorescent microscope, phase contrast microscope, darkfield microscope, polarizing microscope and interference microscope.
3. Observe and re-report (training) histopathological slides of rare and difficult cases from department archives.
4. Perform bite mark, palatal rugae and lip print analyses- 10 cases each, report and record the same.
5. Perform independent reporting of any biopsy sample received in the department.
6. In depth analysis, reporting and discussion of PG slide archives ranging from simple basic cases to complex lesions involving the maxillofacial region

**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	PSO-1	PSO-2	PSO-3	PSO-4
CO-1		3					2			
CO-2						3		2		
CO-3					3	2		3	2	
CO-4						3				3
CO-5			3					3		
CO-6		3	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
<b>Classroom Interaction</b>		
1. Face to Face Lectures	03	150
2. Seminars, Journal clubs, IDM	54	
3. Guest Lecture	03	

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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

4. Brain Storming Sessions / Group Discussions / Discussing Possible Innovations/Tutorials	45	1490
5. Case Study Presentation	45	
<b>Demonstrations</b>		
1. Demonstration using Videos	50	
2. Demonstration using Physical Models/Systems	50	
3. Demonstration on a Computer	50	
<b>Clinical Work</b>		
1. Pre-Clinical area	650	
2. Clinical Area	290	
3. Hospital Setup	400	
4. Dental camp	--	
5. Outreach centres	--	
6. Industry/Field Visit	--	
Term Tests, Laboratory Examination/Written Examination, Presentations	160	
<b>Total Duration in Hours</b>	<b>1800</b>	

**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 MDS in Oral & Maxillofacial Pathology and Oral Microbiology 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 PEE) or subcomponent of CE (SC1, SC2, SC3 or SC4), COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation				
Subcomponent	Component 1: CE			
	Theory		Practical/Clinical	
	SC1 - Written assessment	SC2 - Assignment	SC3 - Clinical Assessment and Viva Voce I	SC4 - Clinical Assessment and Viva Voce II
Maximum Marks	100	100	100	100
CO-1	x			x
CO-2	x			x
CO-3			x	x
CO-4		x	x	x
CO-5		x	x	x
CO-6	x	x		x

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



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

**9. Course Resources**

**a. Essential Reading**

1. Carson, Susan. (2012) Molecular Biology Techniques, 3<sup>rd</sup> edition, Elsevier
2. Gnepp DR. (2009) Diagnostic Surgical Pathology of the Head and Neck, 2<sup>nd</sup> Ed, Philadelphia, Saunders Elsevier
3. Weiss SW, Goldblum JR. (2008) Enzinger and Weiss's Soft tissue Tumors. 5<sup>th</sup> Ed, Philadelphia: Msiby Elsevier
4. Rajendran R, Sivapathasundaram B. (2008) Shafer's Textbook of Oral Pathology, 6<sup>th</sup> Ed, India, Elsevier
5. Stacey E Millis, Daryll Carter, Joel K. (2010) Sternberg's Diagnostic surgical pathology, 5<sup>th</sup> edition, Wolters Kluwer

**b. Recommended Reading**

1. Prakash Singh. (2014) Laboratory protocols in applied life sciences, CRC press
2. Christopher D M Fletcher. (2007) Diagnostic Histopathology of Tumors, 3<sup>rd</sup> Ed, Vol. 1&2, pp:239-326. Philadelphia; Elsevier

**c. Journals**

1. Journal of Dental research
2. Indian Journal of Dental Research
3. Journal of Oral Biosciences
4. Journal of Histology and Histopathology
5. Journal of Molecular Histology



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

6. Journal of Oral & Maxillofacial Pathology
7. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology

**d. Websites**

- i. [www.oralpath.com](http://www.oralpath.com)
- ii. [www.onlinelibrary.wiley.com](http://www.onlinelibrary.wiley.com)

**e. Other Electronic Resources**

- i. HELINET
- ii. EBSCO host



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Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022

Module Specifications

Module Title	Clinical Photography
Module Code	MF501A
Module Type	Faculty Common Module
Department	Orthodontics and Dentofacial Orthopedics
Faculty	Dental Sciences

1. Module Summary

The aim of this module is to promote the use of digital photography in dental practices, and to give the necessary information and techniques to achieve good quality and consistent results. This module will cover all aspects of the use of digital photography in dental practice and will be taken through photography from the basics to choosing correct equipment, setting up equipment to optimum settings, techniques for consistent imaging and the safe storage of images.

The student will be able to gain skills and experience of Clinical Photography through introduction to the range of services provided in the specialism and the interaction with patients and patient-centred practice. On completion of this module the student will be able to perform some routine standardized representational photography of patients.

2. Module Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	0:0:30
Total Hours of Interaction	30
Number of Weeks in a Term	26
Department Responsible	Orthodontics and Dentofacial Orthopedics
Total Module Marks	20
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

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

- MO-1. Describe the basic parts and functions of the camera, Principles behind the working of a camera, types of camera and components of a SLR camera.
- MO-2. Demonstrate how to use a DSLR.
- MO-3. Perform the skills of taking both intraoral and extraoral photographs of the module.



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**4. Module Contents**

**Theory**

1. Introduction: why take photography in dentistry, why go Digital
2. Basic terms: Resolution, focal depth, shutter speed, macro function/ lens
3. Camera basics: Types of cameras, parts of camera, working mechanism, suggested cameras for dental photography, standardization of photography, components of a SLR camera
4. Photographic set up: background, lighting, flash, room specifications
5. Clinical requirements for photographic records: Digital camera setup/ring flash/macro lens, special cheek retractors, dental mirrors
6. Clinical photography: extraoral and intraoral photography, helpful hints
7. Post processing your digital images: Downloading to the computer, editing of photographs, saving the images

**Practical Work**

1. Demonstration of the parts of the camera
2. Choosing the settings for photography
3. Extraoral and intraoral profiling of the patient

**5. Module Map (MO-PO-PSO Map)**

MOs	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3			3			3	3		
MO-3			3		3	3		3		3

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

**6. Module Teaching and Learning Methods**

Teaching and Learning Methods	Duration in Hours
Face to Face Lectures	6
Demonstration using Physical Models/Systems	7
Assessment and practical project	2
<b>Total Duration in Hours</b>	<b>15</b>

**7. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation			
Component 1: CE			
Subcomponent ▶	Theory		
Subcomponent Type ▶	SC1 - Assessment	SC2 - Assignment	
Maximum Marks ▶	10	10	
MO-1	x	x	
MO-2	x	x	
MO-2	x	x	

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

**8. Achieving MOs**

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 Module
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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

**9. Module Resources**

**a. Essential Reading**

1. Graber, Vanarsdall. Orthodontics Current Principles Techniques; 4<sup>th</sup> Ed
2. Matrishva B. Vyas. Clinical photography in dentistry. Jaypee publication.
3. Wolfgang Bengal. Mastering Digital Dental Photography. Quintessence 2006
4. Shadi S. Samawi. A Short Guide to Clinical Digital Photography in Orthodontics



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5. Eduardo C. Digital Dental Photography: A Clinician's Guide. Wiley-Blackwell. 2010.
6. Ahmad, Irfan . Digital and Conventional Dental Photography - A Practical Clinical Manual. Quintessence Publishing Company.
7. Gábor Matyasi. Interactive Dental Photography. Truewhy saloon.
8. Warren Rosenberg. How to Master Digital Dental Photography
9. Eliakim Mizrahi, Taylor & Francis Group. Orthodontic pearls: A selection of practical tips and clinical expertise. 2004



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

<b>Module Title</b>	Basic and Advanced Life Support
<b>Module Code</b>	MF502A
<b>Module Type</b>	Faculty Common Module
<b>Department</b>	Oral and Maxillofacial Surgery
<b>Faculty</b>	Dental Sciences

**1. Module Summary**

The Basic Life Support Program 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. Module Size and Credits:**

<b>Number of Credits</b>	1
<b>Credit Structure (Lecture: Tutorial: Practical)</b>	0:0:30
<b>Total Hours of Interaction</b>	30
<b>Number of Weeks in a Term</b>	26
<b>Department Responsible</b>	Oral and Maxillofacial Surgery
<b>Total Module Marks</b>	20
<b>Pass Criterion</b>	As per the Academic Regulations
<b>Attendance Requirement</b>	As per the Academic Regulations

**3. Module Outcomes (MOs)**

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

- MO-1.** Describe and demonstrate effective cardio pulmonary resuscitation with automatic External Defibrillator use for adults and children with 1 rescuer and 2 rescuers.
- MO-2.** Describe and demonstrate effective cardio pulmonary resuscitation for infants with 1 rescuer and 2 rescuers.
- MO-3.** Differentiate between adult, child and infant rescue techniques.
- MO-4.** Demonstrate rescue breathing for adult, child and infant
- MO-5.** Demonstrate bag mask technique for adult, child and infant
- MO-6.** Demonstrate relief of choking for adult, child and infant

**4. Module Contents**

**Unit 1:** Cardio pulmonary resuscitation with automatic External Defibrillator use for adults with 1 and 2 rescuer Signs and symptoms, Steps of CPR and demonstration, Steps of AED use and demonstration

**Unit 2:** Cardio pulmonary resuscitation with automatic External Defibrillator use for children with 1 and 2 rescuers Signs and symptoms, Steps of CPR with 1 rescuer, Steps of CPR with 2 rescuer, Steps of CPR and AED demonstration with 2 rescuers

**Unit 3:** Differences between adult, child and infant techniques, Rescue breathing for adults, Rescue breathing for infants and children Signs and symptoms, causes, methods, Bag mask technique for



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Adults, children and infants Rationale and method of use Demonstration, Relief of choking for adults, children and infants Signs and symptoms, causes Demonstration and Methods of rescue.

**5. Module Map (MO-PO-PSO Map)**

MOs	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3			3			3	3		
MO-3			3		3	3		3		3
MO-4	3	3			3		2	2		
MO-5					3			2		
MO-6					3				2	

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

**6. Module Teaching and Learning Methods**

Teaching and Learning Methods	Duration in Hours
Face to face lectures	4
Advanced Learning Centre	24
Term Tests, Laboratory Examination/Written Examination, Presentations	2
Total Duration in Hours incl assessment	30

**7. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation			
Subcomponent ▶	Component 1: CE		
	Theory		
Subcomponent Type ▶	SC1 - Assessment	SC2 - Assignment	
Maximum Marks ▶	10	10	
MO-1	x	x	
MO-2	x	x	
MO-3	x	x	
MO-4	x	x	
MO-5	x	x	
MO-6	x	x	



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

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

**8. Achieving MOs**

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 Module
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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

**9. Module Resources**

**Essential Reading**

1. Emergency Response Manual

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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

<b>Module Title</b>	<b>Personality Development and Soft Skills</b>
<b>Module Code</b>	MF503A
<b>Module Type</b>	Faculty Common Module
<b>Department</b>	Directorate of Transferable Skills and Leadership Development
<b>Faculty</b>	Dental Sciences

**1. Module Summary**

This module aims to help the student understand the nuances of interpersonal skills and orients them to handle work situations in a professional manner.

**2. Module Size and Credits:**

<b>Number of Credits</b>	1
<b>Credit Structure (Lecture: Tutorial: Practical)</b>	0:0:30
<b>Total Hours of Interaction</b>	30
<b>Number of Weeks in a Term</b>	26
<b>Department Responsible</b>	Directorate of Transferable Skills and Leadership Development
<b>Total Module Marks</b>	20
<b>Pass Criterion</b>	As per the Academic Regulations
<b>Attendance Requirement</b>	As per the Academic Regulations

**3. Module Outcomes (MOs)**

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

- MO-1.** Explain the concept of interpersonal effectiveness
- MO-2.** Identify the nuances of working in teams, conflict handling, and time management
- MO-3.** Apply the principles of interpersonal communication towards professional betterment
- MO-4.** Apply time management tools for optimal usage of time

**4. Module Contents**

**Unit 1:** Communication Skills for Interpersonal Effectiveness: Explanation of interpersonal effectiveness and its importance, working in teams, Understanding self – Johari Window, Conflict handling at workplace

**Unit 2:** Time Management: The concept of time management and self-management, time management matrix, time management tools

**5. Module Map (MO-PO-PSO Map)**

MOs	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		
MO-3			3		3	3		3		



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

MO-4	3	3			3		2	2		
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution										

**6. Module Teaching and Learning Methods**

Teaching and Learning Methods	Duration in Hours
Face to Face Lectures	10
Group discussions	4
Assessment	1
Total Duration in hours including assessment	15

**7. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE	
	Theory	
Subcomponent Type ▶	SC1 - Assessment	SC2 - Assignment
Maximum Marks ▶	10	10
MO-1	x	x
MO-2	x	x
MO-3	x	x
MO-4	x	x

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

**8. Achieving MOs**

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 Module
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	--
8.	Self-Learning	Self-study

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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

**9. Module Resources**

**Essential Reading**

Modules notes and ppt

  
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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

<b>Module Title</b>	Law for Dental Professionals
<b>Module Code</b>	MF501A
<b>Module Type</b>	Faculty Common Module
<b>Department</b>	School of Law
<b>Faculty</b>	Dental Sciences

**1. Module 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. Module Size and Credits:**

<b>Number of Credits</b>	1
<b>Credit Structure (Lecture: Tutorial: Practical)</b>	3:0:1
<b>Total Hours of Interaction</b>	15
<b>Number of Weeks in a term</b>	20
<b>Department Responsible</b>	School of Law
<b>Total Course Marks</b>	100
<b>Pass Criterion</b>	As per the Academic Regulations
<b>Attendance Requirement</b>	As per the Academic Regulations

**3. Module Outcomes (MOs)**

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

- MO-1.** Describe the structure and functioning of legal system of India
- MO-2.** Differentiate between various laws relevant to dentistry
- MO-3.** Identify clinical situations that pose ethical dilemma to be resolved with sound ethical principles
- MO-4.** Apply principles of professionalism in the practice of dentistry
- MO-5.** Communicate effectively with patients, colleagues and public to instill a positive dental attitude
- MO-6.** Prepare plan of action in case of litigation against the doctor

**4. Module Contents**

1	Introduction to Constitution of India		
2	Laws relevant to dentistry	i.	Civil, criminal laws and code of Procedure
		ii.	Laws relevant to consent
		iii.	Laws relevant to care
		iv.	Laws relevant to confidentiality
		v.	Consumer protection act
3	Ethics and code of conduct in dentistry	i	In clinical scenario
		ii	In research



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

4	Professionalism in dentistry	i	Concept and principles of professionalism
5	Communicating effectively		

**5. Module Map (MO-PO-PSO Map)**

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1						1				1
MO-2						1				1
MO-3					2	3				3
MO-4						3				3
MO-5				2	2	3				3
MO-6					2	2				2

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

**6. Module 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 – MSRHR	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		4
1. Case Study Presentation	04	
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		1
<b>Total Duration in Hours</b>		<b>15</b>

**7. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme.



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
	Component 1: CE	
Subcomponent ▶	Theory	
Subcomponent Type ▶	SC1 - Assessment	SC2 - Assignment
Maximum Marks ▶	10	10
MO-1	x	X
MO-2	x	X
MO-3	x	X
MO-4	x	X
MO-5	x	X
MO-6	x	X

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

**8. Achieving MOs**

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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

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9. Module Resources

f. Essential Reading

1. Module notes
2. Paul G. Medical Law for the Dental Surgeons. 1<sup>st</sup> Ed., Jaypee Publishers.

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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

<b>Module Title</b>	Teacher Training Module
<b>Module Code</b>	MF505A
<b>Module Type</b>	Elective Module
<b>Faculty</b>	Dental Sciences

**1. Module Summary**

The aim of this module is to equip students with necessary skills and competencies to deliver pedagogy by making him/her experience teaching. The student is trained to develop notes, plan lesson, use teaching learning methods and media effectively. The student is also trained to develop teaching or training content and session notes on an allotted topic and deliver the same to a group of students. They have to reflect on the student feedback and discuss the corrective measures with the supervisors.

**2. Module Size and Credits:**

<b>Number of Credits</b>	1
<b>Credit Structure (Lecture: Tutorial: Practical)</b>	0:0:30
<b>Total Hours of Interaction</b>	30
<b>Number of Weeks in a Term</b>	26
<b>Department Responsible</b>	Health Profession Education Unit
<b>Total Module Marks</b>	20
<b>Pass Criterion</b>	As per the Academic Regulations
<b>Attendance Requirement</b>	As per the Academic Regulations

**3. Module Outcomes (MOs)**

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

- MO-1.** Develop teaching notes on the allotted topic
- MO-2.** Deliver lecture to a group of students
- MO-3.** Submit questions for assessment relevant to the allotted topic
- MO-4.** Analyze student feedback to initiate corrective actions.

**4. Module Contents**

- Unit 1:** Educational objectives - Cognitive, Psychomotor, Affective
- Unit 2:** Writing learning outcomes
- Unit 3:** Teaching learning methods - Large group, small group, individual and domain based, teacher centered and student centered methods
- Unit 4:** Media - Power point presentations, use of chalk and board, handouts etc.
- Unit 5:** Tips for effective presentation
- Unit 6:** Assessment methodology - Different assessment methods, aligning with learning outcomes



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**5. Module Map (MO-PO-PSO Map)**

MOs	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3			3			3	3		
MO-3			3		3	3		3		3
MO-4		3		3			2		3	

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

**6. Module Teaching and Learning Methods**

Teaching and Learning Methods	Duration in Hours
<b>Theory</b>	
1. Lectures	10
2. Symposium/panel discussion	
3. Small Group discussion	5
4. Team teaching	5
5. Role Play/Case based discussion	
<b>Self-directed learning</b>	
1. Assignment	
2. Conferences/ seminars/CDE's	-
3. Workshops	-
4. Information Centre	5
5. Observership	
Term Tests, Laboratory Examination/Written Examination, Presentations	5
<b>Total Duration in Hours incl. assessment</b>	<b>30</b>

**7. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Subcomponent	Component 1: CE	
	Theory	
Subcomponent Type	SC1 - Assessment	SC2 - Presentation
Maximum Marks	10	10
MO-1	X	x
MO-2	X	x
MO-3	X	x
MO-4	X	x



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The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year.

Module reassessment policies are presented in the Academic Regulations document.

### 8. Achieving MOs

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 Module
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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

### 9. Module Resources

#### Essential Reading

1. Srinvasa D.K., Ananthakrishnan N, Sethuraman K.R, Santosh Kumar. (eds.) *Medical Education: Principles & Practice, (Revised Edition)* 1995.
2. Ananthakrishnan N, Sethuraman K.R, Santosh Kumar. (eds.) *Medical Education: Principles & Practice , Volume II –Trainers' Manual*, National Teacher Training Centre, Jawaharlal Institute of Medical Education and Research, (JIPMER), Pondicherry
3. Singh T., Gupta P., Singh D.(eds.) *Principles of Medical Education*, Fourth edition IAP National Publication House, Gwalior, JAYPEE Brothers, 2013



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

<b>Module Title</b>	<b>Research Methodology</b>
<b>Module Code</b>	MR501A
<b>Module Type</b>	Research Module
<b>Department</b>	Public Health Dentistry
<b>Faculty</b>	Dental Sciences

**1. Module Summary**

This module deals with the principles of research, research methodology and significant phases of research including sampling methodologies and its importance and development and validation of study tools. The students will be taught the significant role of Literature Review in a research cycle and the expectations from good literature review as well as procedure for systematic literature review. The essential aspects of technical communication to develop desirable writing skills for the preparation of research document including research paper as well as the skills for an effective presentation will also be discussed. The module also emphasizes the desirable close knit relation between innovation and concept of out of the box thinking. Students will get an insight into the privilege, honor and the associated responsibilities of a researcher.

**2. Module Size and Credits:**

<b>Number of Credits</b>	2
<b>Credit Structure (Lecture: Tutorial: Practical)</b>	15:0:30
<b>Total Hours of Interaction</b>	45
<b>Number of Weeks in a Term</b>	1
<b>Department Responsible</b>	Public Health Dentistry
<b>Total Module Marks</b>	100
<b>Pass Criterion</b>	As per the Academic Regulations
<b>Attendance Requirement</b>	As per the Academic Regulations

**3. Module Outcomes (MOs)**

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

- MO-1.** Describe the value, scope, relevance and mandatory steps of research as well as principles of effective research
- MO-2.** Apply the procedures outlined for systematic literature review
- MO-3.** Develop and present well-structured research proposal and research paper invoking clearly outlined principles
- MO-4.** Identify and apply the essential skills desirable for an effective technical presentation

**4. Module Contents**

**Unit 1 :** Foundations of Research – Definitions of Research, Mandatory Steps in Research, Types of Research, Relevance of Research for Innovation and Technology Development, Effective Research and Self Discipline.



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**Unit 2 :** Out Of the Box Thinking and Systematic approach in Research – Transformation to Impossible Thinking, Convergent and Divergent Thinking, Generation, Evaluation and Selection of Ideas.

**Unit 3:** Literature Review – Importance of Literature Review, Constituents of Good Literature Review, Strategies for Literature Search, Referencing, Paraphrasing, and Summarizing Academic Standards and Ethics Statistical Methods and Data Analysis

**Unit 4:** Research Proposal – Structure of a Good Research Proposal, Getting Started, Tips for Compilation of Good Research Proposal. Technical Communication - Research Paper for Publication- Significance of Problem Statement and its scope, Formulation of Hypothesis, Adequacy of Methodology, Significance of Presentation and Discussion of Results, Relevance and Importance of references.

**Unit 5 :** 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, 4P's Rule (Plan, Prepare, Practice and Present), Essentials of Effectiveness, Effective Pausing and Inclusive Answering.

**5. Module Map (MO-PO-PSO Map)**

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3			3			3	3		
MO-3			3		3	3		3		3
MO-4	3	3			3		2	2		

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

**6. Module Teaching and Learning Methods**

Teaching and Learning Methods	Duration in Hours
Face to Face Lecture	15
Interaction/tutorial	26
Written Examination, Assignment, Presentations	4
<b>Total Duration in Hours</b>	<b>45</b>



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46

**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**7. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Component 1: CE		
Subcomponent ▶	Theory	
Subcomponent Type ▶	SC1 - Written assessment	SC2 - Assignment
Maximum Marks ▶	50	50
MO-1	x	x
MO-2	x	x
MO-3	x	x
MO-4	x	x
The details of SC1, SC2, SC3 or SC4 are presented in the Programme Specifications Document.		

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

**8. Achieving MOs**

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 Module
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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment



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14.	Personal Management	--
15.	Leadership Skills	--

**9. Module Resources**

**Essential Reading**

1. Class notes
2. Booth WC, Colomb and GG Williams. (2005) The craft of Research, Chicago University.
3. William MK and Trochim. (2003) Research methods, 2<sup>nd</sup> edition, Biztantra Publications
4. Jonathan Grix. (2004) The foundation of Research, Palgrave Study Guides
5. Park's text book of Preventive and Social Medicine by K.Park. 2013, Banarasidas Bhanot Publishers 22<sup>nd</sup> Edition ISBN-10: 9382219021, ISBN-13: 978-9382219026.
7. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health by David L.
8. Katz, Joann G.Elmore, Dorothea M.G.Wild, Sean C.Lucan. 2014, Saunders Elsevier publication 4<sup>th</sup> Edition ISBN-13: 978-1455706587, ISBN-10: 1455706582.
9. Health research methodology: a guide for training in research methods (western pacific education in action series no.5) by WHO, 2001, World Health Organization 2<sup>nd</sup> edition ISBN-10: 929061157X , ISBN-13: 978-9290611578.
10. Research Methodology: Methods & Techniques Kothari C.R., Gaurav Garg 2013, New Age International Publishers, 3<sup>rd</sup> edition ISBN-13: 978-8122436235.
11. Introduction to Biostatistics by Mahajan B.K. 2010 7<sup>th</sup> Edition JPB Publishers ISBN-10: 8184487134, ISBN-13: 978-818448713.
12. Oral health Surveys basic methods by WHO, 2013, 5<sup>th</sup> edition World Health Organisation ISBN: 978 92 4 154864 9.

**Recommended Reading**

1. Wisker Gina. (2001) The post graduate research handbook, Palgrave
2. Rogg G and Petre M (2004) The unwritten rules of PhD research, open university



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<b>Module Title</b>	<b>Short Term Project/ Group Project</b>
<b>Module Code</b>	MR502A
<b>Module Type</b>	Research Module
<b>Department</b>	Respective Department
<b>Faculty</b>	Dental Sciences

**1. Module Summary**

The aim of the module is that the student group should be able to design a research project either individually or as a group in their areas of specialization with in short period. The students are required to develop a report for assessment. The student is expected to finalize the report in form of a manuscript and submit to the constituted committee. Students can choose a project from the priority areas of research of the Faculty.

**2. Module Size and Credits:**

<b>Number of Credits</b>	6
<b>Credit Structure (Lecture: Tutorial: Practical)</b>	15:0:30
<b>Total Hours of Interaction</b>	150
<b>Number of Weeks in a Term</b>	1
<b>Department Responsible</b>	Respective Department
<b>Total Module Marks</b>	100
<b>Pass Criterion</b>	As per the Academic Regulations
<b>Attendance Requirement</b>	As per the Academic Regulations

**3. Module Outcomes (MOs)**

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

- MO-1.** Work in a team and undertake a project in their area of specialization
- MO-2.** Apply the design methods and techniques for executing the project
- MO-3.** Apply appropriate methodology while formulating a project

**4. Module Contents**

Need for undertaking a project, design specifications, design, analysis, design evaluation and presentation

Project Management

Costing, Finance Management, Procurement, Project Development, Testing, Project Evaluation, Exhibition, Presentation

Team building, Team work, Leadership skills

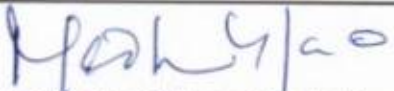
**5. Module Map (MO-PO-PSO Map)**

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		
MO-3			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 MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**6. Module Teaching and Learning Methods**

Teaching and Learning Methods		Duration in Hours
Face to Face Lectures	-	60
Others		
1. Guest Lecture	-	
2. Industry/Field Visit		
3. Brain Storming Sessions	10	
4. Group Discussions	40	
5. Discussing Possible Innovations	10	
Report writing, Presentations		90
Total Duration in Hours		150

**7. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE	
	Theory	
Subcomponent Type ▶	SC1 - Presentation	SC2 - Report
Maximum Marks ▶	50	50
MO-1	x	x
MO-2	x	x
MO-3	x	x

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

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



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**8. Achieving MOs**

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 Module
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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

**9. Module Resources**

**Essential Reading**

Class notes

Relevant books, articles and electronic resources



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

<b>Module Title</b>	Library Dissertation
<b>Module Code</b>	MR503A
<b>Module Type</b>	Research Module
<b>Department</b>	Respective Department
<b>Faculty</b>	Dental Sciences

**1. Module Summary**

This module deals with survey, review and critical appraisal of literature. The students will be able to use various search engines to identify and select literature with good scientific value. This module emphasizes the student to apply good practices and guidelines of a systematic and structured literature review to collect, comprehend, sort and document the available information in open literature. In the context of reviewed contemporary research work, student acquires wider breadth of knowledge and will be able to formulate research question to be addressed in the main dissertation. The module insists on the preparation and submission of manuscript for publication

**2. Module Size and Credits:**

<b>Number of Credits</b>	4
<b>Credit Structure (Lecture: Tutorial: Practical)</b>	15:0:30
<b>Total Hours of Interaction</b>	120
<b>Number of Weeks in a Term</b>	26
<b>Department Responsible</b>	Respective Department
<b>Total Module Marks</b>	100
<b>Pass Criterion</b>	As per the Academic Regulations
<b>Attendance Requirement</b>	As per the Academic Regulations

**3. Module Outcomes (MOs)**

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

- MO-1. Differentiate types of scientific literature, search strategies and research designs
- MO-2. Select topic relevant to the field of study
- MO-3. Select literature utilising different search engines
- MO-4. Review the selected literature and compile it
- MO-5. Formulate a research question based on the outcome of literature review
- MO-6. Prepare scientific manuscript for publication

**4. Module Contents**

Core specialty content

**5. Module Map (MO-PO-PSO Map)**

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		
MO-3			3		3	3		3		3
MO-4	3	3			3		2	2		
MO-5		2			3			2		2
MO-6			2						2	

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



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**6. Module Teaching and Learning Methods**

Teaching and Learning Methods	Duration in Hours
Interaction/tutorial/self-directed learning	<b>114</b>
Term Tests, Laboratory Examination/Written Examination, Presentations	<b>6</b>
<b>Total Duration in Hours</b>	<b>120</b>

**7. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

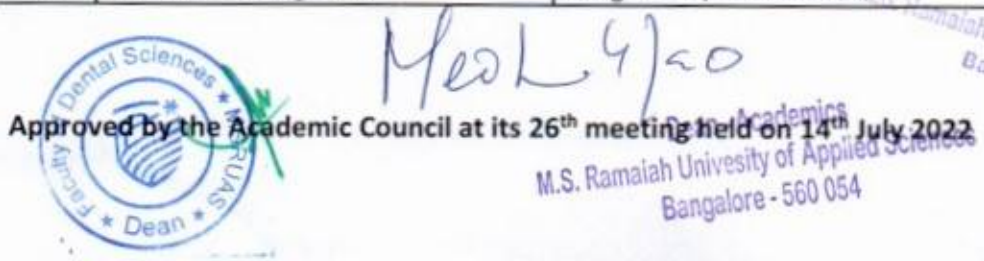
Focus of MOs on each Component or Subcomponent of Evaluation			
Component 1: CE			
Subcomponent ▶	Theory		
Subcomponent Type ▶	SC1 - Presentation	SC2 - Report	
Maximum Marks ▶	50	50	
MO-1	x	x	
MO-2	x	x	
MO-3	x	x	
MO-4	x	x	
MO-5	x	x	
MO-6	x	x	

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

**8. Achieving MOs**

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 Module
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 MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022

6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

Essential Reading

Relevant books, articles and electronic resources



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<b>Module Title</b>	Dissertation
<b>Module Code</b>	MR504A
<b>Module Type</b>	Research Module
<b>Department</b>	Respective Department
<b>Faculty</b>	Dental Sciences

**1. Module Summary**

This module is intended to give an insight to the students on application of principles of research methodology, preparation of research project proposal, research project management, execution of research project and effective technical communication and presentation. It also emphasizes the need and the relevance of a structured approach to identify a research topic and undertake research. This module provides an opportunity for students to apply theories and techniques learnt during programme work. It involves in-depth work in the chosen area of study.

**2. Module Size and Credits:**

<b>Number of Credits</b>	18
<b>Credit Structure (Lecture: Tutorial: Practical)</b>	15:0:30
<b>Total Hours of Interaction</b>	360
<b>Number of Weeks in a Term</b>	52
<b>Department Responsible</b>	Respective Department
<b>Total Module Marks</b>	100
<b>Pass Criterion</b>	As per the Academic Regulations
<b>Attendance Requirement</b>	As per the Academic Regulations

**3. Module Outcomes (MOs)**

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

- MO-1.** Critically review scholarly literature collected from various sources for the dissertation purpose and formulate a research problem
- MO-2.** Prepare and present a research proposal
- MO-3.** Conduct research to achieve research objectives
- MO-4.** Propose new ideas/methodologies or procedures for further improvement of the research undertaken
- MO-5.** Create research document and write research papers for publications
- MO-6.** Defend the research findings in front of scholarly audience

**4. Module Contents**

- 1. Research Methodology
- 2. Information search, retrieval and review
- 3. Project definition and project planning
- 4. Use of conceptual models and frameworks
- 5. Problem solving and Evaluation



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

6. Interpretations and drawing conclusions
7. Proposing ideas or methods for further work
8. Thesis writing
9. Oral presentation
10. Authoring Research paper

**5. Module Map (MO-PO-PSO Map)**

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		
MO-3			3		3	3		3		3
MO-4	3	3			3		2	2		3
MO-5		3				3		3		
MO-6			3						3	2

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

**6. Module Teaching and Learning Methods**

Teaching and Learning Methods		Duration in Hours
Information search, retrieval and review, Project definition and project planning	Reading Journal papers , books and other relevant materials and problem formulation	80
Use of conceptual models and Frameworks	Individual work with supervisors guidance	40
Problem solving and Evaluation	Individual work with supervisors guidance	60
Interpretations and drawing Conclusions	Individual work with supervisors guidance	40
Proposing ideas or methods for further work	Individual work with supervisors guidance	20
Presentation, Thesis/Report Writing and Viva Voce, Authoring Research paper	Presentation and Viva voce	110
	Thesis/Report writing, Authoring research paper	
Tests/Examinations/presentations		10
Total Duration in Hours		360

**7. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the



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following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Component 1: CE		
Subcomponent ▶	Theory	
Subcomponent Type ▶	SC1 - Presentation	SC2 - Report
Maximum Marks ▶	50	50
MO-1	x	x
MO-2	x	x
MO-3	x	x
MO-4	X	X
MO-5	x	x
MO-6	x	x

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

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

**8. Achieving MOs**

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 Module
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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

**9. Module Resources**

**Essential Reading**

Relevant books, articles and electronic resources



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<b>Module Title</b>	Conference Presentation
<b>Module Code</b>	MR505A
<b>Module Type</b>	Research Module
<b>Department</b>	Respective Department
<b>Faculty</b>	Dental Sciences

**1. Module Summary**

The aim of this module is to make a student submit and present a research paper in a conference based on his/her research work during his/her programme. The student is required to carry out original research, author a conference paper and present it. The student is also required to submit the paper to a conference approved by the department and make a presentation to the examiners in the faculty.

**2. Module Size and Credits:**

<b>Number of Credits</b>	1
<b>Credit Structure (Lecture: Tutorial: Practical)</b>	0:0:30
<b>Total Hours of Interaction</b>	30
<b>Number of Weeks in a Term</b>	26
<b>Department Responsible</b>	Respective Department
<b>Total Module Marks</b>	100
<b>Pass Criterion</b>	As per the Academic Regulations
<b>Attendance Requirement</b>	As per the Academic Regulations

**3. Module Outcomes (MOs)**

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

- MO-1.** Choose a contemporary topic in his/her area of study for research
- MO-2.** Write a conference paper based on research and present in the conference

**4. Module Contents**

1. Selection of topic for research
2. Critical review on the chosen topic
3. Collection of relevant data
4. Presentation and Analysis of data
5. Interpretation of data

**5. Module Map (MO-PO-PSO Map)**

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		

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

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58



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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**6. Module Teaching and Learning Methods**

Teaching and Learning Methods		Duration in Hours
Conference Publication	Research work	<b>10</b>
	Authoring and Presentation of paper	<b>5</b>
	Presentation preparations	<b>10</b>
Evaluation of Report and Presentations		<b>5</b>
Total Duration in Hours		<b>30</b>

**7. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Component 1: CE		
Subcomponent ▶	Theory	
Subcomponent Type ▶	SC1 - Presentation	SC2 - Report
Maximum Marks ▶	50	50
MO-1	x	x
MO-2	x	x
The details of SC1, SC2, SC3 or SC4 are presented in the Programme Specifications Document.		

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

**8. Achieving MOs**

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 Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment

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

**9. Module Resources**

**Essential Reading**

Relevant books, articles and electronic resources

  
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<b>Module Title</b>	<b>Journal Publication</b>
<b>Module Code</b>	MR506A
<b>Module Type</b>	Research Module
<b>Department</b>	Respective Department
<b>Faculty</b>	Dental Sciences

**1. Module Summary**

The aim of this module is to make a student submit a research paper to a journal based on his/her research work during the programme. The student is required to carry out original research, author a journal paper for publication. The student is also required to submit the research paper to a peer reviewed, indexed journal approved by the department and make a presentation to the examiners in the faculty

**2. Module Size and Credits:**

<b>Number of Credits</b>	1
<b>Credit Structure (Lecture: Tutorial: Practical)</b>	0:0:30
<b>Total Hours of Interaction</b>	30
<b>Number of Weeks in a Term</b>	26
<b>Department Responsible</b>	Respective Department
<b>Total Module Marks</b>	100
<b>Pass Criterion</b>	As per the Academic Regulations
<b>Attendance Requirement</b>	As per the Academic Regulations

**3. Module Outcomes (MOs)**

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

**MO-1.** Choose a contemporary topic in his/her area of study for research

**MO-2.** Write a research paper based on research and publish in a journal

**4. Module Contents**

1. Selection of topic for research
2. Critical review on the chosen topic
3. Collection of relevant data
4. Presentation and Analysis of data
5. Interpretation of data

**5. Module Map (MO-PO-PSO Map)**

6.

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		

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

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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**7. Module Teaching and Learning Methods**

Teaching and Learning Methods		Duration in Hours
Journal Publication	Research work	<b>10</b>
	Authoring and Presentation of paper	<b>10</b>
	Presentation preparations	<b>5</b>
Evaluation of Report and Presentations		<b>5</b>
Total Duration in Hours		<b>30</b>

**8. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE	
	Theory	
Subcomponent Type ▶	SC1 - Presentation	SC2 - Report
Maximum Marks ▶	50	50
<b>MO-1</b>	x	x
<b>MO-2</b>	x	x
The details of SC1, SC2, SC3 or SC4 are presented in the Programme Specifications Document.		

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

**9. Achieving MOs**

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 Module
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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--


**10. Module Resources**

**Essential Reading**

Relevant books, articles and electronic resources,

  
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<b>Module Title</b>	Training in any other institution in India or Abroad
<b>Module Code</b>	MG501A
<b>Module Type</b>	Elective Module
<b>Faculty</b>	Dental Sciences

**1. Module Summary**

The aim of this module is to make a student undergo training in an area of his/her interest to develop proficiency within the faculties available in any other institution in India or abroad. The student will choose a topic for training and undergo training in a professional setup. The student should develop a report and make a presentation on his/her training undergone.

**2. Module Size and Credits:**

<b>Number of Credits</b>	3
<b>Credit Structure (Lecture: Tutorial: Practical)</b>	0:0:90
<b>Total Hours of Interaction</b>	90
<b>Number of Weeks in a Term</b>	26
<b>Department Responsible</b>	Respective Department
<b>Total Module Marks</b>	20
<b>Pass Criterion</b>	As per the Academic Regulations
<b>Attendance Requirement</b>	As per the Academic Regulations

**3. Module Outcomes (MOs)**

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

**MO-1.** Apply tools and techniques proficiently in the area of the training undergone for efficient execution of the stated objective

**MO-2.** Make presentation on training obtained

**4. Module Contents**

Related to training programme

**5. Module Map (MO-PO-PSO Map)**

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		

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

**6. Module Teaching and Learning Methods**

Teaching and Learning Methods		Duration in Hours
Training	Training	80
	Report writing	
	Presentation preparation	
Evaluation of Report and Presentations		10
Total Duration in Hours		90

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**7. Module Assessment and Reassessment**

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
	Component 1: CE	
Subcomponent ▶	Theory	
Subcomponent Type ▶	SC1 - Assessment	SC2 - Assignment
Maximum Marks ▶	10	10
<b>MO-1</b>	X	x

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

**8. Achieving MOs**

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 Module
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	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

**9. Module Resources**

Relevant books, articles and electronic resource

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**Programme Structure and Course Details of MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022**

**Annexure I - MDS in Oral & Maxillofacial Pathology and Oral Microbiology 2022  
Curriculum Framework and Assessment**

S. No.	Course Code	Course Title	Credits	Assessment Marks
I	<b>Programme Specialization Teaching Course</b>			
1	PMC501A	Preclinical and Laboratory Phase	48	400
2	PMC502A	Oral Pathology and Oral Oncology	48	400
3	PMCS03A	Advanced Diagnostics and Comprehensive Oral Pathology and	24	400
II	<b>Research Modules</b>			
1	MR501A	Research Methodology	2	40
2	MR502A	Short term project/Group project	6	100
3	MR503A	Library Dissertation	4	60
4	MR504A	Dissertation	10	200
5	MR505A	Conference Presentation	1	20
6	MR506A	Journal Publication	1	20
III	<b>Faculty-Common Modules</b>			
1	MF501A	Clinical Photography	1	20
2	MF502A	Basic and Advanced Life Support	1	20
3	MF503A	Personality Development and Soft Skills	1	20
	MF504A	Law for Dental Professionals	1	20
IV	<b>Elective Modules</b>			
1	MG501A	Training in any other institution in India or Abroad	3	60
2	MF505A	Teacher Training Module	1	20
V	<b>Programme End Examination</b>			
1	a. Part I Programme End Examination		20	700
	b. Part II Programme End Examination			
	Total		180	2500

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66



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