



Programme Specifications

B.Sc. (Hons) Programme

Programme:
Biotechnology

Department:
Biotechnology

Faculty of Life and Allied Health Sciences
M.S. Ramaiah University of Applied Sciences

Programme Specifications: B.Sc. (Hons)-Biotechnology	
Faculty	Faculty of Life and Allied Health Sciences
Programme	B.Sc. (Hons)-Biotechnology
Dean	

1. Title of the Award

B.Sc. (Hons)-Biotechnology

2. Modes of study

Full-Time

3. Awarding Institution / Body

M.S.Ramaiah University of Applied Sciences – Bengaluru, India

4. Joint Award

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5. Teaching Institution

Faculty of Life and Allied Health Sciences

6. Date of Programme Specifications

February 2018

7. Date of Programme Approval by the Academic Council of MSRUAS

April 2018 (Revised in July 2019)

8. Next Review Date

May 2021

9. Programme Approving Regulatory Body and Date of Approval

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10. Programme Accrediting Body and Date of Accreditation

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11. Grade Awarded by the Accreditation Body

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12. Programme Accreditation Validity

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13. Programme Benchmark

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14. Rationale for the Programme

Biotechnology is a technology based on biology – biotechnology harnesses cellular and bimolecular processes to develop technologies and products that help improve our lives and the health of our planet. Biotechnology deals with cell structures and dynamics, genetics, macromolecular structure, microbiology, chemistry, biochemistry, biophysics, biomathematics, bio-informatics as applied to medical, animal, plant, environmental and industrial biotechnology products and human genome project.

B.Sc. Honours in Biotechnology is an undergraduate degree programme designed to create motivated, energetic, thinking and creative graduates to fill the roles of research assistants/associates, marketing executives, maintenance engineers, computational analysts and even administrators. With additional qualification and training they can seek employment as teachers, professors, scientists, professionals, independent practitioners and entrepreneurs.

Indian economy is experiencing an upward growth right from the beginning of 21st century. The average GDP growth rate is varying from 6.5% to 9%. There are 630 million people are below 25 years of age or younger. Many of these youth would like to work as research associates, marketing executives, maintenance engineers, computational analysts and even as administrators, teachers, professors, scientists and professionals in the growing and promising areas of biotechnology. A large number of youth in the age group of 18 or below who are for university education are considering biotechnology programme for career prospects. RUAS, a young and progressive University with excellent teaching and learning resources and faculty base would like to offer B.Sc. (Hons) in Biotechnology as an undergraduate programme to these aspiring youngsters. The proposed B.Sc. (Hons) programme designed will act as a foundation and first degree to prepare research assistants/associates, marketing executives, maintenance engineers, computational analysts and even administrators in biotechnology industries. With additional qualification and training the graduates can seek employment as teachers, professors, scientists, professionals and administrators to meet the challenges of growing economy as well as to meet the growing aspirations of the youth.

The B.Sc. (Hons)-Biotechnology programme at Faculty of Biological and Life Sciences, RUAS has been developed by the members of the faculty based on interactions with various universities, research establishments and industries in India and abroad.

The curriculum is outcome based and it imbibes required theoretical concepts and practical skills in the domain. By undergoing this programme, students develop critical, analytical thinking and problem solving abilities for a smooth transition from academic to real-life work environment. Opportunities are provided for the students to do internship in organizations involved in research & development and also execute a well-defined project in a team to enhance practical skills and problem solving abilities. The students are required to submit a well written project report as partial fulfilment for the award of the degree, which will help develop skills of documenting scientific work.

In addition students are trained in communication skills and interdisciplinary topics to enhance their scope. The various new features like undergoing internship and executing a full-fledged academic project in the programme make the students more versatile generating wide range of opportunities including registering for Masters and Ph.D. programme in a chosen subject area, if one wishes to be considering teaching in a university or working for a research Laboratory as a scientist. The programme embeds requisite knowledge and training for a graduate to become an entrepreneur if he/she wishes to.

The above mentioned features of the programme, advanced teaching and learning resources, and experience of the faculty members with their strong connections with industry and research organizations makes this programme unique.

15. Programme Mission

The purpose of the programme is creation of knowledgeable human resources to work in Government, Semi-Government, Private and Public sector owned Biotechnology organisations and also to assume administration positions. With further progression in education, graduates should be able to undertake teaching and research in colleges and universities as well as in scientific organisations.

16. Graduate Attributes

1. Ability to apply fundamental knowledge of Biology, Chemistry, Mathematics, Statistics and computer to solve real life problems in their chosen domain
2. Ability to perform administrative duties in government, semi-government, private and public sector organizations
3. Ability to teach in schools, colleges and universities with additional qualification and training
4. Ability to understand and solve scientific problems by conducting experimental investigations
5. Ability to apply appropriate tools, techniques and understand utilization of resources appropriately in various Laboratories
6. Ability to apply basic programming concepts in their chosen domains
7. Ability to understand the effect of scientific solutions on legal, cultural, social and public health and safety aspects
8. Ability to develop sustainable solutions and understand their effect on society and environment
9. Ability to apply ethical principles to scientific practices and professional responsibilities
10. Ability to work as a member of a team, to plan and to integrate knowledge of various disciplines and to lead teams in multidisciplinary settings
11. Ability to make effective oral presentations and communicate technical ideas to a broad audience using written and oral means
12. Ability to adapt to the changes and advancements in science and engage in independent and life-long learning

17. Programme Goal

The programme acts as a foundation degree and helps to develop critical, analytical and problem solving skills at first level. The foundation degree makes the graduates employable in scientific organisations and also to assume administrative positions in various types of organisations. With additional qualifications and training help the graduates to pursue a career in academics or scientific organisations as a researcher.

18. Programme Objectives

The Bachelor of Science honours degree programme in Biotechnology imparts knowledge and understanding of biological systems and their behaviour for various inputs/stimuli originating from the surrounding environment. The Programme also provides sufficient understanding and cognitive abilities to design, develop and incorporate scientific methods, techniques, and processes for biological systems of study to achieve the desired results. In addition, the programme imparts knowledge and training to develop transferable skills and entrepreneurship abilities.

The objectives of the programme are to enable the students to:

1. To impart knowledge of biology, chemistry and mathematics essential for study of biotechnology
2. To impart knowledge and understanding of biotechnology systems-medical, animal, plant, environmental and industrial
3. To train on computational techniques that are essential for design and analysis of biotechnological systems
4. To train students on use of various instrumentation for the study and observation of biological systems and record their behaviour
5. To model, simulate and analyze the behaviour of biotechnology systems
6. To observe problems encountered in biological systems and propose possible solutions
7. To train students to conduct scientific experiments and document scientific investigations
8. To use commercial software tools for scientific simulations and documentation
9. To educate on professional ethics, economics, social sciences, inter personal and communication skills relevant to professional practice
10. To provide a general perspective on lifelong learning and opportunities for a career in industry, scientific organization, education, business and commerce

19. Intended Learning Outcomes of the Programme

The Intended Learning Outcomes (ILOs) are listed under four headings:

1. Knowledge and Understanding, 2. Cognitive Skills 3. Practical Skills and 4. Capability / Transferable Skills.

1. Knowledge and Understanding

After undergoing this programme, a student will be able to:

- KU1:** Explain with illustrations structure, function and behaviour of human, animal, plant, industrial and environmental biological systems
- KU2:** Explain biomolecular structures and interactions in various biological systems
- KU3:** Recognise tools, techniques and processes followed in biotechnology industries
- KU4:** Collate data required for design and analysis of biotechnological products

2. Cognitive Skills

After undergoing this programme, a student will be able to:

- CS1:** Compare and Contrast various biological systems from biotechnology perspective
- CS2:** Model biological systems and their interactions from biotechnology perspective
- CS3:** Analyse biomolecular interactions and factors affecting such interactions to design effective biotechnology products
- CS4:** Process Bioinformatics data to draw meaningful conclusions

3. Practical Skills

After undergoing this programme, a student will be able to:

- PS1:** Choose appropriate instrumentation system for observation and evaluation of biological systems
- PS2:** Conduct experiments on biological systems as per the standards and protocols
- PS3:** Use commercially available software tools for modelling, simulation and analysis of defined biological systems
- PS4:** Operate systems that are used in biotechnology industries

4. Capability / Transferable Skills

After undergoing this programme, a student will be able to:

- TS1:** Manage information, develop scientific reports and make presentations
- TS2:** Build, Manage and Lead a team to successfully complete a project and Communicate across teams and organizations to achieve professional objectives
- TS3:** Work under various constraints to meet project targets
- TS4:** Adopt to the chosen profession by continuously upgrading his/her knowledge and understanding through Life-long Learning philosophy

Programme Structure**SEMESTER 1**

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	18BTC101A	Macromolecular Structure and Analysis	3			3	100
2	18BTC102A	Biophysics and Instrumentation	3			3	100
3	18BTC103A	Cell Structure and Dynamics	3			3	100
4	18BTC104A	Chemistry-I	3			3	100
5	18BTC105A	Biomathematics	2	2		3	100
6	18CSN106A	Computers and Programming with C	2	2		3	100
7	18BTL107A	Biochemistry Laboratory			2	1	50
8	18BTL108A	Basic Instrumentation and Cell Biology Laboratory			2	1	50
9	18BTL109A	Chemistry-I Laboratory			2	1	50
10	19HST103A	Communication Skills-1	3			3	100
Total			19	4	6	24	850
Total number of contact hours per week			29 hours				
Number of credits can be registered			Minimum	19	Maximum	24	

SEMESTER 2

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	18BTC110A	Organic Mechanisms in Biology	3			3	100
2	18BTC111A	Principle of Transmission Genetics	3			3	100
3	18BTC112A	Principles of Microbiology	3			3	100
4	18BTC113A	Biostatistics	3	2		4	100
5	18BTC114A	Chemistry-II	3			3	100
6	18BTL115A	Cytogenetic Techniques Laboratory			2	1	50
7	18BTL116A	Microbiology Laboratory			2	1	50
8	18BTL117A	Chemistry-II Laboratory			2	1	50
9	18BTL118A	Mathematical Tools and Techniques (MatLab)			2	1	50
10	19HST104A	Communication Skills-2	3			3	100
Total			18	2	8	23	800
Total number of contact hours per week			28 hours				
Number of credits can be registered			Minimum	18	Maximum	23	

SEMESTER 3

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	18BTC201A	Molecular Genetics	3			3	100
2	18BTC202A	Principles of Immunology	3			3	100
3	18BTC203A	Molecular Biology	3			3	100
4	18BTC204A	Plant and Animal Tissue culture techniques and Applications	3			3	100
5	18BTC205A	Chemistry-III	3			3	100
6	18CSN206A	Computer Data Structures and Computer Organization	2	2		3	100
7	18BTL207A	Immunology & Molecular Biology Laboratory			2	1	50
8	18BTL208A	Tissue Culture Laboratory			4	2	50
9	18BTL209A	Chemistry-III Laboratory			2	1	50
10	19HST101A	Elements of Social Science and Ethics	2			2	50
11	18BTN201A	Environmental Studies	2			2	50
Total			21	2	8	26	850
Total number of contact hours per week			31 hours				
Number of credits can be registered			Minimum	20	Maximum		26

SEMESTER 4

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	18BTC210A	Recombinant DNA Technology	3			3	100
2	18BTC211A	Plant Biotechnology	3			3	100
3	18BTC212A	Animal Biotechnology	3			3	100
4	18BTC213A	Biodiversity & Taxonomy	3			3	100
5	18BTC214A	Chemistry-IV	3			3	100
6	18BTC215A	Computational Biology and Bioinformatics	3			3	100
7	18BTL216A	Recombinant DNA Technology Laboratory			2	1	50
8	18BTL217A	Chemistry-IV Laboratory			2	1	50
9	18BTL218A	Bioinformatics Laboratory			4	2	50
10	19HST201A	Constitution, Human Rights and Law	2			2	50
Total			20		8	24	800
Total number of contact hours per week			28 hours				
Number of credits can be registered			Minimum	18	Maximum		24

SEMESTER 5

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	18BTC301A	Genomics & Proteomics	3			3	100
2	18BTC302A	Research Methodology	3			3	100
3*	18BDSE301A 18BDSE302A	1. Environmental Biotechnology 2. Agricultural Biotechnology	4			4	100
4*	18BDSE303A 18BDSE304A	1. Industrial Biotechnology 2. Pharmaceutical Biotechnology	4			4	100
5*	18BDDEL305A 18BDSE306A	1. Environmental Biotechnology Laboratory 2. Agricultural Biotechnology Laboratory			4	2	50
6*	18BDDEL307A 18BDDEL308A	1. Industrial Biotechnology Laboratory 2. Pharmaceutical Biotechnology Laboratory			4	2	50
7	18BTIS307A 18BTIS308A	i. Internship ii. Seminar (Choose any)			6	3	50
8	18BTL309A	Industrial Visit			6	3	50
9	18OEE31XA	Open Elective -1	3			3	100
Total			17		20	27	700
Total number of contact hours per week			37 hours				
Number of credits can be registered			Minimum		21	Maximum	27

SEMESTER 6

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	18BTC310A	Medical Biotechnology	3			3	100
2	18BTC311A	Bioethics, IPR and Biosafety	3			3	100
3	18MCN311A	Introduction to Management and Entrepreneurship	3			3	100
4	18OEE32XA	Open Elective -2	3			3	100
5	18BTP312A	Project Work			24	12	100
Total			12		24	24	500
Total number of contact hours per week			36 hours				
Number of credits can be registered			Minimum	18	Maximum		24

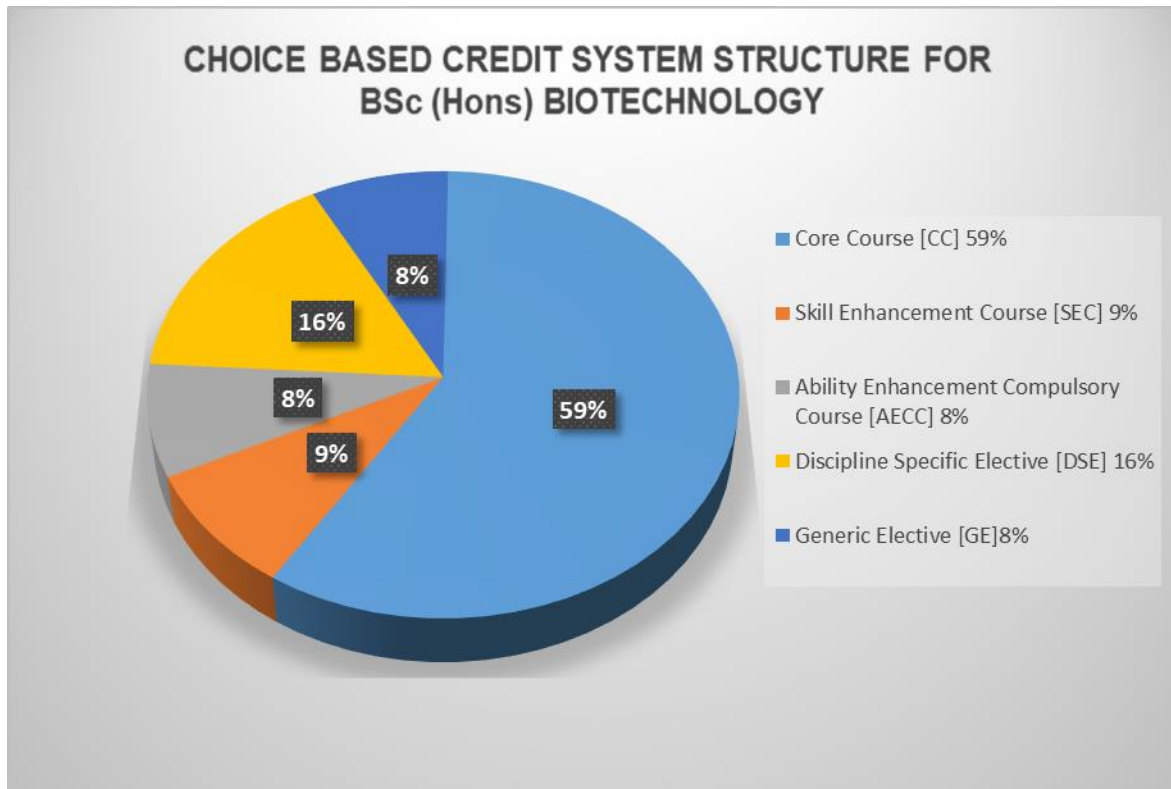
* **Discipline Specific Electives:** Students should choose one course out of the choices given

Open Elective Courses:

A number of electives from faculty of Mathematical and Physical Sciences, Engineering, Management and Commerce, Art and Design, Hospitality Management and Catering Technology, Pharmacy, Dental Sciences will be announced one semester prior to the scheduled semester

Proposed Choice Based Credit System Structure for B.Sc. (Hons)-Biotechnology									Total Credits
Core Course [CC]	18BTC101A Macromolecular Structure and Analysis Credits =3	18BTC102A Biophysics and Instrumentation Credits = 3	18BTC103A Cell Structure and Dynamics Credits = 3	18BTC104A Chemistry-I Credits = 3	18BTL107A Biochemistry Laboratory Credits = 1	18BTL108A Basic Instrumentation and Cell Biology Laboratory Credits = 1	18BTL109A Chemistry-I Laboratory Credits = 1	18BTC110A Organic Mechanisms in Biology Credits =3	87
	18BTC111A Principle of Transmission Genetics Credits =3	18BTC112A Principles of Microbiology Credits =3	18BTC113A Biostatistics Credits = 4	18BTC114A Chemistry-II Credits =3	18BTL115A Cytogenetic Techniques Laboratory Credits = 1	18BTL116A Microbiology Laboratory Credits = 1	18BTL117A Chemistry-II Laboratory Credits = 1	18BTC201A Molecular Genetics Credits =3	
	18BTC202A Principles of Immunology Credits =3	18BTC203A Molecular Biology Credits =3	18BTC204A Plant and Animal Tissue culture techniques and Applications Credits =3	18BTC205A Chemistry-III Credits =3	18BTL207A Immunology & Molecular Biology Laboratory Credits = 1	18BTL208A Tissue Culture Laboratory Credits = 2	18BTL209A Chemistry-III Laboratory Credits = 1	18BTC210A Recombinant DNA Technology Credits =3	
	18BTC211A Plant Biotechnology Credits =3	18BTC212A Animal Biotechnology Credits =3	18BTC213A Biodiversity & Taxonomy Credits =3	18BTC214A Chemistry-IV Credits =3	18BTC215A Computational Biology and Bioinformatics Credits =3	18BTL216A Recombinant DNA Technology Laboratory Credits = 1	18BTL217A Chemistry-IV Laboratory Credits = 1	18BTL218A Bioinformatics Laboratory Credits = 2	
	18BTC301A Genomics & Proteomics Credits =3	18BTC302A Research Methodology Credits =3	18BTC310A Medical Biotechnology Credits =3	18BTC311A Bioethics, IPR and Biosafety Credits =3					
Skill Enhancement Courses [SEC]	18BTC105A Biomathematics Credits =3	18CSN106A Computers and Programming with C Credits = 3	18BTL118A Mathematical Tools and Techniques (MatLab) Credits = 1	18CSN206A Computer Data Structures and Computer Organization Credits =3	18MCN311A Introduction to Management and Entrepreneurship Credits =3				13
Discipline Specific Courses [DSE]	18BTDSE301A Environmental Biotechnology 18BTDSE302A Agricultural Biotechnology Credits =4	18BTDSE303A Industrial Biotechnology 18BTDSE304A Pharmaceutical Biotechnology Credits =4	18BTDSE305A Environmental Biotechnology Laboratory 18BTDSE306A Agricultural Biotechnology Laboratory Credits = 2	18BTDSE307A Industrial Biotechnology Laboratory 18BTDSE308A Pharmaceutical Biotechnology Laboratory Credits = 2	18BTP312A Project Work Credits = 12				24
Ability Enhancement Compulsory Course [AECC]	19HST103A Communication Skills-1 Credits =3	19HST104A Communication Skills-2 Credits =3	19HST101A Elements of Social Science and Ethics Credits =2	18BTN201A Environmental Studies Credits =2	19HST201A Constitution, Human Rights and Law Credits =2				12
Generic Elective [GE]	18BTIS307A Internship 18BTIS308A Seminar Credits =3	18BTL309A Industrial Visit/ Institutional Visit Credits =3	18OEE31XA Open Elective -1 Credits =3	18OEE32XA Open Elective -2 Credits =3					12
CC= 87; SEC= 13; DSE= 24; AECC = 12; GE = 12									
TOTAL CREDITS =									148

Structure	Credits
Core Course [CC] 59%	87
Skill Enhancement Course [SEC] 9%	13
Ability Enhancement Compulsory Course [AECC] 8%	12
Discipline Specific Elective [DSE] 16%	24
Generic Elective [GE]8%	12



20. Programme Delivery

As per Time Table

21. Teaching and Learning Methods

The module delivery comprises of a combination of few or all of the following:

1. Face to face lectures using audio-visuals
2. Workshops-group discussions, debates, presentations
3. Demonstrations
4. Guest lectures
5. Laboratory-work/Field work/Workshop
6. Industry visit
7. Seminars
8. Group Exercises
9. Project Work
10. Project Exhibitions
11. Technical Events

22. Assessment and Grading

1. Every course will be assessed for a weight of 100
2. There are two components- Component-1 and Component-2
3. Component-1 carries a weight of 50% and Component -2 carries a weight of 50%
4. **Theory Courses:**

Component-1 (CE – Continuous evaluation) is subdivided in to mid-term test, assignment and attendance. However, the weightage of subcomponents such as mid-term test and assignment will be at the discretion of the course leader.

The attendance of the student will be evaluated as follows: 10 marks will be awarded to the student > 75% as a part of Continuous Evaluation. The marks will be awarded as follows:

- 75-80% =2 marks
- 81-85%= 4 marks
- 86-90%= 6 marks
- 91-95%= 8 marks
- 96-100%= 10 marks
- < 75%= 0

Component-2 is a written examination(SEE – Semester End Examination) carrying 50% weight

5. **Laboratory Courses:**
 - Component-1:**(CE): Conduction of Laboratory Exercises and Submission of Report: 50% weight
 - Component-2:** SEE (Semester End Laboratory Examination): 50% weight
6. A minimum of overall 40% is required for a pass. Attending SEE is mandatory.
7. The marks distribution for each course is given in the programme structure- section 20
8. Other flexibilities (exceptions) are as per the Academic Regulations of B.Sc. (Hons)-Biotechnology programme.

23. Attendance

A minimum of 75% attendance is compulsory.

24. Award of Class

As per the Academic Regulations for B.Sc. (Hons)-Biotechnology Programme

25. Student Support for Learning

Students are given the following support:

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

Following are the 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 the students to see their assessed work
6. Review by external examiners and external examiners reports
7. Staff Student Consultative Committee meetings
8. Student exit feedback
9. Subject Assessment Board (SAB)
10. Programme Assessment Board (PAB)

27. Curriculum Map

Course Code	Intended Learning Outcomes											
	Knowledge and Understanding				Cognitive (Thinking) Skills (Critical, Analytical, Problem Solving)				Practical skills			
	KU1	KU2	KU3	KU4	CS1	CS2	CS3	CS4	PS1	PS2	PS3	PS4
18BTC101A	X	X			X		X					
18BTC102A		X	X				X					
18BTC103A	X	X				X	X					
18BTC104A	X	X	X					X				
18BTC105A	X		X					X				
18CSN106A	X			X				X	X			
18BTL107A							X		X	X	X	
18BTL108A							X		X	X	X	
18BTL109A							X		X	X	X	
19HST103A			X			X	X		X		X	
18BTC110A		X	X			X	X					
18BTC111A	X	X				X	X	X				
18BTC112A	X	X			X	X						
18BTC113A	X	X			X	X	X	X			X	X
18BTC114A	X		X				X	X				
18BTL115A							X	X	X	X		
18BTL116A							X	X	X	X		
18BTL117A							X		X	X	X	
18BTL118A							X	X	X	X	X	X
19HST104A			X			X	X		X		X	
18BTC201A	X	X			X	X	X					
18BTC202A	X	X	X		X		X					
18BTC203A	X	X			X	X	X					
18BTC204A	X	X	X		X		X					
18BTC205A	X		X				X	X				
18CSN206A	X			X			X	X	X	X	X	X
18BTL207A							X	X	X	X	X	
18BTL208A			X				X		X	X	X	X
18BTL209A							X		X	X	X	
18BTN201A	X	X	X		X		X					
19HST101A			X			X	X		X		X	
18BTC210A	X	X	X	X		X	X					
18BTC211A	X	X	X	X		X	X					
18BTC212A	X	X	X	X		X	X					
18BTC213A	X	X	X		X	X	X					
18BTC214A	X		X				X	X				
18BTC215A	X	X	X	X			X	X				
18BTL216A							X	X	X	X	X	
18BTL217A			X				X		X	X	X	X
18BTL218A							X	X	X	X	X	X
19HST201A	X	X			X	X	X					
18BTC301A	X	X				X	X	X				
18BTC302A	X	X			X	X	X					
18BTC303A	X		X	X		X	X					
18BTC304A	X			X				X				
18BTL305A							X		X	X	X	X
18BTL306A							X		X	X	X	X
18BTIS307A			X	X			X	X		X	X	X
18BTIS308A			X	X		X	X	X				
18BTL309A	X		X	X			X					X
18OEE30XA	X	X	X	X	X	X	X	X	X	X	X	X
18BTC310A	X	X	X	X			X					
18BTC311A	X		X	X			X	X				
18BTP312A	X	X	X	X	X	X	X	X	X	X	X	X
18MCN311A	X	X				X	X					
18OEE31XA	X	X	X	X	X	X	X	X	X	X	X	X

28. Capability / Transferable Skills Map

Course Code	Skills								
	GK	SL	WC	OC	P	B	IM	PM	L
18BTC101A		X	X		X				
18BTC102A		X	X		X				
18BTC103A		X	X		X				
18BTC104A		X	X		X				
18BTC105A		X	X		X				
18CSN106A	X	X	X		X	X			
18BTL107A	X	X	X	X	X				
18BTL108A	X	X	X	X	X				
18BTL109A	X	X	X	X	X				
19HST103A	X	X	X	X	X	X	X	X	
18BTC110A		X	X		X				
18BTC111A		X	X		X				
18BTC112A		X	X		X				
18BTC113A		X	X		X				
18BTC114A		X	X		X				
18BTL115A	X	X	X	X	X	X			
18BTL116A	X	X	X	X	X	X			
18BTL117A	X	X	X	X	X	X			
18BTL118A	X	X	X	X	X				
19HST104A	X	X	X	X	X	X	X	X	
18BTC201A		X	X		X	X			
18BTC202A		X	X		X	X			
18BTC203A		X	X		X	X			
18BTC204A		X	X		X	X			
18BTC205A		X	X		X	X			
18CSN206A	X	X	X		X	X	X		
18BTL207A	X	X	X	X	X	X	X		
18BTL208A	X	X	X	X	X	X	X		
18BTL209A	X	X	X	X	X	X	X		
19HST101A	X	X	X	X	X	X	X	X	
18BTN201A	X	X	X	X	X	X	X	X	
18BTC210A		X	X		X	X	X		
18BTC211A		X	X		X	X	X		
18BTC212A		X	X		X	X	X		
18BTC213A		X	X		X	X	X		
18BTC214A		X	X		X	X	X		
18BTC215A		X	X		X	X	X		
18BTL216A	X	X	X	X	X	X	X		
18BTL217A	X	X	X	X	X	X	X		
18BTL218A	X	X	X	X	X	X	X		
19HST201A	X	X	X	X	X	X	X	X	
18BTC301A		X	X		X	X	X		
18BTC302A		X	X		X	X	X		
18BTC303A		X	X		X	X	X		
18BTC304A		X	X		X	X	X		
18BTL305A	X	X	X	X	X	X	X		
18BTL306A	X	X	X	X	X	X	X		
18BTIS307A									
18BTL309A	X	X	X	X	X	X	X		
18OEE31XA	X	X	X	X	X	X	X	X	X
18BTC310A		X	X		X	X			
18BTC311A	X	X	X		X	X			
18MCN311A	X	X	X	X	X	X	X	X	X
18OEE32XA	X	X	X	X	X	X	X	X	X
18BTP312A	X	X	X	X	X	X	X	X	X

GK: Group Work; SL: Self Learning; WC: Written Communication; OC: Oral Communication P: Presentation; B: Behavioural; IM: Information Management; PM: Personal Management L: Leadership

29. Co-curricular Activities

Students are encouraged to take part in co-curricular activities like seminars, conferences, symposium, paper writing, attending industry exhibitions, project competitions and related activities to enhance their knowledge and network.

30. Cultural and Literary Activities

To remind and ignite the creative endeavours annual cultural festivals held and the students are made to plan and organize the activities.

31. Sports and Athletics

Students are encouraged to develop a habit of taking part in outdoor and indoor games on regular basis.

