



# Programme Specifications

## B. Tech. Programme

Programme:  
Civil Engineering

Department:  
Civil Engineering

Faculty of Engineering & Technology  
M.S. Ramaiah University of Applied Sciences

University House, New BEL Road, MSR Nagar, Bangalore – 560 054

[www.msruas.ac.in](http://www.msruas.ac.in)

Programme Specifications: Civil Engineering	
Faculty	Engineering and Technology (FET)
Department	Civil Engineering
Programme	Civil Engineering
Dean of Faculty	Dr. H. M. Rajashekharaswamy
HOD	Dr. H. M. Rajashekharaswamy

**1. Title of the Award**

B.Tech. in Civil Engineering

**2. Modes of study**

Full-Time

**3. Awarding Institution / Body**

Ramaiah University of Applied Sciences – Bengaluru, India

**4. Joint Award**

Not Applicable

**5. Teaching Institution**

Faculty of Engineering and Technology

Ramaiah University of Applied Sciences - Bengaluru, India

**6. Date of Programme Specifications**

February 2018

**7. Date of Programme Approval by the Academic Council of RUAS**

May 2018

**8. Next Review Date**

May 2022

**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**

Not Applicable

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**14. Rationale for the Programme**

Civil Engineering is primarily infrastructure development involving planning, design, construction, and operation of facilities essential to modern life, ranging from transit systems to offshore structures to space satellites. Major disciplines within Civil Engineering that are closely interrelated are Structural, Environmental, Geotechnical, Water Resources, Transportation, Construction and Urban planning.

Until recently Civil Engineering teaching was limited to planning, analysis, design and execution of different types of infrastructure like buildings, roads, bridges, dams and power plants. However, increasing technological sophistication and demand for higher living standards fuelled by economic growth and concerns about environmental impact have changed the scope of Civil Engineering curriculum. The challenges of today's Civil Engineering infrastructure are much more complex including reducing carbon emission and interdependencies between resources.

Even though there are a large number of institutions world over which are producing Civil Engineers, there is a shortage of quality Civil Engineering graduates. The FET at RUAS would like to offer Civil Engineering programme to produce imaginative, creative and innovative Civil Engineers who are effective and efficient problem solvers providing economical and sustainable infrastructural solutions.

**15. Programme Mission**

The purpose of the Programme is creation of innovative problem solvers in multi-disciplinary settings, entrepreneurs and leaders applying the knowledge, understanding, cognitive abilities, practical skills and transferrable skills gained through systematic, flexible and rigorous learning in the chosen academic domain.

**16. Graduate Attributes**

1. Ability to apply knowledge of mathematics, science, and Engineering fundamentals to solve complex problems in engineering
2. Ability to analyse engineering problems, interpret data and arrive at meaningful conclusion involving mathematical inferences
3. Ability to design an engineering system, component, or process to meet desired needs considering public health and safety, and the cultural, societal, and environmental considerations
4. Ability to understand and solve complex engineering problems by conducting experimental investigations
5. Ability to apply appropriate tools and techniques and understand utilization of resources appropriately to complex engineering activities
6. Ability to understand the effect of engineering solutions on legal, cultural, social and public health and safety aspects
7. Ability to develop sustainable solutions and understand their effect on society and environment
8. Ability to apply ethical principles to engineering practices and professional responsibilities
9. Ability to work as a member of a team, to plan and to integrate knowledge of various engineering disciplines and to lead teams in multidisciplinary settings
10. Ability to make effective oral presentations and communicate technical ideas to a broad audience using written and oral means
11. Ability to lead and manage multidisciplinary teams by applying engineering and management principles
12. Ability to adapt to the changes and advancements in technology and engage in independent and life-long learning

**17. Programme Goal**

The programme goal is to produce graduates with critical, analytical and problem solving skills, and ability to think independently, to pursue a career in Civil Engineering.

## 18. Programme Objectives

The Programme will impart knowledge of Civil structures, Geotechnical interactions, Construction Engineering and Technology, Environmental Engineering, Hydrology, Irrigation and Water Management. It enhances the understanding of underlying engineering principles that govern the behavior of Civil Engineering systems. It teaches analytical modelling, simulation and analysis to study the behavior of Civil Engineering systems. It provides the skills to design, build and test Civil Engineering systems. It also trains students on personality development and interactive skills with professionals and feel for the society.

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

1. To impart knowledge on Civil Engineering systems and their subsystems
2. To enhance the understanding of the underlying engineering principles of Civil Engineering systems
3. To model, simulate and analyze the behavior of Civil Engineering systems to predict and improve their performance
4. To design and build Civil Engineering systems to meet the specific needs
5. To impart training on instrumentation and testing of Civil Engineering systems
6. To train students on commercial software tools to design, model, simulate civil engineering systems
7. To build and test Civil Engineering systems
8. To impart training on professional ethics, history, economics, social sciences and interactive skills relevant to professional practice
9. To provide a general perspective on lifelong learning and opportunities for a career in industry, 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:** Identify and describe the various Civil Engineering structures, components, instruments and construction technologies
- KU2:** Explain the underlying science and engineering principles that govern the behaviour of the components of structures relevant to Civil Engineering
- KU3:** Identify various types of loads acting on Civil Engineering structures and explain their effect
- KU4:** Explain the relevant IS building codes and standard practices applicable

### 2. Cognitive Skills

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

- CS1:** Design Civil Engineering materials, components and structures
- CS2:** Model, simulate, analyse and evaluate the behavior of Civil Engineering structures, components and data
- CS3:** Modify the existing design/processes to meet newer requirements
- CS4:** Apply science and engineering principles to evaluate performance of Civil engineering systems and answer “what if” questions

### 3. Practical Skills

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

- PS1:** Construct fabricate, plan and design, prepare drawings, perform estimation and costing of Civil Engineering systems
- PS2:** Conduct survey for existing, proposed Civil Engineering structures and conduct field tests
- PS3:** Instrument, test a Civil Engineering system, components or material and evaluate for its performance as per standards
- PS4:** Prepare reports on materials, components, tests, experiments, environmental impacts of Civil Engineering constructions, water management, flood control and irrigation

### 4. Capability / Transferable Skills

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

- TS1:** Manage information, develop technical 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

## 20. Programme Structure

### Programme Structure

#### Semester: 1, Physics Cycle

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	20MTB101A	Engineering Mathematics-1	3	1	0	4	100
2	20PHB102A	Engineering Physics	3	0	0	3	100
3	20CES101A	Engineering Mechanics	3	0	0	3	100
4	20ECS102A	Elements of Electronics Engineering	3	0	0	3	100
5	20MES103A	Engineering Drawing	1	0	4	3	100
6	20PHL103A	Engineering Physics Laboratory	0	0	2	1	50
7	20ECL104A	Basic Electronics Laboratory	0	0	2	1	50
8	20TSH101A	Constitution, Human Rights and Law	2	0	0	2	50
<b>Total</b>			<b>15</b>	<b>1</b>	<b>8</b>	<b>20</b>	<b>650</b>
<b>Total number of contact hours per week</b>			<b>24 Hours</b>				
<b>Number of credits can be registered</b>			<b>Minimum</b>	<b>16</b>	<b>Maximum</b>		<b>20</b>

#### Semester: 2, Chemistry Cycle

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	20MTB104A	Engineering Mathematics - 2	3	1	0	4	100
2	20CHB105A	Engineering Chemistry	3	0	0	3	100
3	20MES105A	Elements of Mechanical Engineering and Workshop Practice	2	0	2	3	100
4	20EES106A	Elements of Electrical Engineering	3	0	0	3	100
5	20CSS107A	Elements of Computer Science and Engineering	3	0	0	3	100
6	20CHL106A	Engineering Chemistry Laboratory	0	0	2	1	50
7	20CSL108A	Computer Programming Laboratory	0	0	2	1	50
8	20EEL109A	Basic Electrical Engineering Laboratory	0	0	2	1	50
9	20TSH102A	Professional Communication	2	0	0	2	50
<b>Total</b>			<b>16</b>	<b>1</b>	<b>8</b>	<b>21</b>	<b>700</b>
<b>Total number of contact hours per week</b>			<b>25 hours</b>				
<b>Number of credits can be registered</b>			<b>Minimum</b>	<b>17</b>	<b>Maximum</b>		<b>21</b>

**Semester: 1, Chemistry Cycle**

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	20MTB101A	Engineering Mathematics-1	3	1	0	4	100
2	20CHB105A	Engineering Chemistry	3	0	0	3	100
3	20MES105A	Elements of Mechanical Engineering and Workshop Practice	2	0	2	3	100
4	20EES106A	Elements of Electrical Engineering	3	0	0	3	100
5	20CSS107A	Elements of Computer Science and Engineering	3	0	0	3	100
6	20CHL106A	Engineering Chemistry Laboratory	0	0	2	1	50
7	20CSL108A	Computer Programming Laboratory	0	0	2	1	50
8	20EEL109A	Basic Electrical Engineering Laboratory	0	0	2	1	50
9	20TSH102A	Professional Communication	2	0	0	2	50
<b>Total</b>			<b>16</b>	<b>1</b>	<b>8</b>	<b>21</b>	<b>700</b>
<b>Total number of contact hours per week</b>			<b>25 hours</b>				
<b>Number of credits can be registered</b>			<b>Minimum</b>	<b>17</b>	<b>Maximum</b>	<b>21</b>	

**Semester: 2, Physics Cycle**

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	20MTB104A	Engineering Mathematics-2	3	1	0	4	100
2	20PHB102A	Engineering Physics	3	0	0	3	100
3	20CES101A	Engineering Mechanics	3	0	0	3	100
4	20ECS102A	Elements of Electronics Engineering	3	0	0	3	100
5	20MES103A	Engineering Drawing	1	0	4	3	100
6	20PHL103A	Engineering Physics Laboratory	0	0	2	1	50
7	20ECL104A	Basic Electronics Laboratory	0	0	2	1	50
8	20TSH101A	Constitution, Human Rights and Law	2	0	0	2	50
<b>Total</b>			<b>15</b>	<b>1</b>	<b>8</b>	<b>20</b>	<b>650</b>
<b>Total number of contact hours per week</b>			<b>24 Hours</b>				
<b>Number of credits can be registered</b>			<b>Minimum</b>	<b>16</b>	<b>Maximum</b>	<b>20</b>	



## SEMESTER 3

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	20MTB201A	Engineering Mathematics - 3	3	1	0	4	100
2	20CEC202A	Mechanics of Solids	2	2	0	4	100
3	20CEC203A	Mechanics of Fluids	2	2	0	4	100
4	20CEC204A	Engineering Survey	3	1	0	4	100
5	20CEC205A	Engineering Geology and Properties of Soils	3	0	0	3	100
6	20CEC206A	Building Materials, Concrete and Construction Technology	3	0	0	3	100
7	20CEL207A	Material Testing Laboratory	0	0	2	1	50
8	20CEL208A	Survey Practice	0	0	2	1	50
9	20CEL209A	Applied Engineering Geology Laboratory	0	0	2	1	50
<b>Total</b>			<b>16</b>	<b>06</b>	<b>06</b>	<b>25</b>	<b>750</b>
<b>Total number of contact hours per week</b>			<b>28 hours</b>				
<b>Number of credits can be registered</b>			<b>Minimum</b>	<b>21</b>	<b>Maximum</b>	<b>25</b>	

## SEMESTER 4

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	20MTB211A	Engineering Mathematics - 4	3	1	0	4	100
2	20CEC212A	Transportation Engineering - 1	3	0	0	3	100
3	20CEC213A	Structural Analysis - 1	2	2	0	4	100
4	20CEC214A	Hydraulics and Hydraulic Machines	3	0	0	3	100
5	20CEC215A	Environmental Engineering	3	0	0	3	100
6	20CEC216A	Building Planning and Computer Aided Drafting	1	0	4	3	100
7	20CEL217A	Hydraulics and Hydraulic Machines Laboratory	0	0	2	1	50
8	20CEL218A	Environmental Engineering Laboratory	0	0	2	1	50
9	20CEL219A	Concrete and Highway Materials Laboratory	0	0	2	1	50
10	20CEM210A	Environmental Studies	2	0	0	0	Audit
<b>Total</b>			<b>17</b>	<b>03</b>	<b>10</b>	<b>23</b>	<b>750</b>
<b>Total number of contact hours per week</b>			<b>30 hours</b>				
<b>Number of credits can be registered</b>			<b>Minimum</b>	<b>19</b>	<b>Maximum</b>	<b>23</b>	

**SEMESTER 5**

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	20CEC301A	Design of RCC Elements	2	1	0	3	100
2	20CEC302A	Structural Analysis - 2	2	2	0	4	100
3	20CEC303A	Geotechnical Engineering - 1	3	0	0	3	100
4	20CEC304A	Hydrology and Irrigation Engineering	3	0	0	3	100
5	20CEC315A	Transportation Engineering - 2	3	0	0	3	100
6	20CEC306A	Drawing of RCC Structures	0	0	4	2	100
7	20CEL307A	Geotechnical Engineering Laboratory	0	0	2	1	50
8	20CEL308A	Extensive Survey Viva Voce	0	0	2	1	50
<b>Total</b>			<b>13</b>	<b>03</b>	<b>8</b>	<b>20</b>	<b>700</b>
<b>Total number of contact hours per week</b>			<b>24 hours</b>				
<b>Number of credits can be registered</b>			<b>Minimum</b>	<b>16</b>	<b>Maximum</b>	<b>20</b>	

**SEMESTER 6**

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	20CEC311A	Geotechnical Engineering - 2	3	0	0	3	100
2	20CEC312A	Design of Steel Structures	2	1	0	3	100
3	20CEC313A	Estimation–Costing and Engineering Economics	2	0	2	3	100
4	20CEC314A	DSM & Finite Element Analysis	2	0	2	3	100
5	20CEC305A	Design & Drawing of Transportation & Irrigation Structures	0	0	4	2	100
6	20CEC316A	Design & Drawing of Geotechnical & Environmental Structures	0	0	4	2	100
7	20CEL317A	Drawing of Steel Structures	1	0	2	2	100
8	20CEL318A	CAE Laboratory	0	0	2	1	50
<b>Total</b>			<b>10</b>	<b>01</b>	<b>16</b>	<b>19</b>	<b>750</b>
<b>Total number of contact hours per week</b>			<b>27 hours</b>				
<b>Number of credits can be registered</b>			<b>Minimum</b>	<b>16</b>	<b>Maximum</b>	<b>19</b>	

**SEMESTER 7**

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	20CEE41XA	Professional Core Elective - 1	4	0	0	4	100
2	20CEE42XA	Professional Core Elective - 2	4	0	0	4	100
3	20CEO403A	Open Elective	3	0	0	3	100
4	20CEP404A 20CEP405A	I] Project Work – 1 II] Internship (Choose one)	0	0	8	4	100
5	20CEP406A	Seminar	0	0	2	1	50
<b>Total</b>			<b>11</b>	<b>00</b>	<b>10</b>	<b>16</b>	<b>450</b>
<b>Total number of contact hours per week</b>			<b>21 hours</b>				
<b>Number of credits can be registered</b>			<b>Minimum</b>	<b>12</b>	<b>Maximum</b>	<b>16</b>	

**SEMESTER 8**

Sl.No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	20CEE43XA	Professional Core Elective - 3	4	0	0	4	100
2	20CEE44XA	Professional Core Elective - 4	4	0	0	4	100
3	20CEP408A	Project Work - 2	0	0	16	8	100
<b>Total</b>			<b>08</b>	<b>00</b>	<b>16</b>	<b>16</b>	<b>300</b>
<b>Total number of contact hours per week</b>			<b>24 hours</b>				
<b>Number of credits can be registered</b>			<b>Minimum</b>	<b>12</b>	<b>Maximum</b>	<b>16</b>	

**Professional Core Elective Courses:**

Group	VII Sem			
	Course code	PCE-1 Course Title	Course code	PCE-2 Course Title
Group 1	20CEE411A	Traffic Engineering	20CEE421A	Pavement Materials, Equipment and Construction
Group 2	20CEE412A	Advance Structural Analysis	20CEE422A	Structural Dynamics and Earthquake Resistant Design of Structures
Group 3	20CEE413A	Advanced Surveying -Remote Sensing and GIS	20CEE423A	Advanced Hydrology
Group 4	20CEE414A	Advanced Concrete Technology	20CEE424A	Modern Construction Materials, Equipment and Technology
Group 5	20CEE415A	Solid Waste Management	20CEE425A	Industrial Wastewater Treatment
Group 6	20CEE416A	Ground Improvement Techniques	20CEE426A	Advanced Foundation Engineering
<b>Common Group</b>	20MTE401A	<b>Probability and Statistics</b>	20CSE421A	<b>Data Sciences Foundation</b>

Group	VIII Sem			
	Course code	PCE-3 Course Name	Course code	PCE-4 Course Name
Group 1	20CEE431A	Urban Transportation and Planning	20CEE441A	Pavement Design
Group 2	20CEE432A	Pre-stressed Concrete Technology	20CEE442A	Advanced Design of Reinforced Concrete Structures
Group 3	20CEE433A	Water Resources System	20CEE443A	Water Shed Management
Group 4	20CEE434A	Green Construction and Alternate Building Materials	20CEE444A	Construction Management and Engineering Economics
Group 5	20CEE435A	Air Pollution and Control	20CEE445A	Environmental Impact Assessment
Group 6	20CEE436A	Reinforced Soil Structures	20CEE446A	Soil Dynamics and Machine Foundations
<b>Common Group</b>	20CSE431A	<b>Data Sciences Algorithms and Applications</b>	20CSE441A	<b>Data Analytics</b>

**21. Programme Delivery**

As per Time Table

**22. 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

**23. 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 (CE) carries a weight of 50% and Component-2 (SEE) carries a weight of 50%
4. Component-1 (CE): the course leader will indicate the mode of assessment in consultation and approval of the respective HoD and the faculty Dean, before commencement of the semester. The template for weightage of CE and SEE in percentages for each course is indicated in Table below.

	Bloom's Level of Thinking	Continuous Assessment , 50% Marks			Semester End Examination, 50% Marks
		CE-1, x%	CE-2, Y%	CE-3, Z %	
Level-1	Remember				
	Understand				
Level-2	Apply				
	Analyse				
Level-3	Evaluate				
	Create				
	Total	100%	100%	100%	100%

CE – can be from any combination of the following:

Assignments, term Tests, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, others, if any.

5. Component -2 (SEE) is Written Examination 50% weight.
6. Laboratory Examination will have two components
  - I. Component -1(CE): Conduction of Laboratory Exercises and Submission of Report: 50% weight
  - II. Component -2: SEE (Semester End Laboratory Examination): 50% weight
7. A minimum of overall 40% is required for a pass with 40% in SEE.
8. For courses with a combination of theory and laboratory, the details of assessment for such courses will be indicated in the respective course specifications.
9. The marks distribution for each course is given in the programme structure-section 20

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10. Other flexibilities (exceptions) as per the programme regulations.

**24. Attendance**

A minimum of 80% attendance compulsory to appear for semester end examinations. Any condoning is as per the programme regulations.

**25. Award of Class**

As per the Academic Regulations for B.Tech. Programme

**26. 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

**27. 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)

## 28. Curriculum Map

Course Code						Intended Learning Outcomes											
						Knowledge and Understanding				Cognitive (Thinking) Skills (Critical, Analytical,				Practical skills			
20HST	20BSC	20ESC	20CEC	20OEE	20MCC	KU1	KU2	KU3	KU4	CS1	CS2	CS3	CS4	PS1	PS2	PS3	PS4
a	b	c	d	e	f												
101A	101A	101A	201A	41XA	101B	cd	cd	cd	cd	d	d	d					
102A	102B	102A	202A	42XA	102A	cd	cd	cd	cd			d	d				
201A	103B	103A	203A	43XA	201B	d	d	d	d	d	d	d	d		b	d	d
301A	104A	104A	204A	44XA		d	d			d				c			
	105B	105A	206A			bd	bd	bd	bd				d	d	c	d	d
	106B	106A	207A			cd	cd	c	c		d	d		d			b
	207A	107A	208A			cd	cd	cd	cd	d	d	d	d		cd	d	d
	208A	108A	209A			d	d	cd	cd	d	d	d	d				
		109A	210A			d	d	d	d				d				c
		110A	211A			d	d	d	d	d	d	d	d		c		
		201A	212A			d	cd		c				d		d		
		202A	213A			d	d	d		d		d	d	d			d
			214A			d	d						d		d	d	d
			215A			d	d						d			d	d
			217A			d	d	d	d	d		d	d				
			218A			d			d	d	d		d	d		d	d
			301A			d	d	d	d	d	d	d	d				
			302A			d	d	d	d	d	d	d	d				
			303A			d	d	d	d	d	d	d	d				
			304A			d	d	d	d	d		d					
			305A			d	d	d	d				d				
			306A			d	d			d	d	d	d	d			
			307A			d	d	d	d		d	d	d			d	d
			308A			d	d						d			d	d
			309A			d	d	d	d	d	d	d	d	d	d	d	d
			310A			d	d	d		d	d		d				
			311A			d	d	d	d	d	d	d	d	d			
			312A			d	d		d				d	d			d
			317A			d	d	d	d	d	d	d	d	d	d		d
			318A			d	d	d	d	d	d	d	d	d	d		
			319A										d	d			
			320A			d	d	d	d		d	d	d			d	
			321A			d	d	d	d	d	d	d	d	d	d		
			322A			d	d	d	d	d	d	d	d	d	d		d
			323A			d	d	d	d	d	d	d	d	d	d		d
			324A			d	d	d	d	d	d	d	d				d
			406A			d	d	d	d	d	d	d	d	d	d	d	d
			CEE41XA*														
			CEE42XA*														
			CEE43XA*														
			CEE44XA*														
			P41A/42A			d	d	d	d	d	d	d	d	d	d	d	d
			P43A			d	d	d	d	d	d	d	d	d	d	d	d
10	26	30	118	16	06	Total 206 credits											

\*Depends on elective Course chosen

**29. Capability / Transferable Skills Map**

Course						Skills									
20HST	20BSC	20ESC	20CEC	20OEE	20MCC	GK	SL	WC	OC	P	B	IM	PM	L	AO
a	b	c	d	e	f										
101A	101A	101A	201A	41XA	101B	abcdef	abcdef	abcdef	f	f	af	abcdef	abcdef	f	a
102A	102B	102A	202A	42XA	102A	abcdef	abcdef	abcdef	abcdef	a	a	abcdef	abcdef	af	af
201A	103B	103A	203A	43XA	201B	abcdef	abcdef	abcdef	b		af	abcdef	abcdef		a
301A	104A	104A	204A	44XA		abcde	abcde	abcde	c		a	abcde	abcde		a
	105B	105A	206A			bcd	bcd	bcd	cd			bcd	bcd		
	106B	106A	207A			bcd	bcd	bcd	bd			bcd	bcd		
	207A	107A	208A			bcd	bcd	bcd	d			bcd	bcd		
	208A	108A	209A			bcd	bcd	bcd	c			bcd	bcd		
		109A	210A			cd	cd	cd	c			cd	cd		
		110A	211A			cd	cd	cd	c			cd	cd		
		201A	212A			cd	cd	cd	d			cd	cd		
		202A	213A			cd	cd	cd	cd			cd	cd		
			214A			d	d	d	d			d	d		
			215A			d	d	d	d			d	d		
			217A			d	d	d		d		d	d		
			218A			d	d	d	d	d	d	d	d		
			301A			d	d	d		d		d	d		
			302A			d	d	d		d		d	d		
			303A			d	d	d		d		d	d		
			304A			d	d	d		d		d	d		
			305A			d	d	d		d		d	d		
			306A			d	d	d		d		d	d		
			307A			d	d	d	d	d	d	d	d		
			308A			d	d	d	d	d	d	d	d		
			309A			d	d	d	d	d	d	d	d	d	d
			310A			d	d	d		d		d	d		
			311A			d	d	d		d		d	d		
			312A			d	d	d		d		d	d		
			317A			d	d	d		d		d	d		
			318A			d	d	d		d		d	d		
			319A			d	d	d		d		d	d		
			320A			d	d	d		d		d	d		
			321A			d	d	d		d		d	d		
			322A			d	d	d		d		d	d		
			323A			d	d	d		d		d	d		
			324A			d	d	d	d	d	d	d	d		
			406A			d	d	d	d	d	d	d	d	d	d
			CEE41XA			d	d	d		d		d	d		
			CEE42XA			d	d	d		d		d	d		
			CEE43XA			d	d	d		d		d	d		
			CEE44XA			d	d	d		d		d	d		
			P41A/42A			d	d	d	d	d	d	d	d	d	d
			P43A			d	d	d	d	d	d	d	d	d	d

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



**30. 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.

**31. 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.

**32. Sports and Athletics**

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

