

Programme Specifications

B. Tech. Programme



**Programme: Electronic & Communication
Engineering**
**Department: Electronic & Communication
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

PROGRAMME SPECIFICATIONS - ELECTRONIC AND COMMUNICATION ENGINEERING

Faculty	Engineering and Technology (FET)
Department	Electronic and Communication Engineering
Programme	Electronic and Communication Engineering
Dean of Faculty	Prof. H. K. Narahari
Head of Department	Prof. Hariharan Ramasangu

1	Title of The Award B. Tech. in Electronic and Communication Engineering
2	Modes of Study Full Time
3	Awarding Institution /Body M.S. Ramaiah University of Applied Sciences
4	Joint Award Not Applicable
5	Teaching Institution Faculty of Engineering and Technology, M.S. Ramaiah University of Applied Sciences
6	Date of Programme Specifications February 2014
7.	Date of Programme Approval by the Academic Council of MSRUAS April 2014
8	Next Review Date: March 2018
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 N/A
14	Rationale for the Programme The theoretical developments, occurred in previous centuries, in understanding electromagnetic fields and material properties had ushered the growth in the domain of Electronics and Communication during the first half of twentieth century. The second half had seen innovation and novelty in chip technology and telecommunication. The impact of communication technology, on developing countries such as India, has caused a major societal revolution. There is a need to have highly trained manpower in the domain of Electronics and Communication engineering. Good outcome based undergraduate engineering education is critical in developing human resources.

	<p>The National Association of Software and Services Companies (NASSCOM) study, conducted in 2010 and titled “Global Engineering Research and Development: Accelerating Innovation with Indian Engineering”, underlined the significance for India as the country had posted a revenue growth of about 40% during 2007-2010 and is expected to grow in coming years.</p> <p>The electronic and communication engineering programme at Faculty of Engineering and Technology at MSRUAS has been developed by the members of the faculty based on their teaching experience and long standing interactions with various universities and industries in India and abroad.</p> <p>The curriculum is outcome based and helps students to develop critical thinking abilities and imbibe relevant practical skills for a smooth transition from academics to real-life work environment. Opportunities are provided for the students to do their internship in India or abroad depending on their preference.</p> <p>The Global Innovation 1000, reported in 2012, by management consulting firm Booz & Company has indicated that R & D investment in Computing, Electronics, Tele-communication is about 30% by top innovative companies making this sector a leader. The importance of technological advancements in electronics could also be seen in other categories such as Automobile, Process industries, etc. Expertise needs to be built for the design, analysis, simulation, testing and evaluation of analog, digital, control, instrumentation, and communication systems. In the light of above, knowledge of computer architectures and communication protocols is required. Outcome based undergraduate programme along with modern pedagogy is the need of the hour.</p> <p>The programme provides strong foundation in basic concepts, followed by comprehensive understanding of electrical, electronics, and communication courses. Stress is laid on simulation, and larger perspective of systems and sub-systems of electronics product. Students are trained to develop life-long skills to understand, analyse, and develop solutions for challenging technological problems.</p> <p>There is a shortage of quality electronics and communication graduates in spite of many institutions offering undergraduate programme. The FET at MSRUAS would like to offer electronic and communication engineering programme to produce imaginative, creative and innovative engineers to solve the problems of society.</p>
15	<p>Programme Mission</p> <p>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</p>
16	<p>Graduate Attributes</p> <ol style="list-style-type: none"> 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 conclusions involving mathematical inferences

	<ol style="list-style-type: none"> 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	<p>Programme Goal</p> <p>The programme goal is to produce graduates with critical, analytical and problem solving skills, and ability to think independently, to pursue a career in Electronic and Communication Engineering.</p>
18	<p>Programme Objectives</p> <p>The programme imparts knowledge in signal processing, network analysis, control systems, electromagnetic fields, communication systems and electronic devices. Students are taught theoretical aspects, problem-solving, analytical modeling, simulation and analysis to study the behavior of electronic circuits and communication systems. Students are trained in practical aspects of analog/digital circuits, instrumentation, electronic devices and programming. In addition, students are trained on personal development and interactive skills with professionals and feel for society.</p> <p>The objectives of the programme are:</p> <ul style="list-style-type: none"> • To impart knowledge on electronic and communication systems • To enhance the understanding of the underlying principles of electronic and communication systems • To develop abilities to design analog and digital system/controllers to meet the required specifications • To develop abilities to model, simulate and analyse the characteristics of electronic signals and systems • To train on industry standard simulation tools for simulation and analysis of electronic systems • To impart training on instrumentation, test and measurement • To build and test electronic systems • To impart training on professional ethics, history, economics, social sciences and interactive skills relevant to professional practice

	<ul style="list-style-type: none"> To provide a general perspective and opportunities for a career in industry, business and commerce
19	<p>Programme Intended Learning Outcomes</p> <p>The intended learning outcomes are listed under four headings</p> <p>1. Knowledge and Understanding, 2. Cognitive skills 3. Practical skills and 4. Capability/ Transferable skills.</p> <p>Knowledge and Understanding</p> <p>After undergoing this programme, a student will be able to</p> <p>KU1: Identify and describe the various electronic and communication systems</p> <p>KU2: Explain the principles of electromagnetism and circuit theory as applied to electronic and communication systems</p> <p>KU3: Explain the principles of signal processing and control systems</p> <p>KU4: Compare the architectures and working principles of various microcontrollers and processors</p> <p>Cognitive Skills</p> <p>After undergoing this programme, a student will be able to</p> <p>CS1: Design analog and digital electronic circuits</p> <p>CS2: Model, simulate and analyse electronic and communication sub-systems</p> <p>CS3: Apply the principles of electromagnetism to analyse transmission lines and waveguides in microwave communication</p> <p>CS4: Apply software reference models for the development of electronic systems</p> <p>Practical Skills</p> <p>After undergoing this programme, a student will be able to</p> <p>PS1: Build analog and digital electronic circuits</p> <p>PS2: Test and measure analog and digital signals using measurement devices</p> <p>PS3: Implement algorithms on microprocessors and microcontrollers</p> <p>PS4: Test microwave devices and measure antenna radiation patterns</p> <p>Capability/Transferrable Skills</p> <p>After undergoing the programme, a student will be able to-</p> <p>TS1: Manage information, develop technical reports and make presentations</p> <p>TS2: Build, Manage and Lead a team to successfully complete a project and communicate across teams and organizations to achieve professional objectives</p> <p>TS3: Work under various constraints to meet project targets</p> <p>TS4: Adopt to the chosen profession by continuously upgrading his/her knowledge and understanding through Life-long Learning philosophy</p>

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Programme Structure**Semester -1, Physics Cycle**

S.No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	BSC101A	Engineering Mathematics-1	3	2	0	4	100
2	BSC102B	Engineering Physics	3	2	0	4	100
3	ESC101A	Elements of Mechanical Engineering	3	0	0	3	100
4	ESC102A	Elements of Electronics Engineering	3	2	0	4	100
5	ESC103A	Engineering Drawing	1	0	4	3	100
6	BSC103B	Engineering Physics Laboratory	0	0	2	1	50
7	ESC104A	Basic Workshop Practice	0	0	2	1	50
8	ESC105A	Basic Electronics Laboratory	0	0	2	1	50
9	HSC101B	Sociology and Elements of Indian History	2	0	0	2	50
10	MCC101B	Technical Communication and Soft Skills	2	0	0	2	50
Total			17	6	10	25	750
Total number of contact hours per week			33 hours				
Number of credits can be registered			Minimum	20	Maximum	25	

Semester -2

S.No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	BSC104A	Engineering Mathematics-2	3	2	0	4	100
2	BSC105B	Engineering Chemistry	4	0	0	4	100
3	ESC106A	Construction Materials and Engineering Mechanics	3	2	0	4	100
4	ESC107A	Elements of Electrical Engineering	3	2	0	4	100
5	ESC108A	Elements of Computer Science and Engineering	3	2	0	4	100
6	ESC109A	Computer Programming Laboratory	0	0	2	1	50
7	BSC106B	Engineering Chemistry Laboratory	0	0	2	1	50
8	ESC110A	Basic Electrical Laboratory	0	0	2	1	50
9	HSC102B	Business Communication and Presentation Skill	2	0	0	2	50
10	MCC102A	Environmental Studies	2	0	0	2	50
Total			20	8	6	27	750
Total number of contact hours per week			34 hours				
Number of credits can be registered			Minimum	22	Maximum	27	

Semester -1, Chemistry Cycle

S.No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	BSC101A	Engineering Mathematics-1	3	2	0	4	100
2	BSC105B	Engineering Chemistry	4	0	0	4	100
3	ESC106A	Construction Materials and Engineering Mechanics	3	2	0	4	100
4	ESC107A	Elements of Electrical Engineering	3	2	0	4	100
5	ESC108A	Elements of Computer Science and Engineering	3	2	0	4	100
6	ESC109A	Computer Programming Laboratory	0	0	2	1	50
7	BSC106B	Engineering Chemistry Laboratory	0	0	2	1	50
8	ESC110A	Basic Electrical Laboratory	0	0	2	1	50
9	HSC102B	Business Communication and Presentation Skill	2	0	0	2	50
10	MCC102A	Environmental Studies	2	0	0	2	50
Total			20	8	6	27	750
Total number of contact hours per week			34 hours				
Number of credits can be registered			Minimum	22	Maximum	27	

Semester -2

S.No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	BSC104A	Engineering Mathematics-2	3	2	0	4	100
2	BSC102B	Engineering Physics	3	2	0	4	100
3	ESC101A	Elements of Mechanical Engineering	3	0	0	3	100
4	ESC102A	Elements of Electronics Engineering	3	2	0	4	100
5	ESC103A	Engineering Drawing	1	0	4	3	100
6	BSC103B	Engineering Physics Laboratory	0	0	2	1	50
7	ESC104A	Basic Workshop Practice	0	0	2	1	50
8	ESC105A	Basic Electronics Laboratory	0	0	2	1	50
9	HSC101B	Sociology and Elements of Indian History	2	0	0	2	50
10	MCC101B	Technical Communication and Soft Skills	2	0	0	2	50
Total			17	6	10	25	750
Total number of contact hours per week			33 hours				
Number of credits can be registered			Minimum	20	Maximum	25	

Semester-3

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	BSC207A	Engineering Mathematics-3	3	2	0	4	100
2	ECC201A	Signals and Systems	3	2	0	4	100
3	ECC202A	Electronic Circuits	3	2	0	4	100
4	ECC203A	Network Analysis and Synthesis	3	2	0	4	100
5	EEC201A	Measurements and Instrumentation	3	0	0	3	100
6	ECC205A	Electrical Machines	3	2	0	4	100
7	ECC206A	Electronic Circuit Design Laboratory	0	0	2	1	50
8	ECC207A	Electrical Machines Laboratory	0	0	2	1	50
9	MCC201B	Human Rights and Legislative Procedures	2	0	0	2	50
Total			20	10	4	27	750
Total number of contact hours per week			34 hours				
Number of credits can be registered			Minimum	22	Maximum	27	

Semester-4

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	BSC208A	Engineering Mathematics-4	3	2	0	4	100
2	ECC208A	Digital Logic Circuits	3	2	0	4	100
3	ECC209A	Electromagnetic Theory	3	2	0	4	100
4	ECC210A	Microprocessors and Microcontrollers	4	0	0	4	100
5	ECC211A	Solid State Devices	3	0	0	3	100
6	HSC201A	Law for Engineers	2	0	0	2	50
7	ECC212A	Digital Electronics Laboratory	0	0	2	1	50
8	ECC213A	Microprocessor Laboratory	0	0	2	1	50
Total			18	6	4	23	650
Total number of contact hours per week			28 hours				
Number of credits can be registered			Minimum	18	Maximum	23	

Semester-5

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	ECC301A	Analog Communication	3	2	0	4	100
2	ECC302A	Digital Signal Processing	3	2	0	4	100
3	ECC303A	Computer Architecture	4	0	0	4	100
4	ECC304A	Linear Integrated Circuits	3	0	0	3	100
5	ECC305A	Control Systems	3	2	0	4	100
6	HSC301A	Economics for Engineers	2	0	0	2	50
7	ECC306A	Digital Signal Processing Laboratory	0	0	2	1	50
8	ECC307A	Linear Integrated Circuits Laboratory	0	0	2	1	50
9	ECC308A	Analog Communication Laboratory	0	0	2	1	50
Total			18	6	6	24	700
Total number of contact hours per week			30 hours				
Number of credits can be registered			Minimum	19	Maximum	24	

Semester-6

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	ECC309A	Digital Communication	3	2	0	4	100
2	ECC310A	Microwave Communication	3	2	0	4	100
3	ECC311A	Computer Networks	3	0	0	3	100
4	ECEXXXA	Professional Core Elective-1	3	2	0	4	100
5	ECCP31A	Project Work – 1 / Internship	0	0	16	8	100
6	ECC312A	Digital Communication Laboratory	0	0	2	1	50
7	ECC313A	Electronic Systems Modelling Laboratory	0	0	2	1	50
Total			12	6	20	25	600
Total number of contact hours per week			38 hours				
Number of credits can be registered			Minimum	20	Maximum	25	

Note: Internship can be in any Industry, Business or Research organization, Indian University or Foreign University.

Semester-7

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	ECEXXXA	Professional Core Elective-2	3	2	0	4	100
2	ECEXXXA	Professional Core Elective - 3	3	2	0	4	100
3	ECEXXXA	Professional Core Elective-4	3	2	0	4	100
4	ECEXXXA	Professional Core Elective-5	3	2	0	4	100
5	OEC401A	Open Elective-1	3	0	0	3	100
6	OEC402A	Open Elective-2	3	0	0	3	100
7	ECC401A	Antenna and Propagation	3	2	0	4	100
8	ECC402A	Antenna and Microwave Laboratory	0	0	2	1	50
Total			21	10	2	27	750
Total number of contact hours per week			33 hours				
Number of credits can be registered			Minimum	21	Maximum	27	

Semester-8

S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	ECEXXXA	Professional Core Elective-6	3	2	0	4	100
2	OEC403A	Open Elective-3	3	0	0	3	100
3	OEC404A	Open Elective-4	3	0	0	3	100
4	ECCP42A	Project Work - 2	0	0	24	12	100
Total			9	2	24	22	400
Total number of contact hours per week			35 hours				
Number of credits can be registered			Minimum	17	Maximum	22	

Professional Core Electives:**Semester 6 group**

1. ECE301A: Data Structures and Object Oriented Programming in C++
2. ECE302A: Biomedical Signal and Image Processing
3. ECE303A: Power Electronics
4. ECE304A: Information Theory and Coding
5. ECE305A: Speech Processing
6. ECE306A: Digital System Design using Verilog HDL
7. MEE407A: Supply Chain Management

Semester 7 group

1. ECE401A: CMOS IC Technology and Implementation
2. ECE402A: CMOS Analog Circuit Design
3. ECE403A: CMOS Digital Circuit Design
4. ECE404A: Electronic Board Design
5. ECE405A: Electromagnetic Interference and Compatibility
6. ECE406A: Principles of Medical Imaging
7. ECE407A: Bio-Instrumentation
8. ECE408A: DSP Architecture
9. ECE409A: Optical Communication
10. ECE410A: Wireless Communication
11. ECE411A: Wireless Networks

	<p>12. ECE412A: Satellite Communication 13. ECE413A: Image Processing 14. ECE414A: Multimedia Processing 15. EEE402A: Fuzzy Logic Systems 16. MEE411A: Operations Research</p> <p>Semester 8 group</p> <p>1. ECE415A: Nano Electronics 2. ECE416A: Embedded Systems 3. ECE417A: Radar Engineering 4. MEE408A: Quality Management and Six Sigma</p> <p>Open Electives:</p> <p>A number of electives from faculty of 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.</p>
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21	<p>Programme Delivery</p> <p>As per the time table</p>
22	<p>Teaching and Learning Methods</p> <ol style="list-style-type: none"> 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 Festivals
23	<p>Assessment and Grading</p> <ol style="list-style-type: none"> 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. Component -1 (CE) is subdivided into Term Tests and Assignments, tests carry 25% weight and assignment carry 25% weight. 5. Component -2 is a written examination (SEE) carries 50% weight 6. Laboratory Examination will have two components Component -1(CE): Conduction of Laboratory Exercises and Submission of Report: 50% weight Component -2: SEE (Semester End Laboratory Examination): 50% weight 7. A minimum of overall 40% is required for a pass with 40% in each of the Components 8. The marks distribution for each course is given in the programme structure- section 20 9. Other flexibilities (exceptions) are as per the Academic Regulations of B. Tech. Programme.

24	Attendance A minimum of 85% attendance is compulsory to appear for semester end examinations. Condoning of attendance shortage is as per the Academic Regulations of B.Tech. Programme.
25	Award of Class As per the Academic Regulations of B.Tech. Programme
26	Student support for Learning <ol style="list-style-type: none">1. Course Notes2. Reference Books in the Library3. Magazines and Journals4. Internet Facility5. Computing Facility6. Laboratory Facility7. Workshop facility8. Staff support9. Lounges for Discussions10. Any other support that enhances their learning
27	Quality Control Measures <ol style="list-style-type: none">1. Review of Course Notes2. Review of Question Papers and Assignment Questions3. Student Feedback4. Moderation of assessed work5. Opportunities for students to see their assessed work6. Review by external examiners and external examiners reports7. Staff Student Consultative Committee meetings8. Student exit feedback9. Subject Assessment Board (SAB)10. Programme Assessment Board (PAB)

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Curriculum Map

Course Code						Intended Learning Outcomes											
						Knowledge and Understanding				Cognitive (Thinking) Skills (Critical, Analytical, Problem Solving)				Practical skills			
HSC	BSC	ESC	ECC	OEC	MCC	KU1	KU2	KU3	KU4	CS1	CS2	CS3	CS4	PS1	PS2	PS3	PS4
a	b	c	d	e	f												
101B	101A	101A	201A	401A	101B	cd		cd			bd		d				
102B	102B	102A	202A	402A	102A	bcd	cd	c		d	d			d			
201A	103B	103A	203A	403A	201B		d				d						
301A	104A	104A	EEC201A	404A		d					bd		d		d		
	105B	105A	205A				d							c			
	106B	106A	206A											d	d		
	207A	107A	207A			c	c				b				d		
	208A	108A	208A			cd	d			d	bd		d	d			
		109A	209A				d					d				c	
		110A	210A						d		d			cd		d	
			211A			d				d							
			212A							d				d	d		
			213A										d			d	
			301A			d					d			d			
			302A			d		d			d						
			303A			d			d								
			304A			d	d			d	d			d			
			305A			d		d			d						
			306A											d			
			307A							d			d	d	d		
			308A										d	d	d		
			309A			d					d			d			
			310A			d	d					d					d
			311A			d											
			312A										d	d	d		
			313A										d	d	d	d	
			401A			d	d					d					d
			402A											d			d
			ECE1A*														
			ECE2A*														
			ECE3A*														
			ECE4A*														
			ECE5A*														
			ECE6A*														
			P31A			d	d	d	d	d	d	d	d	d	d	d	d
			P42A			d	d	d	d	d	d	d	d	d	d	d	d
10	26	30	118	16	06	Total 206 credits											

29	Capability Map															
	Course Code						Skills									
	HSC a	BSC b	ESC c	MEC d	OEC e	MCC f	GK	SL	WC	OC	P	B	IM	PM	L	AO
101A	101A	101A	201A	401A	101A	abcdef	abcdef	abcdef	f	f	af	abcdef	abcdef	f	a	
102A	102A	102A	202A	402A	102A	abcdef	abcdef	abcdef	abcdef	a	a	abcdef	abcdef	af	af	
201A	103A	103A	203A	403A	201A	abcdef	abcdef	abcdef	b		af	abcdef	abcdef		a	
301A	104A	104A	EEC201A	404A		abcde	abcde	abcde	c		a	abcde	abcde		a	
	105A	105A	205A			bcd	bcd	bcd	cd			bcd	bcd			
	106A	106A	206A			bcd	bcd	bcd	b			bcd	bcd			
	207A	107A	207A			bcd	bcd	bcd				bcd	bcd			
	208A	108A	208A			bcd	bcd	bcd	c			bcd	bcd			
		109A	209A			cd	cd	cd	c			cd	cd			
		110A	210A			cd	cd	cd	c			cd	cd			
			211A			cd	cd	cd	d			cd	cd			
			212A			cd	cd	cd	cd			cd	cd			
			213A			d	d	d	d			d	d			
			301A			d	d	d	d			d	d			
			302A			d	d	d				d	d			
			303A			d	d	d				d	d			
			304A			d	d	d				d	d			
			305A			d	d	d				d	d			
			306A			d	d	d				d	d			
			307A			d	d	d	d			d	d			
			308A			d	d	d	d			d	d			
			309A			d	d	d	d			d	d			
			310A			d	d	d	d			d	d			
			311A			d	d	d				d	d			
			312A			d	d	d				d	d			
			313A			d	d	d				d	d			
			401A			d	d	d	d			d	d			
			402A			d	d	d	d			d	d			
			ECE1A*			d	d	d				d	d			
			ECE2A*			d	d	d				d	d			
			ECE3A*			d	d	d				d	d			
			ECE4A*			d	d	d	d			d	d			
			ECE5A*			d	d	d	d			d	d			
			ECE6A*			d	d	d	d			d	d			
			P31A			d	d	d	d	d	d	d	d	d	d	
			P42A			d	d	d	d	d	d	d	d	d	d	
30	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.															
31	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.															

32	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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