
Programme Specifications

B.Tech. Programme



Programme: Automotive Engineering
Department: Automotive and Aeronautical Engineering

Faculty of Engineering & Technology
Ramaiah University of Applied Sciences University House, New BEL Road, MSR
Nagar, Bangalore– 560054 www.msruas.ac.in

PROGRAMME SPECIFICATIONS: AUTOMOTIVE ENGINEERING

Faculty	Engineering and Technology (FET)
Department	Automotive and Aeronautical Engineering
Programme	Automotive Engineering
Dean of Faculty	Prof. M. Arulanantham
Head of Department	Prof. Raja R

1	Title of the Award B.Tech. in Automotive Engineering
2	Modes of Study Full Time
3	Awarding Institution /Body Ramaiah University of Applied Sciences
4	Joint Award Not Applicable
5	Teaching Institution Faculty of Engineering and Technology, Ramaiah University of Applied Sciences
6	Date of Programme Specifications February 2018
7	Date of Programme Approval by the Academic Council of MSRUAS May 2018
8	Next Review Date: May 2022
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	<p>Rationale for the Programme</p> <p>Automotive engineering is one of the specialized disciplines of engineering. Designing and manufacturing of automotive components and system have been there world over for many centuries. Automotive Engineering is a specialized discipline, critical to the success of many enterprises. It plays a key role in energy, transportation, development of infrastructure and manufacturing of automotive vehicles.</p> <p>Presently, automotive engineers are contributing in research and development pertaining to environmental and bio-fuel fields. Automotive engineers are responsible for selection and processing of eco-friendly materials, fuels and processes, design and fabrication of automotive components and system to improve the quality of transportation.</p> <p>The automotive engineering programme at Faculty of Engineering and Technology at RUAS has been developed by the members of the faculty based on 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-lifework environment. Opportunities are provided for the students to do their internship in India or abroad depending on their preferences.</p> <p>The alumni of the faculty hold respected positions in industry and business in India and abroad. The faculty interacts with the industry and business offering engineering and consultancy, product design and development services along with training modules to practicing professionals. The faculty interacts with more than 150 companies in public and private sectors including OEMs spread across India.</p>

	The above mentioned features of the programme and the faculty member's strong footing in industry and business make the programme unique. The student admitted to the programme in automotive engineering is given a strong foundation in real-life problem solving which quite are with many institutions is offering similar programme.
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 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 multi-disciplinary 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 Automotive Engineering.</p>
18	<p>Programme Objectives</p> <p>The Automotive Engineering degree programme will impart knowledge of automotive systems and their subsystems; enhances the understanding of underlying engineering principles that govern the behavior of automotive systems; teach analytical modeling, simulation and analysis to study the behavior of automotive systems; provide the skills to design, build and test automotive systems. It also trains students on personal development and interactive skills with a feel for society.</p> <p>The objectives of the programme are:</p> <ol style="list-style-type: none"> 1. To impart knowledge on automotive systems and their sub-systems 2. To facilitate the understanding of underlying engineering principles of automotive systems to explain their construction and working 3. To model, simulate and analyze the behavior of automotive systems to predict and Improve their performance 4. To design and develop prototypes of automotive systems to meet the specific needs

	<ol style="list-style-type: none"> 5. To instrument and test automotive systems for validation 6. To train students on commercial software tools to design, model, simulate automotive vehicle systems 7. To train students on manufacture and production of automotive systems 8. To educate on professional ethics, economics, social sciences and inter personal 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	<p>Programme Intended Learning Outcomes The intended learning outcomes are listed under four headings:</p> <ol style="list-style-type: none"> 1. Knowledge and Understanding, 2. Cognitive skills 3. Practical skills and 4. Capability/ Transferable skills. <p>Knowledge and Understanding</p> <p>After undergoing this programme, a student will be able to:</p> <p>KU1: Identify and describe the various systems of relevance to automotive engineering</p> <p>KU2: Explain the underlying science and engineering principles that govern the systems/processes relevant to automotive engineering</p> <p>KU3: Compare and contrast newer technologies over the existing technologies</p> <p>KU4: Collect, classify and interpret information relevant to automotive engineering</p> <p>Cognitive Skills</p> <p>After undergoing this programme, a student will be able to:</p> <p>CS1: Design automotive systems/processes based on the desired function</p> <p>CS2: Model and simulate automotive systems to analyze the behavior</p> <p>CS3: Modify the existing design/processes to meet newer requirements</p> <p>CS4: Apply science and engineering principles to evaluate performance of automotive systems and answer “what if” questions</p> <p>Practical Skills</p> <p>After undergoing this programme, a student will be able to:</p> <p>PS1: Manufacture /Fabricate automotive components and assemble the system</p> <p>PS2: Instrument a system and test for its performance</p> <p>PS3: Operate and maintain automotive system for efficient and safe operations</p> <p>PS4: Program /Control an automotive system to deliver desired level of performance</p> <p>Capability Skills / 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>

20	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	18BSC101A	Engineering Mathematics-1	3	2	0	4	100
	2	18BSC102A	Engineering Physics	3	2	0	4	100
	3	18ESC101A	Elements of Mechanical Engineering	3	0	0	3	100
	4	18ESC102A	Elements of Electronics Engineering	3	2	0	4	100
	5	18ESC103A	Engineering Drawing	1	0	4	3	100
	6	18BSL103A	Engineering Physics Laboratory	0	0	2	1	50
	7	18ESL104A	Basic Workshop Practice	0	0	2	1	50
	8	18ESL105A	Basic Electronics Laboratory	0	0	2	1	50
	9	18HST101A	Elements of Social Sciences and Ethics	2	0	0	2	50
	Total			15	6	10	23	700
	Total number of contact hours per week			31 hours				
	Number of credits can be registered			Minimum	18	Maximum	23	
	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	18BSC104A	Engineering Mathematics - 2	3	2	0	4	100
	2	18BSC105A	Engineering Chemistry	3	0	0	3	100
	3	18ESC106A	Engineering Mechanics and Construction Materials	3	2	0	4	100
4	18ESC107A	Elements of Electrical Engineering	3	2	0	4	100	
5	18ESC108A	Elements of Computer Science and Engineering	3	2	0	4	100	
6	18ESL109A	Computer Programming Laboratory	0	0	2	1	50	
7	18BSL106A	Engineering Chemistry Laboratory	0	0	2	1	50	
8	18ESL110A	Basic Electrical Engineering Laboratory	0	0	2	1	50	
9	18HST102A	Professional Communication	2	0	0	2	50	
Total			17	8	6	24	700	
Total number of contact hours per week			31 hours					
Number of credits can be registered			Minimum	20	Maximum	24		

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	18BSC101A	Engineering Mathematics-1	3	2	0	4	100	
2	18BSC105A	Engineering Chemistry	3	0	0	3	100	
3	18ESC106A	Engineering Mechanics and Construction Materials	3	2	0	4	100	
4	18ESC107A	Elements of Electrical Engineering	3	2	0	4	100	
5	18ESC108A	Elements of Computer Science and Engineering	3	2	0	4	100	
6	18BSL109A	Engineering Chemistry Laboratory	0	0	2	1	50	
7	18ESL106A	Basic Electrical Laboratory	0	0	2	1	50	
8	18ESL110A	Computer Programming Laboratory	0	0	2	1	50	
9	18HST102A	Professional Communication	2	0	0	2	50	
Total			17	8	6	24	700	
Total number of contact hours per week			31 hours					
Number of credits can be registered			Minimum	20	Maximum	24		
Semester: 2, Physics Cycle								
S. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks	
1	18BSC104A	Engineering Mathematics-2	3	2	0	4	100	
2	18BSC102A	Engineering Physics	3	2	0	4	100	
3	18ESC101A	Elements of Mechanical Engineering	3	0	0	3	100	
4	18ESC102A	Elements of Electronics Engineering	3	2	0	4	100	
5	18ESC103A	Engineering Drawing	1	0	4	3	100	
6	18BSL103A	Engineering Physics Laboratory	0	0	2	1	50	
7	18ESL104A	Basic Workshop Practice	0	0	2	1	50	
8	18ESL105A	Basic Electronics Laboratory	0	0	2	1	50	
9	18HST101A	Elements of Social Science	2	0	0	2	50	
Total			15	6	10	23	700	
Total number of contact hours per week			31 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	18BSC207A	Engineering Mathematics - 3	3	2	0	4	100
2	18AUC201A	Materials Science for Engineers	3	0	0	3	100
3	18AUC202A	Elements of Automotive Engineering and Technologies	4	0	0	4	100
4	18AUC203A	Thermodynamics for Engineers	4	0	0	4	100
5	18AUC204A	Fluid Mechanics and Machines	3	2	0	4	100
6	18AUC205A	3D Modeling and Machine Drawing	0	0	4	2	100
7	18AUL206A	Automotive Systems Laboratory	0	0	2	1	50
8	18AUL207A	Fluid Mechanics and Machines Laboratory	0	0	2	1	50
9	18AUL208A	Materials Science Laboratory	0	0	2	1	50
10	18CEN201A	Environmental Studies	2	0	0	2	50
Total			19	4	10	26	800
Total number of contact hours per week			33 hours				
Number of credits can be registered			Minimum	21	Maximum	26	
Semester: 4							
Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	18BSC208A	Engineering Mathematics - 4	3	2	0	4	100
2	18AUC209A	Strength of Materials	3	2	0	4	100
3	18AUC210A	Theory of Machines	3	2	0	4	100
4	18AUC211A	Manufacturing Processes for Automotive and Aerospace Systems	4	0	0	4	100
5	18AUC212A	Mechanical Measurements	3	0	0	3	100
6	18AUL213A	Strength of Materials Laboratory	0	0	2	1	50
7	18AUL214A	Kinematics and Dynamics Simulation Laboratory	0	0	2	1	50
8	18AUL215A	Manufacturing Processes Laboratory	0	0	2	1	50
9	18AUL216A	Mechanical Measurements Laboratory	0	0	2	1	50
10	18HST201A	Constitution, Human Rights and Law	2	0	0	2	50
Total			18	6	8	25	750
Total number of contact hours per week			32 hours				
Number of credits can be registered			Minimum	20	Maximum	25	

Semester: 5

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks	
1	18AUC301A	Applied Thermodynamics and I.C. Engines	3	2	0	4	100	
2	18AUC302A	Automotive Transmission	4	0	0	4	100	
3	18AUC303A	Automotive Electrical and Electronic Systems	4	0	0	4	100	
4	18AUC304A	Design of Machine Elements	3	2	0	4	100	
5	18AUC305A	Control Systems Engineering	4	0	0	4	100	
6	18AUL306A	Fuel Testing and Power Train Laboratory	0	0	2	1	50	
7	18AUL307A	Automotive Electrical and Electronics Laboratory	0	0	2	1	50	
8	18AUL308A	Control Systems Laboratory	0	0	2	1	50	
9	18AUL309A	Machining Practices	0	0	2	1	50	
10	18AUC310A	Engineering Economics and Cost Estimation for Automotive Engineers	3	0	0	3	100	
Total			21	4	08	27	800	
Total number of contact hours per week			33 hours					
Number of credits can be registered			Minimum	22	Maximum	27		

Semester: 6

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks	
1	18AUC311A	Vehicle Aerodynamics and Styling	4	0	0	4	100	
2	18AUC312A	Design of Automotive Components	3	2	0	4	100	
3	18AUC313A	Finite Element Analysis	3	2	0	4	100	
4	18AUC314A	Automotive Noise Vibration and Harshness	4	0	0	4	100	
5	18AUC315A	Vehicle Dynamics and Handling	3	2	0	4	100	
6	18AUC316A	Vehicle Transport Management	3	0	0	3	100	
7	18AUL317A	Vehicle Aerodynamics and Styling Laboratory	0	0	2	1	50	
8	18AUL318A	CAE Practices	0	0	2	1	50	
9	18AUL319A	Automotive NVH Laboratory	0	0	2	1	50	
Total			20	6	6	26	750	
Total number of contact hours per week			32 hours					
Number of credits can be registered			Minimum	21	Maximum	26		

Semester: 7

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	18AUE4XXA	Professional Core Elective -1	4	0	0	4	100
2	18AUE4XXA	Professional Core Elective -2	4	0	0	4	100
3	18AUE4XXA	Professional Core Elective -3	4	0	0	4	100
5	18OEE41XA	Open Elective-1	3	0	0	3	100
6	18OEE42XA	Open Elective-2	3	0	0	3	100
7	18AUC401A	Seminar	0	0	2	1	50
8	18AUPI41A 18AUPI42A	i) Project Work – 1 ii) Internship (Choose Any one)	0	0	16	8	100
Total			18	0	18	27	650
Total number of contact hours per week			36 hours				
Number of credits can be registered			Minimum	22	Maximum	27	

Note: Internship can be in any Industry, Business, University or Research organization in India or abroad

Semester: 8

Sl. No.	Code	Course Title	Theory (h/W/S)	Tutorials (h/W/S)	Practical (h/W/S)	Total Credits	Max. Marks
1	18AUE4XXA	Professional Core Elective -4	4	0	0	4	100
2	18OEE43XA	Open Elective-3	3	0	0	3	100
3	18OEE44XA	Open Elective -4	3	0	0	3	100
4	18AUCP43A	Project Work -2	0	0	24	12	100
Total			10	0	24	22	400
Total number of contact hours per week			34 hours				
Number of credits can be registered			Minimum	19	Maximum	22	

Professional Core Electives (PCE):						
7th Semester						
Name of the Specialisation	PCE - 1		PCE - 2		PCE - 3	
	Code	Course Title	Code	Course Title	Code	Course Title
Advanced Vehicles	18AUE411A	Electric Mobility and Energy Storage	18AUE421A	Sensors and Controls for Automotive Applications	18AUE431A	Intelligent Vehicle Technology
Fuels and Combustion	18AUE412A	Automotive Fuels and Combustion	18AUE422A	Automotive Pollution and Control	18AUE432A	Simulation of I.C. Engine Process
Automotive Systems	18AUE413A	Automotive Product Design	18AUE423A	Vehicle Body Engineering and Safety Systems	18AUE433A	Design of Automotive Systems
Data Science and Analytics	18BSE401A	Probability and Statistics	18CSE421A	Data Science Foundation	18CSE431A	Data Science Algorithms and applications
<p>Note: Totally student needs to select three professional core elective courses during 7th Semester and each one course from PCE-1, PECE-2 and PCE-3 Group must be selected.</p>						
8th Semester						
PCE - 4						
Name of the Specialisation	CODE					
Advanced Vehicles	18AUE441A	Autonomous Car and Advanced Transportation Systems				
Fuels and Combustion	18AUE442A	Alternative Fuels for I.C. Engines				
Automotive Systems	18AUE443A	Fatigue and Fracture Mechanics				
Data Science and Analytics	18CSE441A	Data Analytics				
<p>Note: Student must select any one course from PCE-4 during 8th Semester.</p>						
<p>Open Electives: A number of electives from faculty of engineering, management and commerce, art and design, hospitality management and catering technology, pharmacy, dental sciences as mentioned in university website. Students can choose the open electives on their own choice.</p>						
21	<p>Course Delivery 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 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- section20 9. Other flexibilities (exceptions) are as per the Academic Regulations of B.Tech. Programme.
24	<p>Attendance</p> <p>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.</p>
25	<p>Award of Class</p> <p>As per the Academic Regulations of B.Tech. Programme</p>
26	<p>Student Support for Learning</p> <ol style="list-style-type: none"> 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	<p>Quality Control Measures</p> <ol style="list-style-type: none"> 1. Review of Course Notes 2. Review of Question Papers and Assignment Questions 3. Student Feedback 4. Moderation of Assessed Work 5. Opportunities for students to see their assessed work 6. Review by external examiners and external examiners reports 7. Staff Student Consultative Committee meetings 8. Student exit feedback 9. Subject Assessment Board (SAB) 10. Programme Assessment Board (PAB)

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Curriculum Map

Intended Learning Outcomes																
Course code					Knowledge and Understanding				Cognitive(Thinking) Skills(Critical, Analytical, Problem Solving)				Practical skills			
18HST	18BSC/L	18ESC/L	18AUC/L/E	18OEE	KU1	KU2	KU3	KU4	CS1	CS2	CS3	CS4	PS1	PS2	PS3	PS4
a	b	c	d	e												
101A	101A	101A	201A	41XA	bcd	cd	cd	cd	d	d	d					
102A	102A	102A	202A	42XA	bcd	cd	cd	cd								
201A	L103A	103A	203A	43XA	bcd	cd	cd	cd	d	d	d		bc			
	104A	L104A	204A	44XA	bcd	cd	d	d			d		c			
	105A	L105A	205A		bcd	cd	cd	cd	d	d	d		d	c		c
	L106A	106A	L206A		bcd	cd	cd	cd	c	c	c		cd	d	d	
	207A	107A	L207A		bcd	cd	cd	cd	bc	bc				d		
	208A	108A	L208A		bcd	bc	cd	cd	b	b		b	d			
	CEN201A	L109A	209A		cd	cd	cd	cd		c	d	cd		c	c	
		L110A	210A		cd	cd	cd	cd	d	d	d	d	c			
			211A		d	d	d	d	d		d	d				
			212A		d	d	d	d	d		d	d				
			L213A			d							d	d		
			L214A		d				d	d	d	d	d	d	d	
			L215A		d	d	d				d	d	d			
			L216A		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	d	d				
			305A		d	d	d	d	d	d	d	d				
			L306A		d	d	d					d			d	d
			L307A		d	d	d	d	d	d	d			d	d	d
			L308A		d	d	d	d		d	d			d	d	d
			L309A		d								d			
			310A		d	d	d	d			d					
			311A		d	d	d	d	d	d	d	d				
			312A		d	d	d	d	d	d	d	d				
			313A			d	d	d		d	d	d				
			314A		d	d	d	d	d	d	d	d				
			315A		d	d	d	d	d	d	d	d				
			316A		d		d	d			d					
			L317A		d							d		d	d	
			L318A		d	d	d	d		d	d			d	d	
			L319A		d	d	d	d		d	d			d	d	d
			E41XA*													
			E42XA*													
			E43XA*													
			E44XA*													
			401A		d	d	d	d			d	d				
			PI4XA*		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
6	27	26	129	12	Total 200 credits											

*Depends on elective Course chosen

18HST	Course				Skills									
	18BSC /L	18ESC /L	18AU C/L/E	18 OEE	GK	SL	WC	OC	P	B	IM	PM	L	AO
	a	b	c	d	e									
101A	101A	101A	201A	41XA	abcde	abcde	abcde	a	a	a	abcde	abcde	a	a
102A	102A	102A	202A	42XA	abcde	abcde	abcde	abcde	a	a	abcde	abcde	a	a
201A	L103A	103A	203A	43XA	abcde	abcde	abcde	ab	a	a	abcde	abcde		
	104A	L104A	204A	44XA	bcde	bcde	bcde	c			bcde	bcde		
	105A	L105A	205A		bcd	bcd	bcd	c			bcd	bcd		
	L106A	106A	L206A		bcd	bcd	bcd	bd			bcd	bcd		
	207A	107A	L207A		bcd	bcd	bcd	d			bcd	bcd		
	208A	108A	L208A		bcd	bcd	bcd	d			bcd	bcd		
	CEN201A	L109A	209A		bcd	bcd	bcd	c			bcd	bcd		b
		L110A	210A		cd	cd	cd	c			cd	cd		
			211A		d	d	d				d	d		
			212A		d	d	d				d	d		
			L213A		d	d	d	d			d	d		
			L214A		d	d	d	d			d	d		
			L215A		d	d	d	d			d	d		
			L216A		d	d	d	d			d	d		
			301A		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		
			L306A		d	d	d	d			d	d		
			L307A		d	d	d	d			d	d		
			L308A		d	d	d	d			d	d		
			L309A		d	d	d	d			d	d		
			310A		d	d	d				d	d		
			311A		d	d	d				d	d		
			312A		d	d	d				d	d		
			313A		d	d	d				d	d		
			314A		d	d	d				d	d		
			315A		d	d	d				d	d		
			316A		d	d	d				d	d		
			L317A		d	d	d	d			d	d		
			L318A		d	d	d	d			d	d		
			L319A		d	d	d	d			d	d		
			E41XA*		d	d	d				d	d		
			E42XA*		d	d	d				d	d		
			E43XA*		d	d	d				d	d		
			E44XA*		d	d	d				d	d		
			401A		d	d	d	d	d	d	d	d	d	d
			PI4XA*		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: Behavioral, 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, 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 show case 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.

