Sri Krishna College of Engineering and Technology

An Autonomous Institution, Affiliated to Anna University

Coimbatore – 641 008

REGULATION 2020

CURRICULUM AND SYLLABI

B.E. MECHANICAL ENGINEERING

[BATCH: 2021 – 2025]

DEPARTMENT OF MECHANICAL ENGINEERING

SRI KRISHNA COLLEGE OF ENGNEERING AND TECHNOLOGY

An Autonomous Institution Affiliated to Anna University
Kuniamuthur,
Coimbatore - 641 008

VISION AND MISSION OF THE DEPARTMENT

Vision

The department aspires to produce experts in Mechanical Engineering with moral values and desires to set up centers of excellence in innovative design and testing, composite materials, automation, automotive technology and green fuels.

Mission

To produce world class mechanical engineering graduates by promoting core technical competency blended with advanced computing skills, creative thinking and desire to upgrade continuously, so as to empower them to the expectation of the industries in our country and abroad and also to impart the interpersonal skills and make them realize the values of life.

Programme Outcomes (POs):-

At the time of their graduation students of Mechanical Engineering Programme should be in possession of the following Programme Outcomes

a.	**Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
b.	**Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
c.	**Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
d.	**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
e.	**Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
f.	**The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
g.	**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
h.	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
i.	**Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
j.	**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

k.	**Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
l.	**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Programme Educational Objectives (PEOs):-

The following Programme Educational Objectives are designed based on the department mission

PEO 1: Provide strong foundation in the science and engineering fundamentals necessary to formulate, solve and analyze real time mechanical engineering problems.

PEO 2: Develop the ability to synthesize data and technical concepts for making decisions in an ethical manner considering the socio-economic scenario.

PEO 3: Enable to work as part of teams on multidisciplinary projects with good communication and interpersonal skills in the emerging areas like automation, composite materials, automotive technology, green fuels etc.,

PEO 4: Prepare for successful careers in industry that meet the needs of Indian and multinational companies and to inculcate the qualities of continuous learning and entrepreneurial skills.

Programme Specific Outcomes (PSO's):-

At the end of the Programme, Graduate shall have

PSO 1	Design, develop and analyse the engineering components using advanced design softwares.
PSO 2	Ability to fabricate real time mechanical systems and test its worthiness.
PSO 3	Ability to apply the advancements in mechanical engineering to promote automation.

Mapping of PO's and PSO's to PEO's

Programme Educational Objectives	Programme Outcomes												Programme Specific Outcomes		
	a	b	c	d	e	f	g	h	i	j	k	l	1	2	3
PEO 1	3	3	3	3		1					2		3	3	2
PEO 2	3	3	3	3		3	3	3					3	3	2
PEO 3	2	2	2	1	3	3	3		3	3	3	1	3	3	3
PEO 4	3	3	2	2	2		1	2	1	3	2	3	3	3	3

3	Strongly agreed	**2**	Moderately agreed	**1**	Reasonably agreed

B.E. MECHANICAL ENGINEERING
REGULATION 2020 (Batch 2021-2025)
CHOICE BASED CREDIT SYSTEM
I – VIII SEMESTER CURRICULUM AND SYLLABI

SEMESTER I								
SL. No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs./wk.**	**C**	**O**	**Ext./Int.**	**Cat.**
THEORY CUM PRACTICAL								
1.	21MA101	Engineering Mathematics I	2/1/2	5	4	-	50/50	BSC
2.	21CH101	Engineering Chemistry	3/0/3	6	4.5	-	50/50	BSC
3.	21EN101	Technical Communication Skills	2/0/2	4	3	-	50/50	HSMC
4.	21CS111	Problem Solving using C Programming	3/0/2	5	4	-	50/50	ESC
5.	21ME101	Engineering Drawing	1/0/3	4	2.5	-	50/50	ESC
6.	21EE111	Basics of Electrical and Electronics Engineering	3/0/2	5	4	-	50/50	ESC
MANDATORY COURSE								
7.	21MC101	Induction Programme	3 WEEKS		0	-	0/100	MC
		Total	**14/1/14**	**29**	**22**	**-**	**700**	

SEMESTER II								
SL. No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs./wk.**	**C**	**O**	**Ext./Int.**	**Cat.**
THEORY								
1.	21ME201	Engineering Mechanics	3/1/0	4	4	-	60/40	ESC
2.	21ME202	Manufacturing Technology I	3/0/0	3	3	-	60/40	ESC
3.	21GE201	Universal Human Values	3/0/0	3	3	-	60/40	HSMC
THEORY CUM PRACTICAL								
4.	21MA201	Engineering Mathematics II	2/1/2	5	4	-	50/50	BSC
5.	21PH201	Applied Physics	3/0/3	6	4.5	-	50/50	BSC
PRACTICAL								
6.	21ME103	Engineering Practices Laboratory	0/0/3	3	1.5	-	40/60	ESC
7.	21CS211	Python for Engineers Laboratory	1/0/3	4	2.5	-	40/60	ESC
MANDATORY COURSE								
8.	21MC102	Environmental Sciences	2/0/0	2	0	-	0/100	MC
		Total	**17/2/11**	**30**	**22.5**	**-**	**800**	

SEMESTER III								
SL. No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs./wk.**	**C**	**O**	**Ext./Int.**	**Cat.**
THEORY								
1.	21ME301	Solid Mechanics	3/1/0	4	4	-	60/40	PCC
2.	21ME302	Engineering Thermodynamics	3/0/0	3	3	-	60/40	PCC
3.	21ME303	Fluid Mechanics and Machinery	3/0/0	3	3	-	60/40	PCC
4.	21ME304	Industrial Metallurgy	3/0/0	3	3	-	60/40	ESC
5.	21MA301	Engineering Mathematics III	3/1/0	4	4	-	60/40	BSC
THEORY CUM PRACTICAL								
6.	21ME305	Manufacturing Technology- II (with Lab)	3/0/2	5	4	-	50/50	PCC
PRACTICAL								
7.	21ME306	Fluid Mechanics and Strength of Materials Laboratory	0/0/3	3	1.5	-	40/60	PCC
MANDATORY COURSE								
8.	21MCZZZ	Mandatory Course-III	2/0/0	2	0	-	0/100	MC
		Total	**20/2/5**	**27**	**22.5**	**-**	**800**	

SEMESTER IV								
SL. No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs./wk.**	**C**	**O**	**Ext./Int.**	**Cat.**
THEORY								
1.	21ME401	Automobile Engineering	3/0/0	3	3	-	60/40	PCC
2.	21ME402	Mechanics of Machines	3/1/0	4	4	-	60/40	PCC
3.	21ME403	Metrology and Instrumentation	3/0/0	3	3	-	60/40	PCC
4.	21ME404	Thermal Engineering	3/0/0	3	3	-	60/40	PCC
5.	21MA401	Probability and Numerical Methods	3/1/0	4	4	-	60/40	BSC
6.	21XXZZZ	Open Elective – I	3/0/0	3	3	-	60/40	OEC
PRACTICAL								
7.	21ME405	Computer Aided Machine Drawing	0/0/3	3	1.5	-	40/60	PCC
8.	21ME406	Metrology and Dynamics Laboratory	0/0/3	3	1.5	-	40/60	PCC
9.	21ME407	Thermal Engineering Laboratory	0/0/2	2	1	-	40/60	PCC
		Total	**18/2/8**	**28**	**24**	**-**	**900**	

SEMESTER V								
SL. No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs./wk.**	**C**	**O**	**Ext./Int.**	**Cat.**
THEORY								
1.	21ME501	Design of Machine Elements	4/0/0	4	4	-	60/40	PCC
2.	21ME502	Applied Hydraulics and Pneumatics	3/0/0	3	3	-	60/40	PCC
3.	21ME013	Industry 4.0	3/0/0	3	3	-	60/40	EC
4.	21ME503	Heat and Mass Transfer	3/0/0	3	3	-	60/40	PCC
5.	21ME9ZZ	Professional Elective-I	3/0/0	3	3	-	60/40	PEC
6.	21XXZZZ	Open Elective – II	3/0/0	3	3	-	60/40	OEC
PRACTICAL								
7.	21ME504	CAD/CAM Laboratory	0/0/3	3	1.5	-	40/60	PCC
8.	21ME505	Heat Transfer Laboratory	0/0/2	2	1	-	40/60	PCC
MANDATORY COURSE								
9.	21MCZZZ	Mandatory Course-IV	2/0/0	2	0	-	0/100	MC
		Total	**21/0/5**	**26**	**21.5**	**-**	**900**	

SEMESTER VI								
SL. No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs./wk.**	**C**	**O**	**Ext./Int.**	**Cat.**
THEORY								
1.	21ME601	Design of Transmission Systems	3/0/0	3	3	-	60/40	PCC
2.	21ME602	Computational Mechanics	3/0/0	3	3	-	60/40	PCC
3.	21ME9ZZ	Professional Elective-II	3/0/0	3	3	-	60/40	PEC
4.	21ME9ZZ	Professional Elective-III	3/0/0	3	3	-	60/40	PEC
5.	21ME9ZZ	Professional Elective-IV	3/0/0	3	3	-	60/40	PEC
6.	21MEZZZ	Emerging Elective- I	3/0/0	3	3	-	60/40	EEC
PRACTICAL								
7.	21ME603	Simulation and Analysis Laboratory	0/0/3	3	1.5	-	40/60	PCC
PROJECT WORK								
8.	21ME604	Design Thinking and Mini Project	0/0/3	3	1.5	-	40/60	PROJ
MANDATORY COURSE								
9.	21MCZZZ	Mandatory Course-V	2/0/0	2	0	-	0/100	MC
		Total	**20/0/6**	**26**	**21**	**-**	**900**	

SEMESTER VII								
SL. No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs./wk.**	**C**	**O**	**Ext./Int.**	**Cat.**
THEORY								
1.	21ME701	Industrial Engineering and Operations Management	3/0/0	3	3	-	60/40	HSMC
2.	21ME702	Mechatronics	3/0/0	3	3	-	60/40	ESC
3.	21MEZZZ	Emerging Elective – II	3/0/0	3	3	-	60/40	EEC
4.	21ME9ZZ	Professional Elective-V	3/0/0	3	3	-	60/40	PEC
5.	21ME9ZZ	Professional Elective-VI	3/0/0	3	3	-	60/40	PEC
PRACTICAL								
6.	21ME703	Mechatronics Laboratory	0/0/3	3	1.5	-	40/60	ESC
PROJECT WORK								
7.	21ME704	Phase I – Project Work	0/0/2	2	1	-	40/60	PROJ
		Total	**15/0/5**	**20**	**17.5**	**-**	**700**	

SEMESTER VIII								
SL. No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs./wk.**	**C**	**O**	**Ext./Int.**	**Cat.**
PROJECT WORK								
1.	21ME801	Phase II – Project Work	0/0/24	24	12	-	40/60	PROJ
		Total	**0/0/24**	**24**	**12**	**-**	**100**	

EMPLOYABILITY ENHANCEMENT SKILLS								
SL. No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs./wk.**	**C**	**O**	**Ext./Int.**	**Cat.**
1.	21MEE01	Industrial Practice (21 Days) / Publication in Journals (National/International) / IPR	-	-	2	-	-	EES
		Total	**-**	**-**	**2**	**-**	**-**	

SCHEME OF CREDIT DISTRIBUTION – SUMMARY

SL. No.	Stream	Credits/Semester									C	%
		I	II	III	IV	V	VI	VII	VIII			
1	Humanities & Social Sciences Including Management (HSMC)	3	3	-	-	-	-	3	-		9	5.45
2	Basic Sciences (BSC)	8.5	8.5	4	4	-	-	-	-		25	15.15
3	Engineering Sciences (ESC)	10.5	11	3	-	-	-	4.5	-		29	17.58
4	Professional Core (PCC)	-	-	15.5	17	12.5	7.5	-	-		52.5	31.82
5	Professional Electives (PEC)	-	-	-	-	3	9	6	-		18	10.91
6	Open Electives (OEC) / Emerging Courses (EC)/ Emerging Elective Courses (EEC)	-	-	-	3	6	3	3	-		15	9.09
7	Project Work (PROJ)	-	-	-	-	-	1.5	1	12		14.5	8.79
8.	Employability Enhancement Skills (EES)	-	-	-	-	-	-	-	-	2	2	1.21
9.	Mandatory Course (MC)	-	-	-	-	-	-	-	-		0	0
Total		**22**	**22.5**	**22.5**	**24**	**21.5**	**21**	**17.5**	**12**	**2**	**165**	**100**

STRUCTURE FOR UNDERGRADUATE ENGINEERING PROGRAM

S. No.	Course Work - Subject Area	AICTE Suggested Credits	AICTE model curriculum credits	SKCET Credits (165)
1.	Humanities and Social Sciences (HS), including Management;	12*	6	**9**
2.	Basic Sciences (BS) including Mathematics, Physics, Chemistry, Biology;	25*	30	**25**
3.	Engineering Sciences (ES), including Materials, Workshop, Drawing, Basics of Electrical/Electronics/Mechanical/Computer Engineering, Instrumentation;	24*	27	**29**
4.	Professional Subjects-Core (PC), relevant to the chosen specialization/branch; (May be split into Hard (no choice) and Soft (with choice), if required ;)	48*	50.5	**52.5**
5.	Professional Subjects – Electives (PE), relevant to the chosen specialization/ branch;	18*	18	**18**
6.	Open Subjects- Electives (OE), from other technical and/or emerging subject areas;	18*	12	**15**
7.	Project Work, Seminar and/or Internship in Industry or elsewhere.	15*	15	**14.5**
8.	Employability Enhancement Skills	Non-credit		**2**
9.	Mandatory Courses (MC);	Non-credit		
Total		160*	158.5	**165**
**Minor Variations is allowed as per need of the respective disciplines*				

HUMANITIES & SOCIAL SCIENCES INCLUDING MANAGEMENT (9 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	21EN101	Technical Communication Skills	2/0/2	4	3	HSMC
2.	21GE201	Universal Human Values	3/0/0	3	3	HSMC
3.	21ME701	Industrial Engineering and Operations Management	3/0/0	3	3	HSMC

BASIC SCIENCE COURSES (25 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	21MA101	Engineering Mathematics I	2/1/2	5	4	BSC
2.	21CH101	Engineering Chemistry	3/0/3	6	4.5	BSC
3.	21MA201	Engineering Mathematics II	2/1/2	5	4	BSC
4.	21PH201	Applied Physics	3/0/3	6	4.5	BSC
5.	21MA301	Engineering Mathematics III	3/1/0	4	4	BSC
6.	21MA401	Probability and Numerical Methods	3/1/0	4	4	BSC

ENGINEERING SCIENCE COURSES (29 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	21CS111	Problem Solving using C Programming	3/0/2	5	4	ESC
2.	21ME101	Engineering Drawing	1/0/3	4	2.5	ESC
3.	21EE111	Basics of Electrical and Electronics Engineering	3/0/2	5	4	ESC
4.	21ME201	Engineering Mechanics	3/1/0	4	4	ESC
5.	21ME202	Manufacturing Technology I	3/0/0	3	3	ESC
6.	21ME103	Engineering Practices Laboratory	0/0/3	3	1.5	ESC
7.	21CS211	Python for Engineers Laboratory	1/0/3	4	2.5	ESC
8.	21ME304	Industrial Metallurgy	3/0/0	3	3	ESC
9.	21ME702	Mechatronics	3/0/0	3	3	ESC
10.	21ME703	Mechatronics Laboratory	0/0/3	3	1.5	ESC

PROFESSIONAL CORE COURSES (52.5 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	21ME301	Solid Mechanics	3/1/0	4	4	PCC
2.	21ME302	Engineering Thermodynamics	3/0/0	3	3	PCC
3.	21ME303	Fluid Mechanics and Machinery	3/0/0	3	3	PCC
4.	21ME305	Manufacturing Technology- II (with Lab)	3/0/2	5	4	PCC
5.	21ME306	Fluid Mechanics and Strength of Materials Laboratory	0/0/3	3	1.5	PCC
6.	21ME401	Automobile Engineering	3/0/0	3	3	PCC

7.	21ME402	Mechanics of Machines	3/1/0	4	4	PCC
8.	21ME403	Metrology and Instrumentation	3/0/0	3	3	PCC
9.	21ME404	Thermal Engineering	3/0/0	3	3	PCC
10.	21ME405	Computer Aided Machine Drawing	0/0/3	3	1.5	PCC
11	21ME406	Metrology and Dynamics Laboratory	0/0/3	3	1.5	PCC
12.	21ME407	Thermal Engineering Laboratory	0/0/2	2	1	PCC
13.	21ME501	Design of Machine Elements	4/0/0	4	4	PCC
14.	21ME502	Applied Hydraulics and Pneumatics	3/0/0	3	3	PCC
15.	21ME503	Heat and Mass Transfer	3/0/0	3	3	PCC
16.	21ME504	CAD/CAM Laboratory	0/0/3	3	1.5	PCC
17.	21ME505	Heat Transfer Laboratory	0/0/2	2	1	PCC
18.	21ME601	Design of Transmission Systems	3/0/0	3	3	PCC
19.	21ME602	Computational Mechanics	3/0/0	3	3	PCC
20.	21ME603	Simulation and Analysis Laboratory	0/0/3	3	1.5	PCC

PROFESSIONAL ELECTIVE COURSES (18 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
ELECTIVE STREAM I – ENGINEERING DESIGN						
1.	21ME901	Product Design and Development	3/0/0	3	3	PEC
2.	21ME902	Tool and Die Design	3/0/0	3	3	PEC
3.	21ME903	Fundamentals of Fracture Mechanics	3/0/0	3	3	PEC
4.	21ME904	Design for Manufacturing and Assembly	3/0/0	3	3	PEC
5.	21ME905	Optimization Techniques in Engineering Design	3/0/0	3	3	PEC
6.	21ME906	Industrial Robotics	3/0/0	3	3	PEC
7.	21ME907	Engineering Failure Analysis	3/0/0	3	3	PEC
8.	21ME908	MEMS/NEMS	3/0/0	3	3	PEC
9.	21ME909	Surface Engineering	3/0/0	3	3	PEC
ELECTIVE STREAM II - THERMAL ENGINEERING						
1.	21ME910	Non-Conventional Energy Sources	3/0/0	3	3	PEC
2.	21ME911	Refrigeration and Air Conditioning	3/0/0	3	3	PEC
3.	21ME912	Alternate Fuels and E-Vehicle Technology	3/0/0	3	3	PEC
4.	21ME913	Turbo Machines	3/0/0	3	3	PEC
5.	21ME914	Gas Dynamics and Jet Propulsion	3/0/0	3	3	PEC
6.	21ME915	Power Plant Engineering	3/0/0	3	3	PEC
7.	21ME916	Energy Conservation and Management	3/0/0	3	3	PEC
8.	21ME917	Internal Combustion Engines	3/0/0	3	3	PEC
9.	21ME918	Cryogenic Engineering	3/0/0	3	3	PEC

ELECTIVE STREAM III - MANUFACTURING /INDUSTRIAL ENGINEERING						
1.	21ME919	Composite Materials, Processing and Applications	3/0/0	3	3	PEC
2.	21ME920	Industrial Layout, Ergonomics and Safety Engineering	3/0/0	3	3	PEC
3.	21ME921	Additive Manufacturing	3/0/0	3	3	PEC
4.	21ME922	Lean Six Sigma	3/0/0	3	3	PEC
5.	21ME923	Theory of Metal Cutting	3/0/0	3	3	PEC
6.	21ME924	Entrepreneurship Development and Managerial Skills	3/0/0	3	3	PEC
7.	21ME925	Special Manufacturing Processes	3/0/0	3	3	PEC
8.	21ME926	Engineering Management and Financial Accounting	3/0/0	3	3	PEC
9.	21ME927	Advanced Casting and Welding Processes	3/0/0	3	3	PEC

OPEN ELECTIVE COURSES
(Offered to Other Branches)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	21ME001	Industrial Safety	3/0/0	3	3	OEC
2.	21ME002	Fundamentals of MEMS/NEMS	3/0/0	3	3	OEC
3.	21ME003	Total Quality Management	3/0/0	3	3	OEC
4.	21ME004	Product Development	3/0/0	3	3	OEC
5.	21ME005	Fundamentals of Additive Manufacturing	3/0/0	3	3	OEC
6.	21ME006	Technology Management	3/0/0	3	3	OEC

EMERGING ELECTIVE COURSES

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	21ME007	Applied Soft Computing Techniques	3/0/0	3	3	EEC
2.	21ME008	Internet of Things for Mechanical Engineers	3/0/0	3	3	EEC
3.	21ME009	Data Analytics for Mechanical Engineers	3/0/0	3	3	EEC
4.	21ME010	Expert System and Machine Learning	3/0/0	3	3	EEC
5.	21ME011	Fuel Cells	3/0/0	3	3	EEC
6.	21ME012	Product Life Cycle Management	3/0/0	3	3	EEC

PROJECT WORK (14.5 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	21ME604	Design Thinking and Mini Project	0/0/3	3	1.5	PROJ
2.	21ME704	Phase I – Project Work	0/0/2	2	1	PROJ
3.	21ME801	Phase II – Project Work	0/0/24	24	12	PROJ

EMPLOYABILITY ENHANCEMENT SKILLS (2 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	21MEE01	Industrial Practice (21 Days) and Publication in Journals (National/International) / IPR	-	-	2	EES

MANDATORY COURSES (Non Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	21MC101	Induction Program	3 WEEKS		0	MC
2.	21MC102	Environmental Sciences	2/0/0	2	0	MC
3.	21MC103	Soft Skills	2/0/0	2	0	MC
4.	21MC104	Management Organizational Behavior	2/0/0	2	0	MC
5.	21MC105	General Aptitude	2/0/0	2	0	MC
6.	21MC106	Life Skills and Ethics	2/0/0	2	0	MC
7.	21MC107	Stress Management	2/0/0	2	0	MC
8.	21MC108	Constitution of India	2/0/0	2	0	MC
9.	21MC109	Essence of Indian Traditional Knowledge	2/0/0	2	0	MC
10.	21MC110	Biology	2/0/0	2	0	MC

* Courses conducted either by internal faculty or through MOOCs

ONE CREDIT COURSES (Additional Credits) / VALUE ADDED COURSES

S.No	Course Code	Course Title	Credits
1.	21VA500	Certification in Creo, ANSYS, CFD, LabVIEW, CATIA, NDT etc.,	1
2.	21VA501	Any other certification from MNCs/OEMs, Texas Instruments, Bosch, Rexroth, SAE Skill India etc.,	1
3.	21VA502	NSS	1
4.	21VA503	Spoken Hindi / Foreign Language	1
5.	21VA504	Massive Open Online Courses (MOOC) / NPTEL	1
6.	21VA505	Geometric Dimensioning and Tolerancing	1
7.	21VA506	Automotive Interior/Exterior Plastic Parts Design	1
8.	21VA507	Project Management Process	1
9.	21VA508	Heating, Ventilation and Air Conditioning – HVAC	1

SERVICE SUBJECTS

SL. No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	21ME103	Engineering Practices Laboratory	0/0/3	3	1.5	40/60	ES
2	21ME111	Engineering Graphics	1/0/3	4	2.5	40/60	ES

SEMESTER WISE CREDIT DISTRIBUTION: -

Semester	I	II	III	IV	V	VI	VII	VIII	EES	Total
Credits	22	22.5	22.5	24	21.5	21	17.5	12	2	165

Total Credits: 165

L: Lecture **T:** Tutorial **P:** Practical **C:** Credit **O:** Outside Class hours **Cat.:** Category

HSMC : Humanities and Social Sciences including Management
BSC : Basic Science Courses
ESC : Engineering Science Courses
PCC : Professional Core Courses
PEC : Professional Elective Courses
OEC : Open Elective Courses
EEC : Emerging Elective Courses
EC : Emerging Courses
PROJ : Project Work
EES : Employability Enhancement Skills
MC : Mandatory Course

Definition of Credit:

L – Lecture	1 Hr. Lecture (L) per week	1 credit
T – Tutorial	1 Hr. Tutorial (T) per week	1 credit
P - Practical/Practice (Project and Industry based Courses)	1 Hr. Practical (P) per week	0.5 credit