Annexure – G

S.A.ENGINEERING COLLEGE

(An Autonomous Institution, Affiliated to Anna University, Chennai)

Veeraraghavapuram, Thiruverkadu post, Chennai-600077

Curriculum and Syllabi

Bachelor of Engineering
Mechanical Engineering

Regulation - 2020

Choice Based Credit System (CBCS)

The UG Syllabus of the Department of Mechanical Engineering, S.A. Engineering College (Autonomous), Chennai for 2020-2021 admission onwards, has been ratified by the Board of Studies of Mechanical Engineering which met on 29.02.2020 at S.A. Engineering College, Chennai.

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S.A. ENGINEERING COLLEGE

(An Autonomous Institution)

B.E. MECHANICAL ENGINEERING

CURRICULUM

(Batch-2020)

SEMESTER I

S.N O	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	C
THEORY							
1.	HS1101	Technical English	HS	3	0	0	3
2.	MA1101	Calculus and its Applications	BS	3	1	0	4
3.	PH1101	Applied Physics	BS	3	0	0	3
4.	CH1101	Engineering Chemistry	BS	3	0	0	3
5.	CS1101	Problem solving &Python Programming	ES	3	0	0	3
6.	ME1101	Engineering Graphics	ES	2	0	2	3
PRACTICALS							
1.	CS1102	Problem solving &Python Programming Laboratory	ES	0	0	4	2
2.	BS1101	Physics and Chemistry Laboratory	BS	0	0	4	2
1.	CI1101	Indian Constitution	MC	2	0	0	0
			TOTAL	**19**	**1**	**10**	**23**

SEMESTER II

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	C
THEORY							
1.	HS1201	English for Communication	HS	3	0	0	3
2.	MA1201	Complex Variables and Transforms	BS	3	1	0	4
3.	PH1201	Materials Science	BS	3	0	0	3
4.	EE1201	Basics of Electrical & Electronics Engineering	ES	3	0	0	3
5.	CE1201	Engineering Mechanics	ES	3	1	0	3
PRACTICALS							
1.	GE1201	Engineering Practices Laboratory	ES	0	0	4	2

2.	EE1204	Basic Electrical and Electronics Laboratory	ES	0	0	4	2
1.	CY1201	Environmental Science and Engineering	MC	2	0	0	0
			TOTAL	**17**	**2**	**8**	**20**

SEMESTER III

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	C
THEORY							
1.	MA1302	Transforms and Partial Differential Equations	BS	4	0	0	4
2.	ME1301	Engineering Thermodynamics	PC	3	0	0	3
3.	ME1302	Fluid Mechanics and Machinery	ES	3	0	0	3
4.	EE1308	Electrical Drives and Controls	ES	3	0	0	3
5.	ME1303	Production Technology	PC	3	0	0	3
6.	ME1304	Engineering Metallurgy	PC	3	0	0	3
PRACTICALS							
1.	EE1309	Electrical Engineering Laboratory	ES	0	0	4	2
2.	ME1305	Production Technology Laboratory	PC	0	0	4	2
			TOTAL	**19**	**0**	**8**	**23**

SEMESTER IV

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	C
THEORY							
1.	MA1404	Statistics and Numerical Methods	BS	4	0	0	4
2.	ME1401	Manufacturing Processes	PC	3	0	0	3
3.	ME1402	Strength of Materials	ES	3	0	0	3
4.	ME1403	Thermal Engineering	PC	3	0	0	3
5.	ME1404	Mechanics of Machines-I	PC	3	0	0	3
6.	HV1401	Universal Human Values	HS	2	1	0	3

PRACTICALS							
1.	ME1405	Strength of Materials and Fluid Mechanics Laboratory	ES	0	0	4	2
2.	ME1406	CAD & CNC Laboratory	PC	0	0	4	2
			TOTAL	**18**	**1**	**08**	**23**

SEMESTER V

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	C
THEORY							
1.	ME1501	Mechanics of Machines – II	PC	3	0	0	3
2.	ME1502	Metrology & Computer Aided Inspection	PC	3	0	0	3
3.	ME1503	Design of Machine Elements	PC	3	0	0	3
4.	ME1504	Heat and Mass Transfer	PC	3	0	0	3
5.	EE1408	Microprocessor and Microcontroller	ES	3	0	0	3
6.		Open Elective-I	OE	3	0	0	3
PRACTICALS							
1.	ME1505	Metrology & Inspection Laboratory	PC	0	0	4	2
2.	ME1506	Heat Transfer Laboratory	PC	0	0	4	2
			TOTAL	**18**	**0**	**8**	**22**

SEMESTER VI

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	C
THEORY							
1.	ME1601	Design of Mechanical Transmission Systems	PC	3	0	0	3
2.	ME1602	Finite Element Analysis	PC	3	0	0	3
3	ME1603	Mechatronics	PC	3	0	0	3
4.	ME1604	Computer Aided Design and Manufacturing	PC	3	0	0	3
5.		Professional Elective-I	PE	3	0	0	3
PRACTICALS							
1.	ME1613	I.C Engines Laboratory	PC	0	0	4	2

2.	ME1614	Innovative Project	EEC	0	0	4	2
3.	HS1601	Communication Skills Laboratory	EEC	0	0	2	1
		Internship	EEC	0	0	0	1
			TOTAL	**15**	**0**	**10**	**21**

SEMESTER VII

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	C
THEORY							
1.	ME1701	Industrial & Safety Engineering	PC	3	0	0	3
2.	ME1702	Power Plant Engineering	PC	3	0	0	3
3.	ME1703	Hydraulics & Pneumatics	PC	3	0	0	3
4.		Professional Elective-II	PE	3	0	0	3
5.		Professional Elective-III	PE	3	0	0	3
PRACTICALS							
1.	ME1720	Computer Aided Analysis Laboratory	PC	0	0	4	2
2.	ME1721	Mechatronics and Automation Laboratory	PC	0	0	4	2
3.	ME1722	Comprehension	EEC	0	0	2	0
			TOTAL	**15**	**0**	**10**	**19**

SEMESTER VIII

S.NO	SUB CODE	COURSE TITLE	CATEGORY	L	T	P	C
THEORY							
1.	ME1801	Engineering Economics and Cost Analysis	PC	3	0	0	3
2.		Professional Elective-IV	PE	3	0	0	3
3.		Professional Elective-V	PE	3	0	0	3
PRACTICALS							
1.	ME1812	Project Work	EEC	0	0	12	6
			TOTAL	**9**	**0**	**12**	**15**

TOAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE=166

OPEN ELECTIVES

S.No	SUB CODE	COURSE TITLE	L	T	P	C
1.	OME501	Internal Combustion Engines	3	0	0	3
2.	OME502	Introduction to Nano Technology	3	0	0	3
3.	OME503	Product Design and Development	3	0	0	3
4.	OME504	Lean Six Sigma	3	0	0	3
5.	OME505	Robotics	3	0	0	3

PROFESSIONAL ELECTIVES

S.No	SUB CODE	COURSE TITLE	L	T	P	C
Elective-I						
1.	ME1605	Design of Jigs and Fixtures and Press Tools	3	0	0	3
2.	ME1606	Design for Manufacture and Assembly	3	0	0	3
3.	ME1607	Material Characterization	3	0	0	3
4.	ME1608	Renewable Energy sources	3	0	0	3
5.	ME1609	Gas Dynamics & Jet Propulsion	3	0	0	3
6.	ME1610	Operations Research	3	0	0	3
7.	ME1611	Total Quality Management	3	0	0	3
8.	ME1612	Entrepreneurship and Development of Industries	3	0	0	3
Elective-II						
1.	ME1704	Vibration and Noise Engineering	3	0	0	3
2.	ME1705	Concurrent and Reverse Engineering	3	0	0	3
3.	ME1706	Micro Machining and Nano composites	3	0	0	3
4.	ME1707	Computational Fluid Dynamics	3	0	0	3
5.	ME1708	Refrigeration and Air Conditioning	3	0	0	3
6.	ME1709	Cryogenics Engineering	3	0	0	3
7.	ME1710	Product Life Cycle Management	3	0	0	3
Elective-III						
1.	ME1711	Tribology in Design	3	0	0	3
2.	ME1712	Advanced Finite Element Analysis	3	0	0	3
3.	ME1713	Optimization Techniques for Engineering Systems	3	0	0	3
4.	ME1714	Additive Manufacturing	3	0	0	3

5.	ME1715	Heat Transfer in Nano fluids	3	0	0	3
6.	ME1716	Manufacturing Systems	3	0	0	3
7.	ME1717	Logistics and Supply Chain Management	3	0	0	3
8.	ME1718	Industrial Robotics	3	0	0	3
9.	ME1719	Statistical Quality Control	3	0	0	3
Elective-IV						
1.	ME1802	Advanced Welding and Joining Technologies	3	0	0	3
2.	ME1803	Failure Analysis and Design	3	0	0	3
3.	ME1804	Nano Science & Materials	3	0	0	3
4.	ME1805	Design of Experiments	3	0	0	3
5.	ME1806	Design of Heat Transfer Equipments	3	0	0	3
Elective-V						
1.	ME1807	Green Manufacturing	3	0	0	3
2.	ME1808	Plant Layout and Material Handling	3	0	0	3
3.	ME1809	Inventory Management	3	0	0	3
4.	ME1810	Energy Auditing	3	0	0	3
5.	ME1811	Bio Materials	3	0	0	3