

B.E. Mechanical Engineering- Curriculum & Syllabus

REGULATIONS - 2020 CHOICE BASED CREDIT SYSTEM B.E. MECHANICAL ENGINEERING

I TO VIII SEMESTERS CURRICULUM AND SYLLABUS

SEMESTER I								
S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
THEORY								
1	UHS1151	Technical English - I	HS	3	3	0	0	3
2	UMA1151	Mathematics - I	BS	4	3	1	0	4
3	UPH1151	Engineering Physics - I	BS	3	3	0	0	3
4	UCY1151	Engineering Chemistry	BS	3	3	0	0	3
5	UGE1151	Python Programming and Problem Solving	ES	3	3	0	0	3
THEORY CUM PRACTICAL								
6	UBE1161	Basic Civil and Mechanical Engineering (Theory + Lab)	ES	5	3	0	2	4
PRACTICALS								
7	UBS1161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
8	UGE1161	Python Programming and Problem Solving Laboratory	ES	4	0	0	4	2
TOTAL				29	18	1	10	24
SEMESTER II								
S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
THEORY								
1	UHS1251	Technical English - II	HS	3	3	0	0	3
2	UMA1251	Mathematics - II	BS	4	3	1	0	4
3	UPH1251	Engineering Physics - II	BS	3	3	0	0	3
4	UGE1251	Environmental Science and Engineering	HS	3	3	0	0	3
5	UGE1252	C Programming	ES	3	3	0	0	3
6	UGE1253	Engineering Graphics	ES	5	1	0	4	3
7	UHS1252	Professional skills - I	EEC	2	0	0	2	1
THEORY CUM PRACTICAL								
8	UBE1261	Basic Electrical and Electronics Engineering (Theory + Lab)	ES	4	2	0	2	3
PRACTICALS								
9	UGE1261	C Programming Laboratory	ES	4	0	0	4	2
TOTAL				31	18	1	12	25

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SEMESTER III								
S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
THEORY								
1	UMA1352	Transforms and Partial Differential Equations	BS	4	3	1	0	4
2	UME1301	Engineering Thermodynamics	PC	4	3	1	0	4
3	UEE1351	Electrical Drives and Controls	ES	3	3	0	0	3
4	UME1302	Fluid Mechanics and Machineries	ES	4	3	1	0	4
5	UME1303	Engineering Mechanics	ES	4	3	1	0	4
6	UHS1351	Professional Skills – II	EEC	2	0	0	2	1
PRACTICALS								
7	UEE1361	Electrical Drives and Controls Laboratory	ES	4	0	0	4	2
8	UME1311	Fluid Mechanics and Machineries Laboratory	ES	4	0	0	4	2
9	UME1312	Machine Drawing Laboratory	PC	4	0	0	4	2
TOTAL				33	15	4	14	26
SEMESTER IV								
S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
THEORY								
1	UMA1452	Statistics, Numerical Methods and Optimization Techniques	BS	4	3	1	0	4
2	UME1401	Production Technology – I	PC	3	3	0	0	3
3	UME1402	Engineering Metallurgy	PC	3	3	0	0	3
4	UME1403	Kinematics of Machinery	PC	4	3	1	0	4
5	UME1404	Strength of Materials	ES	4	3	1	0	4
6		Open Elective – I	OE	3	3	0	0	3
7	UHS1451	Professional Skills – III	EEC	2	0	0	2	1
PRACTICALS								
8	UME1411	Production Technology Laboratory - I	PC	4	0	0	4	2
9	UME1412	Strength of Materials Laboratory	ES	4	0	0	4	2
TOTAL				31	18	3	10	26

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SEMESTER V								
S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
THEORY								
1	UME1501	Thermal Engineering	PC	4	3	1	0	4
2	UME1502	Dynamics of Machinery	PC	3	3	0	0	3
3	UME1503	Design of Machine elements	PC	4	3	1	0	4
4	UME1504	Production Technology – II	PC	3	3	0	0	3
5	UME1505	Hydraulics and Pneumatics	PC	3	3	0	0	3
6	UHS1551	Professional Skills – IV	EEC	2	0	0	2	1
PRACTICALS								
7	UME1511	Thermal Engineering Laboratory	PC	4	0	0	4	2
8	UME1512	Dynamics of Machinery Laboratory	PC	4	0	0	4	2
9	UME1513	Production Technology Laboratory - II	PC	4	0	0	4	2
10	UHS1361	Interpersonal Skills Laboratory	HS	2	0	0	2	1
TOTAL				33	15	2	16	25
SEMESTER VI								
S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
THEORY								
1	UME1601	Design of Transmission systems	PC	3	3	0	0	3
2	UME1602	Finite Element Analysis	PC	4	3	1	0	4
3	UME1603	Heat and Mass Transfer	PC	4	3	1	0	4
4		Professional Elective – I	PE	3	3	0	0	3
5		Professional Elective – II	PE	3	3	0	0	3
PRACTICALS								
6	UME1611	Simulation and Analysis Laboratory	PC	4	0	0	4	2
7	UME1612	Design and Fabrication Laboratory	PC	4	0	0	4	2
8	UME1613	Heat and Mass Transfer Laboratory	PC	4	0	0	4	2
9	UHS1561	Professional Communication Laboratory	HS	4	0	0	4	2
TOTAL				33	15	2	16	25

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SEMESTER VII								
S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
THEORY								
1	UME1701	Mechatronics	PC	3	3	0	0	3
2	UME1702	Industrial Engineering	PC	3	3	0	0	3
3	UME1703	Metrology and Measurements	PC	3	3	0	0	3
4		Open Elective – II	OE	3	3	0	0	3
5		Professional Elective – III	PE	3	3	0	0	3
THEORY CUM PRACTICAL								
6	UME1711	Computer Aided Design and Manufacturing	PC	5	3	0	2	4
PRACTICALS								
7	UME1712	Mechatronics Laboratory	PC	4	0	0	4	2
8	UME1713	Metrology and Measurements Laboratory	PC	4	0	0	4	2
TOTAL				28	18	0	10	23
SEMESTER VIII								
S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
THEORY								
1		Professional Elective – IV	PE	3	3	0	0	3
2		Professional Elective – V	PE	3	3	0	0	3
PRACTICALS								
3	UME1811	Project work	EEC	12	0	0	12	6
TOTAL				18	6	0	12	12

TOTAL NO OF CREDITS: 186

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PROFESSIONAL ELECTIVE – I (SEMESTER VI)

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
1	UME1001	Automobile Engineering	PE	3	3	0	0	3
2	UME1002	Design of Jigs, Fixtures and Press Tools	PE	3	3	0	0	3
3	UME1003	Robotics	PE	3	3	0	0	3
4	UME1004	Industrial automation	PE	3	3	0	0	3
5	UME1005	Welding Technology	PE	3	3	0	0	3
6	UEE1703	Renewable Energy Systems	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – II (SEMESTER VI)

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
1	UME1006	Gas Dynamics and Jet Propulsion	PE	3	3	0	0	3
2	UME1007	Green and Lean Manufacturing	PE	3	3	0	0	3
3	UME1008	Operation Research for Mechanical Engineering	PE	3	3	0	0	3
4	UME1009	Rapid Manufacturing	PE	3	3	0	0	3
5	UMG1053	Principles of Management	PE	3	3	0	0	3
6	UMG1054	Professional Ethics in Engineering	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – III (SEMESTER VII)

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
1	UME1010	Augmented Reality, Virtual Reality and Internet of Things	PE	3	3	0	0	3
2	UME1011	Composite Materials and Mechanics	PE	3	3	0	0	3
3	UME1012	Power Plant Engineering	PE	3	3	0	0	3
4	UME1013	Theory of Metal Cutting	PE	3	3	0	0	3
5	UME1014	Turbo Machines	PE	3	3	0	0	3
6	UMG1052	Total Quality Management	PE	3	3	0	0	3

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PROFESSIONAL ELECTIVE – IV (SEMESTER VIII)

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
1	UME1015	Advanced IC Engines	PE	3	3	0	0	3
2	UME1016	Non Destructive Testing of Materials	PE	3	3	0	0	3
3	UME1017	Quality Control and Reliability Engineering	PE	3	3	0	0	3
4	UME1018	Vibration and Noise Control	PE	3	3	0	0	3
5	UMG1055	Entrepreneurship Development	PE	3	3	0	0	3
6	UEE1013	Micro Electro Mechanical Systems	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – V (SEMESTER VIII)

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
1	UME1019	Computational Fluid Dynamics	PE	3	3	0	0	3
2	UME1020	Design of Heat Exchangers	PE	3	3	0	0	3
3	UME1021	Industrial safety Engineering	PE	3	3	0	0	3
4	UME1022	Industry 4.0	PE	3	3	0	0	3
5	UME1023	Maintenance Engineering	PE	3	3	0	0	3
6	UME1024	Refrigeration and Air conditioning	PE	3	3	0	0	3

OPEN ELECTIVE – I (SEMESTER IV)

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
1	OCS1451	C++ and Data Structure	OE	3	3	0	0	3
2	OCS1452	Java Programming	OE	3	3	0	0	3
3	OCS1453	.Net	OE	3	3	0	0	3
4	OCS1454	R Programming	OE	3	3	0	0	3

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OPEN ELECTIVE – II (SEMESTER VII)

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	TOTAL CONTACT PERIODS	PERIODS PER WEEK			CREDITS
					L	T	P	
1	OCS1755	Data Mining in Mechanical Engineering	OE	3	3	0	0	3
2	OCS1756	Database Management Systems	OE	3	3	0	0	3
3	OGE1752	Geographic Information System	OE	3	3	0	0	3
4	OEC1753	Image Processing in Mechanical Engineering	OE	3	3	0	0	3

SUBJECT CATEGORIZATION

SEMESTER	HS	BS	ES	PC	PE	OE	EEC	Total Credits
I	3	13	8	-	-	-	-	24
II	6	7	11	-	-	-	1	25
III	-	4	15	6	-	-	1	26
IV	-	4	6	12	-	3	1	26
V	1	-	-	23	-	-	1	25
VI	2	-	-	15	6	-	2	25
VII	-	-	-	17	3	3	-	23
VIII	-	-	-	-	6	-	6	12
Total Credits	12	28	40	73	15	6	12	186
% Distribution	6.45	15.05	21.05	39.25	8.06	3.23	6.45	100

HOD

Member Secretary

Academic Council Chairman