

DAYANANDA SAGAR UNIVERSITY

ShavigeMalleshwara Hills, Kumaraswamy Layout,

Bengaluru - 560078, Karnataka.

SCHOOL OF ENGINEERING



SCHEME & SYLLABUS FOR BACHELOR OF TECHNOLOGY (B.Tech.) – 2020

MECHANICAL ENGINEERING

(3rd to 6th Sem)

(WITH EFFECT FROM 2020-21)

SCHEME - B.TECH - 2020-21 ONWARDS

III SEM - MECHANICAL ENGINEERING

SL	PROGRAM CODE	COURSE CODE	COURSE TITLE	CR / AU	SCHEME OF TEACHING					PREREQUISITE	
					L	T	P	S/ P	C	SEM	COURSE CODE
1	105	20ME2301	COMPLEX VARIABLES AND NUMERICAL METHODS	CR	03	01	--	--	04	*	***
2	105	20ME2302	ENGINEERING MATERIALS	CR	03	--	02	--	04	*	***
3	105	20ME2303	ENGINEERING MECHANICS	CR	03	--	--	--	03	*	***
4	105	20ME2304	THERMODYNAMICS	CR	03	--	--	--	03	*	***
5	105	20ME2305	COMPUTER AIDED MACHINE DRAWING	CR	02	--	04	---	04	*	***
6	105	20ME2306	MECHANICAL MEASUREMENTS	CR	03	--	02	--	04	*	***
7	105	20ME2307	SPECIAL TOPICS - I	CR	01	--	02	--	02	*	***
					18	01	10	-	24		

CR – Credit, AU – Audit, L – Lecture, T – Tutorial, P – Practical, S/P – Seminar/Project, C – No. of Credits

SCHEME - B.TECH - 2020-21 ONWARDS

IV SEM - MECHANICAL ENGINEERING

SL	PROGRAM CODE	COURSE CODE	COURSE TITLE	CR / AU	SCHEME OF TEACHING					PREREQUISITE	
					L	T	P	S/P	C	SEM	COURSE CODE
1	105	20ME2401	APPLIED THERMODYNAMICS	CR	02	01	02	--	04	*	***
2	105	20ME2402	MECHANICS OF MATERIALS	CR	02	01	--	--	03	*	***
3	105	20ME2403	FLUID MECHANICS AND MACHINES	CR	03	--	02	--	04	*	***
4	105	20ME2404	MANUFACTURING PROCESS	CR	03	--	02	--	04	*	***
5	105	20ENC001	ECONOMICS FOR ENGINEERS	CR	02	--	--	--	02	*	***
6	105	20ME2405	SPECIAL TOPICS - II	CR	01	--	02	--	02	*	***
					13	02	08	--	19		

CR – Credit, AU – Audit, L – Lecture, T – Tutorial, P – Practical, S/P – Seminar/Project, C – No. of Credits

SCHEME - B.TECH - 2020-21 ONWARDS

V SEM - MECHANICAL ENGINEERING

SL	PROGRAM CODE	COURSE CODE	COURSE TITLE	CR / AU	SCHEME OF TEACHING					PREREQUISITE	
					L	T	P	S/P	C	SEM	COURSE CODE
1	105	20ME3501	HEAT TRANSFER	CR	03	--	02	--	04	III	20ME2304
2	105	20ME3502	KINEMATICS & THEORY OF MACHINES	CR	03	01	--	--	04	*	***
3	105	20ME3503	DESIGN OF MACHIN ELEMENTS - I	CR	02	01	02	--	04	IV	20ME2302
4	105	20ME3504	MANUFACTURING TECHNOLOGY	CR	03	--	02	--	04	*	***
5	105	20ME35XX	PROFESSIONAL ELECTIVE - I	CR	03	--	--	--	03	*	***
6	105	20OEXXXX	OPEN ELECTIVE - I	CR	03	--	--	--	03	*	***
7	105	20ME3505	SPECIAL TOPICS - III	CR	02	--	--	--	02	*	***
					19	02	06	--	24		

CR – Credit, AU – Audit, L – Lecture, T – Tutorial, P – Practical, S/P – Seminar/Project, C – No. of Credits,

PROGRAM ELECTIVE - I			
SL.NO	COURSE CODE	COURSE TITLE	Group
1	20ME3506	INTRODUCTION TO ROBOTICS AND AUTOMATION	ROBOTICS & AUTOMATION
2	20ME3507	FUNDAMENTALS TO MACHINE LEARNING & ARTIFICIAL INTELLIGENCE	
3	20ME3508	ADDITIVE MANUFACTURING TECHNOLOGY	ADDITIVE MANUFACTURING
4	20ME3509	AUTOMATED MANUFACTURING SYSTEMS	
5	20ME3510	INTRODUCTION TO HYBRID & ELECTRIC VEHICLES	HYBRID & ELECTRIC VEHICLES
6	20ME3511	AUTOTRONICS	
7	20ME3512	REFRIGERATION AND AIR CONDITIONING	GENERAL
8	20ME3513	TOOL DESIGN	

SCHEME - B.TECH - 2020-21 ONWARDS

VI

SEM - MECHANICAL ENGINEERING

SL	PROGRAM CODE	COURSE CODE	COURSE TITLE	CR / AU	SCHEME OF TEACHING					PREREQUISITE	
					L	T	P	S/P	C	SEM	COURSE CODE
1	105	20ME3601	DESIGN OF MACHINE ELEMENTS - II	CR	02	01	02	--	04	IV	20ME2402
2	105	20ME3602	FINITE ELEMENT METHODS	CR	02	01	02	--	04	*	***
3	105	20ME3603	MECHANICAL VIBRATIONS	CR	03	--	02	--	04	*	***
4	105	20ME36XX	PROFESSIONAL ELECTIVE - II	CR	03	--	--	--	03	*	***
5	105	20ME36XX	PROFESSIONAL ELECTIVE - III	CR	03	--	--	--	03	*	***
6	105	20OEXXXX	OPEN ELECTIVE - II	CR	03	--	--	--	03	*	***
7	105	20ENC002	LAW FOR ENGINEERS	CR	02	--	-	--	02	*	***
					18	02	06	--	23		

CR - Credit, AU - Audit, L - Lecture, T - Tutorial, P - Practical, S/P - Seminar/Project, C - No. of Credits,

PROGRAM ELECTIVE - II			
SL.NO	COURSE CODE	COURSE TITLE	GROUP
1	20ME3604	DRIVES & CONTROL SYSTEMS	ROBOTICS & AUTOMATION
2	20ME3605	ELECTRICAL MACHINES AND POWER SYSTEMS	
3	20ME3606	MATERIALS FOR AM	ADDITIVE MANUFACTURING
4	20ME3607	PROCESSING OF PLASTICS & COMPOSITES	
5	20ME3608	AUTOMOTIVE CHASSIS & TRANSMISSION SYSTEMS	HYBRID & ELECTRIC VEHICLES
6	20ME3609	MODEL-BASED EMBEDDED CONTROL SYSTEM DESIGN	
7	20ME3610	RENEWABLE ENERGY SOURCES	GENERAL
8	20ME3611	PRODUCT DESIGN AND MANUFACTURING	

PROGRAM ELECTIVE - III			
SL.NO	COURSE CODE	COURSE TITLE	GROUP
1	20ME36112	ROBOT KINEMATICS AND DYNAMICS	ROBOTICS & AUTOMATION
2	20ME36113	INDUSTRIAL AUTOMATION-I	
3	20ME36114	COMPUTATIONAL TOOLS FOR AM	ADDITIVE MANUFACTURING
4	20ME36115	MICRO AND NANO FABRICATION TECHNOLOGIES	
5	20ME36116	HEV / EV SYSTEM DESIGN ARCHITECTURE	HYBRID & ELECTRIC VEHICLES
6	20ME36117	MATERIALS AND MANUFACTURING PROCESSES FOR AUTOMOTIVE SYSTEMS	
7	20ME36118	INTERNAL COMBUSTION ENGINES	GENERAL
8	20ME36119	MEMS (MICRO ELECTRO MECHANICAL SYSTEMS)	

SCHEME - B.TECH - 2020-21 ONWARDS

VII

SEM - MECHANICAL ENGINEERING

SL	PROGRAM CODE	COURSE CODE	COURSE TITLE	CR / AU	SCHEME OF TEACHING					PREREQUISITE	
					L	T	P	S/P	C	SEM	COURSE CODE
1	105	20ME4701	CONTROL SYSTEMS ENGINEERING	CR	03	--	02	--	04	*	***
2	105	20ME47XX	PROFESSIONAL ELECTIVE - IV	CR	03	--	--	--	03	*	***
3	105	20ME47XX	PROFESSIONAL ELECTIVE - V	CR	03	--	--	--	03	*	***
4	105	20OEXXXX	OPEN ELECTIVE - III	CR	03	--	--	--	03	*	***
5	105	20ME4702	MAJOR PROJECT PHASE - I	CR	--	--	--	04	02	*	***
					12	-	02	04	15		

CR - Credit, AU - Audit, L - Lecture, T - Tutorial, P - Practical, S/P - Seminar/Project, C - No. of Credits,

PROGRAM ELECTIVE - IV			
SL.NO	COURSE CODE	COURSE TITLE	GROUP
1	20ME4703	INDUSTRIAL AUTOMATION-II	ROBOTICS & AUTOMATION
2	20ME4704	AUTOMATION SYSTEM DESIGN	
3	20ME4705	INDUSTRY 4.0 AND IOT	ADDITIVE MANUFACTURING
4	20ME4706	CAD/CAM FOR AM	
5	20ME4707	VEHICLE DYNAMICS ADVANCED POWERTRAIN	HYBRID & ELECTRIC VEHICLES
6	20ME4708	ADVANCED ENERGY STORAGE	
7	20ME4709	COMPUTATIONAL FLUID DYNAMICS	GENERAL
8	20ME4710	OPERATIONS MANAGEMENT	

PROGRAM ELECTIVE - V			
SL.NO	COURSE CODE	COURSE TITLE	GROUP
1	20ME4711	ROBOT VISION SYSTEMS	ROBOTICS & AUTOMATION
2	20ME4712	ROBOT PROGRAMMING	
3	20ME4713	INTELLIGENT MANUFACTURING SYSTEMS	ADDITIVE MANUFACTURING
4	20ME4714	POWDER METALLURGY MANUFACTURING	
5	20ME4715	POWERTRAIN INTEGRATION IN HEV	HYBRID & ELECTRIC VEHICLES
6	20ME4716	ENERGY MANAGEMENT AND CONTROL STRATEGIES	
7	20ME4717	AUTOMOBILE ENGINEERING	GENERAL
8	20ME4718	TRIBOLOGY AND BEARING DESIGN	

SCHEME - B.TECH - 2020-21 ONWARDS

VIII

SEM - MECHANICAL ENGINEERING

SL	PROGRAM CODE	COURSE CODE	COURSE TITLE	CR / AU	SCHEME OF TEACHING					PREREQUISITE	
					L	T	P	S/P	C	SEM	COURSE CODE
1	105	20ME48XX	PROFESSIONAL ELECTIVE - VI	CR	03	--	--	--	03	*	***
2	105	20ME4801	MAJOR PROJECT PHASE- II	CR	--	--	--	20	10	*	***
					03	-	-	10	13		

CR – Credit, AU – Audit, L – Lecture, T – Tutorial, P – Practical, S/P – Seminar/Project, C – No. of Credits,

PROGRAM ELECTIVE - VI			
SL.NO	COURSE CODE	COURSE TITLE	GROUP
1	20ME4802	ADVANCED AI FOR ROBOTICS	ROBOTICS & AUTOMATION
2	20ME4803	ROBOT SIMULATION & OFFLINE PROGRAMMING	
3	20ME4804	ADDITIVE MANUFACTURING FOR MEDICAL APPLICATIONS	ADDITIVE MANUFACTURING
4	20ME4805	SUSTAINABLE MANUFACTURING	
5	20ME4806	ADVANCED PROPULSION SYSTEMS FOR HYBRID ELECTRIC DRIVE VEHICLES	HYBRID & ELECTRIC VEHICLES
6	20ME4807	AUTOMOTIVE ELECTRONICS FOR EV'S	
7	20ME4808	FEM- STRUCTURAL MECHANICS APPLICATIONS	GENERAL
8	20ME4809	ORGANIZATIONAL BEHAVIOUR AND PROFESSIONAL COMMUNICATION	