DAYANANDA SAGAR UNIVERSITY

Shavige Malleshwara Hills, Kumaraswamy Layout,

Bengaluru - 560111, Karnataka.

SCHOOL OF ENGINEERING

SCHEME & SYLLABUS
FOR
MASTER OF TECHNOLOGY (M.Tech) – 2022

MECHANICAL ENGINEERING

SPECIALIZATION: DESIGN ENGINEERING

(With Effect from 2022-23)

SEMESTER I

SL	PROGRAM CODE	COURSE CODE	COURSE TITLE	$\frac{CR}{AU}$	SCHEME OF TEACHING				
					L	T	P	S/P	C
1	204	22MDE5101	EXPERIMENTAL STRESS ANALYSIS	CR	03	01	-	-	04
2	204	22MDE5102	FINITE ELEMENT METHOD	CR	03	--	02	-	04
3	204	22MDE5103	SOLID MECHANICS	CR	03	--	02	-	04
4	204	22MDE5XXX	DEPARTMENT ELECTIVE-I	CR	03	-	-	-	03
5	204	22MDE5XXX	DEPARTMENT ELECTIVE-II	CR	03	-	-	-	03
6	204	22MDE5104	SPECIAL TOPICS	CR	-	02	-	-	02
GRAND TOTAL = 600					**15**	**03**	**04**	**-**	**20**

SEMESTER II

SL	PROGRAM CODE	COURSE CODE	COURSE TITLE	$\frac{CR}{AU}$	SCHEME OF TEACHING				
					L	T	P	S/P	C
1	204	22MDE5201	ADVANCED MATERIALS AND MANUFACTURING TECHNOLOGY	CR	03	--	02	-	04
2	204	22MDE5202	MECHANICS OF COMPOSITE MATERIALS	CR	03	01	-	-	04
3	204	22MDE5203	ADVANCED MACHINE DESIGN	CR	03	--	02	-	04
4	204	22MDE5XXX	DEPARTMENT ELECTIVE-III	CR	03	-	-	-	03
5	204	22MDE5XXX	DEPARTMENT ELECTIVE-IV	CR	03	-	-	-	03
6	204	22MDE5204	MOOC Course	CR	-	02	-	-	02
GRAND TOTAL = 600					**15**	**03**	**04**	**-**	**20**

CR – CREDIT, AU – AUDIT, L – LECTURE, T – TUTORIAL, P – PRACTICAL, S/P – SEMINAR/PROJECT, C – NO. OF CREDITS,
CIA – CONTINUOUS INTERNAL ASSESSMENT

SEMESTER III

SL	PROGRAM CODE	COURSE CODE	COURSE TITLE	$\frac{CR}{AU}$	SCHEME OF TEACHING				
					L	T	P	S/P	C
1	204	22MDE5XXX	DEPARTMENT ELECTIVE – V	CR	03	-	-	-	03
2	204	22MDE5XXX	OPEN ELECTIVE	CR	03	-	-	-	03
3	204	22MDE5301	DISSERTATION PHASE I	CR	-	-	12	-	06
GRAND TOTAL = 300					**06**	**-**	**12**	**-**	**12**

SEMESTER IV

SL	PROGRAM CODE	COURSE CODE	COURSE TITLE	$\frac{CR}{AU}$	SCHEME OF TEACHING				
					L	T	P	S/P	C
1	204	22MDE5XXX	DEPARTMENT ELECTIVE – VI	CR	03	-	-	-	03
2	204	22MDE5401	DISSERTATION PHASE II	CR	-	-	18	-	09
GRAND TOTAL = 400					**03**	**-**	**18**	**-**	**12**

CR – CREDIT, AU – AUDIT, L – LECTURE, T – TUTORIAL, P – PRACTICAL, S/P – SEMINAR/PROJECT, C – NO. OF CREDITS,
CIA – CONTINUOUS INTERNAL ASSESSMENT

DEPARTMENTAL ELECTIVES – I

SL	COURSE CODES	COURSE TITLE
1	22MDE5031	APPLIED MATHEMATICS
2	22MDE5032	DYNAMICS
3	22MDE5033	PRODUCT DEVELOPMENT
4	22MDE5034	DATA VISUALIZATION
5	22MDE5035	DIGITAL CONTROL SYSTEMS

DEPARTMENTAL ELECTIVES – II

SL	COURSE CODES	COURSE TITLE
1	22MDE5036	ROBOTICS
2	22MDE5037	SENSORS AND SIGNAL CONDITIONING
3	22MDE5038	DESIGN OF HYDRAULIC AND PNEUMATIC SYSTEMS
4	22MDE5039	LEAN MANUFACTURING
5	22MDE5040	SMART MATERIALS AND STRUCTURES

DEPARTMENTAL ELECTIVES –III

SL	COURSE CODES	COURSE TITLE
1	22MDE5041	MECHATRONICS SYSTEM DESIGN
2	22MDE5042	MODELLING AND SIMULATION
3	22MDE5043	MECHANISM DESIGN
4	22MDE5044	INDUSTRIAL DESIGN AND ERGONOMICS
5	22MDE5045	ADDITIVE MANUFACTURING

DEPARTMENTAL ELECTIVES –IV

SL	COURSE CODES	COURSE TITLE
1	22MDE5046	RESEARCH METHODOLOGY
2	22MDE5047	EMBEDDED SYSTEMS
3	22MDE5048	FRACTURE MECHANICS
4	22MDE5049	MICRO ELECTRICAL MECHANICAL SYSTEMS (MEMS)
5	22MDE5050	TRIBOLOGY

DEPARTMENTAL ELECTIVES – V

SL	COURSE CODES	COURSE TITLE
1	22MDE5051	AUTOMOTIVE ELECTRONICS
2	22MDE5052	JIGS AND FIXTURES DESIGN
3	22MDE5053	OPTIMIZATION TECHNIQUES
4	22MDE5054	DESIGN OF EXPERIMENTS
5	22MDE5055	RELIABILITY AND FAILURE ANALYSIS

DEPARTMENTAL ELECTIVES – VI

1	22MDE5056	ROBUST DESIGN
2	22MDE5057	FINITE ELEMENT METHODS FOR STRUCTURAL MECHANICS APPLICATIONS
3	22MDE5058	DESIGN OF MATERIALS HANDLING SYSTEMS
4	22MDE5059	THEORY OF PLASTICITY
5	22MDE5060	NON LINEAR ANALYSIS

OPEN ELECTIVES

SL	COURSE CODE	COURSE TITLE	OFFERING DEPARTMENT
1	22MDE5061	DIGITAL MARKETING	COMPUTER SCIENCE & ENGINEERING
2	22MDE5062	PRODUCT LIFE CYCLE MANAGEMENT	MECHANICAL ENGINEERING
3	22MDE5063	PROJECT MANAGEMENT	ELECTRONICS & COMMUNICATION ENGINEERING