

**Board of Studies in Materials and Mechanical (MM)
Curriculum Structure for M.Tech Program**

**Savitribai Phule Pune University
(Formerly University of Pune)**



Department of Technology

Sr. No.	Subject Category	Subject Code	Subject Name	Credits
Semester (I)				
1	Major (Mandatory)	MTC1	Mathematics for Technology	4
2	Major (Mandatory)	MMC2	Advanced Stress Analysis	4
3	Major (Mandatory)	MMC3	Advanced Thermofluids-I	4
4	Major (Mandatory)	MMLP1	Lab Practice – 1	2
5	Major (Elective)	MME*	Elective-1	4
6	RM	PGRM	Research Methodology	4
TOTAL CREDITS				22
Semester (II)				
7	Major (Mandatory)	MMC4	Theory of Noise and Vibration Control	4
8	Major (Mandatory)	MMC5	Robotics	4
9	Major (Mandatory)	MMC6	Smart Materials	4
10	Major (Mandatory)	MMLP2	Lab Practice – 2	2
11	Major (Elective)	MME*	Elective-2	4
12	OJT/ FP	MM-1**	OJT/ FP/ RBP	4
TOTAL CREDITS				22
Semester (III)				
13	Major (Mandatory)	DS	Directed Study	4
14	Major (Mandatory)	SMDA	Statistical Methods and Data Analytics	4
15	Major (Mandatory)	IPR	Intellectual Property Rights	2
16	Major (Elective)	MM-2**	MOOC / LMS	4
17	RP	MMIntProj	Interim Project	8

TOTAL CREDITS				22
Semester (IV)				
18	Major (Mandatory)	MM-3**	LMS / MOOC	4
19	Major (Elective)	OE†	Open Elective	4
20	RP	MM-4**	Journal\Conference\Internship\MOOC	2
21	RP	MMFinProj	Final Project (Dissertation Submission)	12
TOTAL CREDITS				22
GRAND TOTAL CREDITS				88

* – Detailed codes are given in given in Table-A;

**– Detailed codes are given in given in Table-B

– First Year of Integrated M.Tech-PhD is same as M.Tech Program and remaining of it is as per UGC. ## – Audit Courses as per Table – C

† - Open Elective can be taken from any Discipline / Department / MOOC with the approval of Board Coordinator.

Table – A LIST OF ELECTIVES (MME*)AND DIRECTED STUDY SUBJECTS

Sr. No.	Subject Code	Subject Name
1	MME1	Engineering Fracture Mechanics
2	MME2	Computational Geometry
3	MME3	Advanced Machine Tool Design
4	MME4	Advanced Thermodynamics
5	MME5	Advanced Heat Transfer
6	MME6	Advanced Fluid Mechanics
7	MME7	Computational Fluid Dynamics
8	MME8	Refrigeration Technology
9	MME9	Industrial Automation
10	MME10	Advanced Air Conditioning and Refrigeration
11	MME11	Internal combustion Engines
12	MME12	Microcontrollers
13	MME13	Drives and Actuators

14	MME14	Tribology
15	MME15	Advanced Manufacturing Process
16	MME16	Advanced Materials
17	MME17	Advanced Thermofluids-II
18	MME18	Combustion
19	MME19	Instrumentation and Process Control
20	MME20	Semiconductor Nano structure for solar cell application
21	MME21	Fluid Power Engineering
22	MME22	Nanotechnology
23	MME23	Computer Aided Engineering(CAE)

Table -B LIST OF CODES FOR SUBJECT SPECIFIC, MOOCs AND OPEN ELECTIVE SUBJECTS

Sr. No.	Subject Code	Subject Name
MM-1**		
1	MMOJT	OJT
2	MMFP	FP
3	MMRBP	RBP
MM-2**		
3	MMOOC1	MOOC
4	MMLMS1	LMS
MM-3**		
5	MMOOC2	MOOC
6	MMLMS2	LMS
MM-4**		
7	MMJ	Journal
8	MMC	Conference
9	MMI	Internship
10	MMOOC3	MOOC

**Indicates Subject code are aligned from the codes of the respective Department

Table C- AUDIT COURSES (Minimum 12 audit Credits should earn in a Post Graduate Course)				
Sr. No.	Subject Code	Subject Name	Credits	Compulsory/ Optional
1	## CBCS - CS	Cyber Security	4	Compulsory
2	## CBCS – HR	Human Rights	2	Compulsory
3	## CBCS – IIC	Introduction to the Indian Constitution	2	Compulsory
4	## SDC01 – BC	Business Communication Skills	4	Optional
5	## SDC02 – FP	Personal Financial Planning	2	Optional
6	## SDC03 – PLC	Programmable Logic Controller	2	Optional
7	## SDC04 – WD	Web Designing	2	Optional

Audit Courses Credits are not counted towards the CGPA calculation; whereas these courses are compulsorily to be completed towards the award of the Degree.

Notes:

- 1) Electives can also be Open Electives in spirit of CBCS.
- 2) Maximum 25% Open Electives are allowed.
- 3) Candidates are expected to perform minimum eight (8) assignments for every Lab Practice, and submit report as a bona fide document to course instructor. The assignment may be in the form of modeling/ simulation/ programming/ experimental investigation/ fieldwork.
- 4) MOOC Courses should be Board Specific.
- 5) **MOOC-Open Online Course-** Student is required to complete online course through Coursera/NPTEL and other standard open Online Platforms. The course has to be pre-approved from the Department by the Course-Coordinator.
- 6) **On-Job-Training / Field Project / Internship / Research Based Project:** Students are encouraged to do OJT/FP/Internship/RBP which will enable them towards state-of-art technologies and best practices followed by Industries. Completion Letter for the same has to be submitted to the course coordinator. Post Internship Presentation and report is to be submitted.

Guidelines for On-Job-Training / Internship / Research Based Project completion:

Credit Assigned: 4 Credits

A. Duration of Internship:

- On-Job-Training / Internship / Research Based Project have a specified duration or number of hours that need to be completed for 4 Credits (typically 6 to 8 weeks)

- The OJT / internship /RBP can be completed during any available slots in Ist, IInd Semesters and the Semester breaks in between.

B. Performance Evaluation:

- OJT / Internship / RBP will be evaluated on their performance during the training. This evaluation will include:
 - a) Report submission as per Department Format (Latex file format.)
 - b) Presentation and open discussion session

C. Project or Task Completion:

- Certificate of completion form respective company / organization. (As per company policy on its letterhead.) Or (Generalize draft for certificate provided by the Department)

D. Attendance and Punctuality:

- Regular attendance and punctuality are important factors in completing an internship successfully.

E. Evaluation will also be required from the OJT/FP/RBP supervisor for 50 marks.

- 7) **Journal\Conference-** Students are expected to present their research findings in standard Research conferences and encouraged to publish in reputed Journals approved by Course Coordinator and Research Guide.
- 8) Students can do their Projects either in Industry or in academic Institution's\Research Lab. Students pursuing Projects in Industry cannot earn credits through Internship, they are encouraged to earn those credits through MOOCs\Journal\Conference.
- 9) **Exit Norms:** Student can exit the programme after one year of completion of earning 44 credits, and can opt for Post Graduate Diploma (PG Diploma) and exit the Degree Program as per NEP 2020.