

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI**



Scheme of Teaching and Examinations
M.Tech in Mechanical Engineering
(Specialization in Production Engineering)
Choice Based Credit System (CBCS) and Outcome Based Education (OBE)

Specialization in Production Engineering (MPE)											
II SEMESTER (Core Courses related to main Engineering Stream)											
Sl. No	Course Type	Course Code	Course Title	Teaching Hours per Week			Examination				Credits
				Theory	Practical/ Seminar	Tutorial/ SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
				L	P	T/SDA					
1	PCC	MMPE201	Rapid Prototyping Technologies	3	0	0	03	50	50	100	3
2	PCC	MMPE202	Advanced Metal Forming	3	0	0	03	50	50	100	3
3	IPCC	MMPE203	Industrial Design and Ergonomics	3	2	0	03	50	50	100	4
4	PEC	MMPE214x	Professional Elective 3	3	0	0	03	50	50	100	3
5	PEC	MMPE215x	Professional Elective 4	3	0	0	03	50	50	100	3
6	PCC	MMPE206	Finite Element Techniques	3	0	0	03	50	50	100	3
7	PCCL	MPEL207	Production Engineering. Lab	0	0	2	03	50	50	100	2
8	AEC/SEC	MMPE258x	Ability/Skill Enhancement Course (Offline)	00	02	--	02	50	50	100	1
				01	00	--	01				
TOTAL								400	400	800	22
<p>Note: BSC-Basic Science Courses, PCC: Professional core. IPCC-Integrated Professional Core Courses, PCC(PB): Professional Core Courses (Project Based), PCCL-Professional Core Course lab, NMC- None Credit Mandatory Course, L-Lecture, P-Practical, T/SDA-Tutorial / Skill Development Activities(Hours are for Interaction between faculty and students)</p> <p>M- Master program xx – ME for Mechanical Engineering Stream, CV for Civil Engineering Stream, EE – Electrical & Electronics Engineering Stream, EC- Electronics and Communication Engineering Stream, CS- Computer Science and Engineering BA- Business Administration AR- Architecture- etc.</p> <p>BSC: Basic Science Courses: Courses like Mathematics/ Science are the prerequisite courses that the concerned engineering stream board of Studies will decide. PCC: Professional Core Course: Courses related to the stream of engineering, which will have both CIE and SEE components, students have to qualify in the course for the award of the degree. Integrated Professional Core Course (IPCC): Refers to a Professional Theory Core Course Integrated with practicals of the same course. The IPCC's theory part shall be</p>											

evaluated by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper. **Project Based Learning Course (PCC(PB)):** Project Based Learning course is a professional core Course only Students have to complete a project out of learning from the course and SEE will be viva voce on project work. **PCCL: Professional Core Course Laboratory:** A Practical course who's CIE will be evaluated by the class teacher and SEE will be evaluated by the two examiners.

Skill development activities: Under Skill development activities in a concerning course, the students should

1. Interact with industry (small, medium, and large).
2. Involve in research/testing/projects to understand their problems and help creative and innovative methods to solve the problem.
3. Involve in case studies and field visits/ fieldwork.
4. Accustom to the use of standards/codes etc., to narrow the gap between academia and industry.
5. Handle advanced instruments to enhance technical talent.
6. Gain confidence in the modelling of systems and algorithms for transient and steady-state operations, thermal study, etc.
7. Work on different software/s (tools) to simulate, analyze and authenticate the output to interpret and conclude.

All activities should enhance student's abilities to employment and/or self-employment opportunities, management skills, Statistical analysis, fiscal expertise, etc. Students and the course instructor/s are to be involved either individually or in groups to interact together to enhance the learning and application skills of the study they have undertaken. The students with the help of the course teacher can take up relevant technical –activities that will enhance their skills. The prepared report shall be evaluated for CIE marks.

Ability Enhancement Courses (AEC): These courses are designed to help students enhance their skills in communication, language, and personality development. They also promote a deeper understanding of subjects like social sciences and ethics, culture and human behaviour, human rights, and the law.

Skill Enhancement Course (SEC): Skill Enhancement Course means a course designed to provide value-based or skill-based knowledge and should contain both theory and lab/hands-on/training/fieldwork. The main purpose of these courses is to provide students with life skills in the hands-on mode to increase their employability.

If AEC/SEC courses are ONLINE (MOOCs) courses suggested by the concerned board of studies. These courses will be made available on [www. online.vtu.ac.in](http://www.online.vtu.ac.in), however online courses are not considered for vertical progression, but qualifying in online courses is mandatory for the award of the degree.

Core Courses	
Course Code	Course Title
MMPE201	Rapid Prototyping Technologies
MMPE202	Advanced Metal Forming
MMPE203	Industrial Design and Ergonomics
MMPE214x	Professional Elective 1
MMPE215x	Professional Elective 2
MMPE206	Finite Element Techniques
MPEL207	Production Engg. Laboratory
MMPE258x	Ability/Skill Enhancement Course (Offline/Online)

Elective Courses

Professional Elective 3		Professional Elective 4	
Course Code under MMPE214x	Course title	Course Code under MMPE215x	Course title
MMPE214A	Agile Manufacturing	MMPE215A	Simulation Modeling and Production System
MMPE214B	CAE and CIM	MMPE215B	Design of Experiments
MMPE214C	Flexible Manufacturing System	MMPE215C	Industry 4.0
MMPE214D	Product Design and Manufacturing	MMPE215D	Non Destructive Testing

Ability/Skill Enhancement Courses (Offline/Online)

Course Code	Course title	L	P Offline/Online	T/SDA
MMPE258A	Nano Technology	00	02/01	00
MMPE258B	Smart Materials	00	02/01	00
MMPE258C	Precision Engineering	00	02/01	00

MMPE258D	Advanced Processing of Materials	00	02/01	00
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Activity Based Learning (Suggested Activities in Class)/ Practical Based learning