VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI

Scheme of Teaching and Examinations

M.Tech. in Mechanical Engineering

(Specialization in ……)

Choice Based Credit System (CBCS) and Outcome Based Education (OBE)

I 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	MME101	Waste to Energy	3	0	0	03	50	50	100	3
2	PCC	MME102	Mechatronics for Industrial Application	3	0	1	03	50	50	100	3
3	IPCC	MME103(IPCC)	Introduction to AI and ML	3	2	0	03	50	50	100	4
4	PCC	MME114	**Professional Elective 1**	3	0	0	03	50	50	100	3
5	PCC	MME115	**Professional Elective 2**	3	0	0	03	50	50	100	3
6	PCCL	MMEL106	Engineering Computational Tools Laboratory	0	2	2	03	50	50	100	2
9	NCMC	MRMI107	Research Methodology and IPR (**Online**)	Online courses (online.vtu.ac.in)							PP
								300	**300**	**600**	**18**

Professional Elective 1		**Professional Elective 2**	
MME114A	Material Selection in Machine Design	MME115A	Smart Mobility
MME114B	Advance Fluid Mechanics	MME115B	Industrial Robots
MME114C	Additive Manufacturing Techniques	MME115C	Design of Experiments
MME114D	Vibration and Condition Monitoring	MME115D	Theory of Metal Cutting and forming

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 **,NCMC**- None Credit Mandatory Course, ,**L-**Lecture**, P-**Practical**, T/SDA-**Tutorial **/** Skill Development Activities(Hours are for Interaction between faculty and students) **MRMI107**- Research Methodology and IPR (**Online**) for the students who have **not studied** this course in the Undergraduate level. This course is not counted for vertical progression, Students have to qualify for the award of the master's degree.

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.

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 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:** Practical courses whose 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.

MRMI107-Research Methodology and IPR- None Credit Mandatory Course (NCMC) if students have not studied this course in their undergraduate program then he /she has to take this course at **http://online.vtu.ac.in** and to qualify for this course is compulsory before completion of the minimum duration of the program (Two years), however, this course will not be considered for vertical progression.