

ME (Mechanical Engineering)

Curriculum Structure and Syllabus

(Revised July 16, 2013)

PG – Curriculum Structure as approved by Senate



DEPARTMENT OF MECHANICAL ENGINEERING

PEC UNIVERSITY OF TECHNOLOGY, CHANDIGARH

Sr. No.	Courses	Credit Structure	
		No. of Courses	Credits
1	Program Core	04	12(3 each)
2	Open core	02	06(3 each)
3	Program Elective	05	15 (3 each)
4	Open Elective	01	03
5	Program Lab	02	04 (2 each)
6	Case Histories and industry Experiences	01	01
7	Seminar and Technical Writing	01	01
8	Project/ Industry based Project	02	12+18=30
Total Credits			72

Course/ Credits Distribution of ME (Mechanical Engineering)

Program Core

Course Code	Course Name	L T P	Credits
MEN501	Program Core-I : Finite Element Analysis	3-0-0	03
MEN502	Program Core-II : Computer Aided Engineering	3-0-0	03
MEN505	Program Core III: Mechanical Behaviour of Materials	3-0-0	03
MEN506	Program Core IV: Advance Manufacturing Processes	3-0-0	03
Total			12

Open core

Course Code	Course Name	L T P	Credits
MEN503	Program Mathematics (Open Core I): Mathematical Modeling and Simulation	3-0-0	03
MEN504	(Open Core II): Design of Experiments and Research Methodology	3-0-0	03

Total	06
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Program Elective-I (Any One)

Course Code	Course Name	L T P	Credits
MEN533	Micro Electromechanical Systems	3-0-0	03
MEN523	Automation and Robotics	3-0-0	03
MEN525	Production system Design & Quality Control	3-0-0	03
Total			03

Program Elective-II (Any One)

Course Code	Course Name	L T P	Credits
MEN521	Advanced Vibration Engineering	3-0-0	03
MEN522	Advanced Fluid and Gas Dynamics	3-0-0	03
MEN524	Advanced Heat Transfer	3-0-0	03
Total			03

Program Elective-III (Any One)

Course Code	Course Name	L T P	Credits
MEN526	Tribology	3-0-0	03
MEN527	Dynamics of Rotating Machinery	3-0-0	03
MEN528	Renewable Energy and Energy Management	3-0-0	03
MEN529	Mechatronics	3-0-0	03
MEN530	Thermal Power Plant Engineering	3-0-0	03
MEN531	Advanced Mechanics of Solids	3-0-0	03
Total			03

Program Elective-IV(Any One)

Course Code	Course Name	L T P	Credits
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MEN532	Advanced Design of Mechanical Systems	3-0-0	03
MEN534	Experimental Stress Analysis	3-0-0	03
MEN535	Advanced Metal Cutting	3-0-0	03
MEN540	Measurement and Metrology	3-0-0	03
Total			03

Program Elective-V(Any One)

Course Code	Course Name	L T P	Credits
MEN536	Work System Design and Ergonomics	3-0-0	03
MEN537	Design of Steam Turbine	3-0-0	03
MEN538	Fracture and Fatigue	3-0-0	03
MEN539	Advanced Internal Combustion Engine	3-0-0	03
Total			03
Program Elective Total			15

Open Elective

Course Code	Course Name	L T P	Credits
MEN551	Maintenance Engineering	3-0-0	03
MEN552	Integrated Product Design and Development	3-0-0	03
MEN553	Total Quality Management	3-0-0	03
Total			03

Program Lab

Course Code	Course Name	L T P	Credits
MEN561	Program Lab-I : Computer Aided Engineering Lab-I	0-0-3	02
MEN562	Program Lab-II : Advanced Manufacturing and Material Testing Lab-II	0-0-3	02
Total			04

Case Histories and industry Experiences

Course Code	Course Name	L T P	Credits
MEN591	Case Histories and industry	0-0-2	01

	Experiences		
Total			01

Seminar and Technical Writing

Course Code	Course Name	L T P	Credits
MEN592	Seminar and Technical Writing	0-0-2	01
Total			01

Project/ Industry based Project

Course Code	Course Name	L T P	Credits
MEN598	Project/ Industry based Project -I	0-0-24	12
MEN599	Project/ Industry-based Project -II	0-0-36	18
Total			30

CONSOLIDATED SCHEME-ME Mechanical Engineering

Sem							Lecture Course	L	T	P	Weekly Contact	Credits
I	Program Core -I Finite Element Methods: MEN501 (LTP: 3 0 0)	Program Core-II Computer Aided Engineering : MEN502 (LTP: 3 0 0)	Program Mathematics/Mathematics (Open core I) Mathematical Modeling and Simulation: MEN503 (LTP: 3 0 0)	Program Elective I (see list of Electives) (LTP: 3 0 0)	Program Elective II (see list of Electives) (LTP: 3 0 0)	Program Lab I Computer Aided Engineering Lab-I : MEN561 (LTP: 0 0 3)	5	15	0	3	18	17
II	(Open Core II) Design of Experiments & Research Methodology : MEN504 LTP: 3 0 0)	Program Core-III Mechanical Behaviour of Materials: MEN505 (LTP: 3 0 0)	Program Core-IV Advanced Manufacturing Processes: MEN506 (LTP: 3 0 0)	Program Elective III (see list of Electives) (LTP: 3 0 0)	Open Elective (LTP: 3 0 0)	Program Lab II Advanced Manufacturing and Material Testing Lab-II: MEN562 (LTP: 0 0 3)	5	15	0	3	18	17
III	Program Elective IV (see list of Electives) (LTP: 3 0 0)	Program Elective V (see list of Electives) (LTP: 3 0 0)	Case History and Industry Experiences :MEN591 (LTP: 0 0 2)	Seminar & Technical Writing : MEN592 (LTP: 0 0 2)	Project/ Industry Based Project -I :MEN598 (LTP: 0 0 32)	-	2	6	0	36	42	20
IV	Project/ Industry Based Project-II: MEN599 (LTP: 0 0 36)	-	-	-	-	-	-	0	0	36	36	18

PG (Mechanical Engineering) – Curriculum Structure

Semester I

Sr. No.	Course Code	Course Name	L	T	P	Credits
1	MEN501	Program Core-I : Finite Element Analysis	3	0	0	3
2	MEN502	Program Core-II : Computer Aided Engineering	3	0	0	3
3	MEN503	Program Mathematics (Open Core I): Mathematical Modeling and Simulation	3	0	0	3
4		Program Elective-I	3	0	0	3
5		Program Elective-II	3	0	0	3
6	MEN561	Program Lab-I : Computer Aided Engineering Lab-I	0	0	3	2
Total						17

Semester II

Sr. No.	Course Code	Course Name	L	T	P	Credits
1	MEN504	(Open Core II): Design of Experiments and Research Methodology	3	0	0	3
2	MEN505	Program Core III: Mechanical Behaviour of Materials	3	0	0	3
3	MEN506	Program Core IV: Advance Manufacturing Processes	3	0	0	3
4		Program Elective-III	3	0	0	3
5		Open Elective*	3	0	0	3
6	MEN562	Program Lab-II : Advanced Manufacturing and Material Testing Lab-II	0	0	3	2
Total						17

*It could be intra/inter departmental ME course

Semester III

Sr. No.	Course Code	Course Name	L	T	P	Credits
1		Program Elective-IV				3
2		Program Elective-V				3
3	MEN591	Case Histories and industry Experiences [#]	0	0	2	1
4	MEN592	Seminar and Technical Writing	0	0	2	1
5	MEN598	Project/ Industry based Project -I	0	0	32	12
Total						20

[#] To include 4 to 5 invited lectures from industrial experts

Semester IV

Sr. No.	Course Code	Course Name	L	T	P	Credits
1	MEN599	Project/ Industry-based Project -II	0	0	36	18
Total						18

List of Electives

Program Elective-I (Any One)

Course Code	Course Name	L T P	Credits
MEN533	Micro Electromechanical Systems	3-0-0	03
MEN523	Automation and Robotics	3-0-0	03
MEN525	Production system Design & Quality Control	3-0-0	03
Total			03

Program Elective-II (Any One)

Course Code	Course Name	L T P	Credits
MEN521	Advanced Vibration Engineering	3-0-0	03
MEN522	Advanced Fluid and Gas Dynamics	3-0-0	03

MEN524	Advanced Heat Transfer	3-0-0	03
Total			03

Program Elective-III (Any One)

Course Code	Course Name	L T P	Credits
MEN526	Tribology	3-0-0	03
MEN527	Dynamics of Rotating Machinery	3-0-0	03
MEN528	Renewable Energy and Energy Management	3-0-0	03
MEN529	Mechatronics	3-0-0	03
MEN530	Thermal Power Plant Engineering	3-0-0	03
MEN531	Advanced Mechanics of Solids	3-0-0	03
Total			03

Program Elective-IV(Any One)

Course Code	Course Name	L T P	Credits
MEN532	Advanced Design of Mechanical Systems	3-0-0	03
MEN534	Experimental Stress Analysis	3-0-0	03
MEN535	Advanced Metal Cutting	3-0-0	03
MEN540	Measurement and Metrology	3-0-0	03
Total			03

Program Elective-V(Any One)

Course Code	Course Name	L T P	Credits
MEN536	Work System Design and Ergonomics	3-0-0	03
MEN537	Design of Steam Turbine	3-0-0	03
MEN538	Fracture and Fatigue	3-0-0	03
MEN539	Advanced Internal Combustion Engine	3-0-0	03
Total			03
Program Elective Total			15