Structure of S.E. (Mechanical Engineering/ Automobile Engineering)
2015 Course

Semester-I

Subject Code	Subject	Teaching Scheme Hours/Week			Examination Scheme					Total Marks	Credits	
		L	Tut.	P.	In-Sem (online)	End-Sem	TW	Pr.	Oral		Lect/Tut	Pr/Or
207002	Engineering Mathematics – III	04	01	-	50	50	25	-	-	125	05	-
202041	Manufacturing Process-I	03	-	02	50	50	50	-	-	150	03	01
202042	Computer Aided Machine Drawing	01	-	02	--	--		50	-	50	01	01
202043	Thermodynamics	04	-	02	50	50	-	-	50	150	04	01
202044	Material Science	03	01	-	50	50	25	-	-	125	03	01
202051	Strength of Materials	04	-	02	50	50	-	-	50	150	04	01
202055	Audit course											
					--	--						
	Total	19	02	08	250	250	100	50	100	750	20	05
	Total of Part-I	29 Hrs				750					25	

Note: Material Science and Engineering Mathematics-III practical may be carried out fortnightly for two hours, so that the tutorial hours may be used as practical.

Semester-II

Subject Code	Subject	Teaching Scheme Hours/Week			Examination Scheme					Total Marks	Credits	
		L	Tut.	P.	In-Sem (online)	End-Sem	TW	Pr.	Oral		Lect/Tut	Pr/Or
202045	Fluid Mechanics	04	-	02	50	50	-	50	-	150	04	01
202047	Soft Skills	-	-	02	--	--	25	-	-	25	-	01
202048	Theory of Machines– I	04	01	-	50	50	25	-	25	150	04	01
202049	Engineering Metallurgy	03	01	-	50	50	-	-	25	125	03	01
202050	Applied Thermodynamics	04	-	02	50	50	-	50	-	150	04	01
203152	Electrical and Electronics Engineering	03	-	02	50	50	25	-	-	125	03	01
202053	Machine Shop – I	-	-	02	–	–	25	-	-	25	-	01
	Total	18	02	10	250	250	100	100	50	750	18	07
	Total of Part-II	30 Hrs				750					25	

Note: Theory of Machine-I and Engineering Metallurgy practical may be carried out fortnightly for two hours, so that the tutorial hours may be used as practical.

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Audit Course1

In addition to credits courses, it is recommended that there should be audit course (non-credit course) from second year of Engineering. The student will be awarded grade as AP on successful completion of audit course. The student may opt for one of the audit courses, starting in second year first semester. Though not mandatory, such audit courses can help the student to get awareness of different issues which make impact on human lives and enhance their skill sets to improve their employability. List of audit courses offered in each semester is provided in curriculum. Student can choose one audit course from the list. Evaluation of audit course will be done at institute level. Method of conduction and method of assessment for audit courses is suggested.

The student registered for audit course shall be awarded the grade AP and shall be included such grade in the Semester grade report for that course, provided student has the minimum attendance as prescribed by the Savitribai Phule Pune University and satisfactory in-semester performance and secured a passing grade in that audit course. No grade points are associated with this 'AP' grade and performance in these courses is not accounted in the calculation of the performance indices SGPA and CGPA. Evaluation of audit course will be done at institute level itself.

(Ref-http://www.unipune.ac.in/Syllabi_PDF/revised-2015/engineering/UG_RULE_REGULATIONS_FOR_CREDIT_SYSTEM-2015_18June.pdf)

Guidelines for Conduction and Assessment (Any one or more of following but not limited to)

- Lectures/ Guest Lectures
- Visits (Social/Field) and reports
- Demonstrations
- Surveys
- Mini Project
- Hands on experience on specific focused topic

Guidelines for Assessment (Any one or more of following but not limited to)

- Written Test
- Demonstrations/ Practical Test
- Presentations
- IPR/Publication
- Report

List of courses under Audit Course1

Course Code	Audit Course Title
202054 A	Road Safety
202054 B	Innovations in engineering field / Agriculture
202054 C	Value Education

The detail course contents of above mentioned audit courses are available in Mechanical Engineering 2015 course syllabus. Moreover students can opt for any other audit course from the list of Audit Course1 of any branch of engineering.

Savitribai Phule Pune University
T.E. Mechanical Engineering 2015 – Course
T. E. (Mechanical) (2015 Course) Semester – I

Code	Subject	Teaching Scheme Hrs/week			Examination Scheme					Total Marks	Credits	
		Lecture	Tut	Pract	In-Sem	ESE	TW	PR	OR		Th	TW/PR/OR
302041	Design of Machine Elements-I	4	-	2	30@	70@	50	-		150	4	1
302042	Heat Transfer*	4	-	2	30	70		50	-	150	4	1
302043	Theory of Machines-II^{S}	3	1		30	70	25	-	25	150	3	1
302044	Turbo Machines	3	-	2	30	70	-	-	25	125	3	1
302045	Metrology and Quality Control^{S}	3	-	2	30	70	-	-	25	125	3	1
302046	Skill Development	-	-	2	-	-	25	25	-	50	-	1
Total		17	1	10	150	350	100	75	75	750	17	6
											23	

T. E. (Mechanical) (2015 Course) Semester– II

Code	Subject	Teaching Scheme Hrs /week			Examination Scheme					Total Marks	Credits	
		Lecture	Tut	Pract	In-Sem	ESE	TW	PR	OR		Th	TW/PR/OR
302047	Numerical Methods and Optimization*	4	-	2	30	70	-	50	-	150	4	1
302048	Design of Machine Elements-II	4	-	2	30@	70@	25	-	25	150	4	1
302049	Refrigeration and Air Conditioning	3	-	2	30	70	-	-	25	125	3	1
302050	Mechatronics$^{\%}$	3	1		30	70	-	-	25	125	3	1
302051	Manufacturing - Process-II^{S}	3	-	-	30	70	-	-	-	100	3	-
302052	Machine Shop-II^{S}	-	-	2	-	-	50	-	-	50	-	1
302053	Seminar^{S}	-	-	2	-	-	25	-	25#	50	-	1
302054	Audit Course*	--	--	--	--	--	-	-	-	-	-	-
Total		17	1	10	150	350	100	50	100	750	17	6
											23	

Though it is under Oral head Internal Panel to be appointed by Principal and HOD. Examination schedule will not be prepared at University level.

* Marked subjects are common with TE (Auto. Engg.) and TE Mech. Sandwich

^{S} Marked subjects are common with TE (Auto. Engg.) only

$^{\%}$ Marked subjects are common with TE Mech. Sandwich only

@ Examination time for Insem examination 1 Hr 30 Min. and Endsem examination 3Hrs.

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T. E. (Mechanical) Semester– I

(w.e.f. Academic year 2014-15)

Code	Subject	Teaching Scheme (Weekly Load in hrs)			Examination Scheme (Marks)					
		Lect.	Tut	Pract.	Theory		TW	PR	OR	Total
					In Sem.	End Sem.				
302041	Design of Machine Elements – I	4	–	2	30#	70@	25**	–	–	125
302042	Heat Transfer	4	–	2	30	70	–	50*	–	150
302043	Theory of Machines-II	4	–	2	30	70	–	–	50$	150
302044	Metrology and Quality Control	3	–	2	30	70	–	–	50	150
302045	Hydraulics and Pneumatics	3	–	2	30	70	25	–	–	125
302046	Skill Development	–	–	2	–	–	50	–	–	50
Total of Semester– I		18	–	12	150	350	100	50	100	750

* Evaluation should be on performance in practical examination and oral based on Term Work
$Common Oral will be based on both TOM-I and TOM-II term work atend of First Semester of T.E.

T. E. (Mechanical) Semester– II

Code	Subject	Teaching Scheme (Weekly Load in hrs)			Examination Scheme (Marks)					
		Lect.	Tut	Pract.	Theory		TW	PR	OR	Total
					In Sem.	End Sem.				
302047	Numerical Methods and Optimization	4	–	2	30	70	–	50	–	150
302048	Design of Machine Elements -II	4	–	2	30#	70@	25	–	50**	175
302049	Turbo Machines	4	–	2	30	70	25		–	125
302050	Mechatronics	3	–	2	30	70	25	–	–	125
302051	Manufacturing Process-II	3	–	–	30	70	–	–	–	100
302052	Machine Shop -II	–	–	2	–	–	25	–	–	25
302053	Seminar	–	–	2			–	–	50	50
Total of Semester– II		18		12	150	350	100	50	100	750

Important Notes

1. *In-Sem Theory examination will be conducted,approximately one and half month after the commencement of each semester*
2. *In-Sem Theory examination will be based on first three units from Syllabus and will be conducted by the University of Pune*
3. *Total time allotted for In-Sem Theory examination will be One Hour only*
4. *(#)Total time allotted for In-Sem Theory examination (DME-I and DME-II) will be 2 hrs*
5. *Total time allotted for End-Sem Theory examination will be 2hrs 30 min*
6. *(@)Total time allotted for End-Sem Theory examination (DME-I and DME-II) will be 3 hrs*
7. *** Common oral based on both DME-I and DME-II term work*

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Structure for Mechanical Engineering with effect from academic year 2013 –14

S. E. (Mechanical) and S. E. (Automobile) Semester – I

Code	Subject	Teaching Scheme (Weekly Load in hrs)			Examination Scheme (Marks)					
		Leet.	Tut	Practical	Theory		TW	PR	OR+	Total
					Paper	Online				
207002	Engineering Mathematics – III*	4	1	–	50	50	25++	–	–	125
202041	Manufacturing Process-I	3	–	–	50	50	–	–	–	100
202042	Computer Aided Machine Drawing*	1	–	2	–	–	–	50	–	50
202043	Thermodynamics*	4	–	2	50	50	–	–	50	150
202044	Material Science	3	1	–	50	50	25++	–	–	125
202045	Fluid Mechanics	3	–	2	50	50	–	–	50	150
202046	Workshop Practice II	–	–	2	–	–	25	–	–	25
202047	Soft Skills			2	–	–	25	–	–	25
Total of Semester – I		18	2	10	250	250	100	50	100	750

\+ Under Oral head, examination should be based on term work completed during practical and theory syllabus

++ Term work marks should be based on term work completed in tutorial sessions

S. E. (Mechanical) and S. E. (Automobile) Semester – II

Code	Subject	Teaching Scheme (Weekly Load in hrs)			Examination Scheme (Marks)					
		Leet.	Tut	Practical	Theory		TW	PR	OR+	Total
					Paper	Online				
202048	Theory of Machines-I*	4	–	2	50	50	25$	–	–	125
202049	Engineering Metallurgy	3	–	2	50	50	–	–	50	150
202050	Applied Thermodynamics	4	–	2	50	50	25	–	50	175
202051	Strength of Materials*	3	–	2	50	50	–	–	50	150
203152	Electronics and Electrical Engineering*	4	–	2	50	50	25	–	–	125
202053	Machine Shop-I	–	–	2	–	–	25	–	–	25
Total of Semester – II		18	–	12	250	250	100	–	150	750

\+ Under Oral head, examination should be based on term work completed during practical and theory syllabus

$ Common Oral will be based on both TOM-I and TOM-II term work at end of First Semester of T.E.

* Subjects Common with Mechanical Sandwich

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M.E. Mechanical Engineering (Design Engineering) - 2013 Course

SEMESTER I

CODE	SUBJECT	TEACHING SCHEME	EXAMINATION SCHEME					CREDITS
		Lect./ Pr	Paper		TW	Oral/ Presentation	Total	
			In Semester Assessment	End Semester Assessment				
507201	Advanced Mathematics	4	50	50	-	-	100	4
502202	Material Science and Mechanical Behavior of Materials	4	50	50	-	-	100	4
502203	Advanced Stress Analysis	4	50	50	-	-	100	4
502204	Research Methodology	4	50	50	-	-	100	4
502205	Elective I**	5	50	50	-	-	100	5
502206	Lab Practice I	4			50	50	100	4
Total		25	250	250	50	50	600	25

SEMESTER II

CODE	SUBJECT	TEACHING SCHEME	EXAMINATION SCHEME					CREDITS
		Lect./ Pr	Paper		TW	Oral/ Presentation	Total	
			In Semester Assessment	End Semester Assessment				
502207	Analysis and Synthesis of Mechanisms	4	50	50	-	-	100	4
502208	Advanced Mechanical Vibrations	4	50	50	-	-	100	4
502209	Finite Element Method	4	50	50	-	-	100	4
502210	Elective II	5	50	50	-	-	100	5
502211	Lab Practice II	4	-	-	50	50	100	4
502212	Seminar I	4	-	-	50	50	100	4
Total		25	200	200	100	100	600	25

Note:
Elective I: Common to All M.E. Mechanical Programmes**

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SEMESTER III

CODE	SUBJECT	TEACHING SCHEME	EXAMINATION SCHEME					CREDITS
		Leet./ Pr	Paper		TW	Oral/ Presentation	Total	
			In Semester Assessment	End Semester Assessment				
602213	Optimization Techniques	4	50	50	-	-	100	4
602214	Mechanical Measurements and Controls	4	50	50	-	-	100	4
602215	Elective III	5	50	50	-	-	100	5
602216	Seminar II	4	-	-	50	50	100	4
602217	Project Stage I	08	-	-	50	50	100	8
Total		25	150	150	100	100	500	25

SEMESTER IV

CODE	SUBJECT	TEACHING SCHEME	EXAMINATION SCHEME				CREDITS
		Lect./ P	Paper	TW	Oral/ presentation	Total	
602218	Seminar III	5	-	50	50	100	5
602219	Project Work Stage II	20	-	150	50	200	20
Total		25	-	200	100	300	25

Lab Practice I & II:
The laboratory work will be based on completion of assignments confined to the courses of that semester.

SEMINAR:
The student shall deliver the seminar on a topic approved by authorities.

Seminar I : shall be on state of the art topic of student's own choice approved by authority. The student shall submit the seminar report in standard format, duly certified for satisfactory completion of the work by the concerned Guide and head of the department/institute.

Seminar II : shall be on the topic relevant to latest trends in the field of concerned branch, preferably on the topic of specialization based on the electives selected by him/her approved by authority. The student shall submit the seminar report in standard format, duly certified for satisfactory completion of the work by the concerned Guide and head of the department/institute.

Seminar III: shall be extension of seminar II. The student shall submit the seminar report in standard format, duly certified for satisfactory completion of the work by the concerned Guide and head of the department/institute.

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