D. Y. PATIL AGRICULTURE AND TECHNICAL UNIVERSITY, TALSANDE, KOLHAPUR
SCHOOL OF ENGINEERING AND TECHNOLOGY

SYLLABUS STRUCTURE

B. Tech. (MECHANICAL DEPARTMENT)

INDEX

DISTRIBUTION OF SUBJECT GROUPS

1	Basic Science Courses (BSC)
2	Engineering Science Courses (ESC)
3	Humanities & Social Science Including Management Courses (HSSMC)
4	Professional Core Courses (PCC)
5	Professional Elective Courses (PEC)
6	Open Elective Courses
7	Seminar/Project/Internship/Industrial Training
8	Mandatory Courses

D. Y. PATIL AGRICULTURE AND TECHNICAL UNIVERSITY, TALSANDE, KOLHAPUR
SCHOOL OF ENGINEERING AND TECHNOLOGY

SYLLABUS STRUCTURE

B. Tech. (MECHANICAL DEPARTMENT)

DISTRIBUTION OF COURSES IN SUBJECT GROUPS

1) BASIC SCIENCE COURSES (BSC)

Sr. No.	Course Code	Corse Type	Name of Course	Teaching Scheme per week			
				L	T	P	Credits
1.			Applied Mathematics I				4
2.			Applied Physics I				3
3.			Applied Chemistry I				3
4.			Applied Mathematics II				4
5.			Applied Physics Lab I				1
6.			Applied Chemistry Lab I				1
						Total Credits	**16**

2) ENGINEERING SCIENCE COURSES (ESC)

Sr. No.	Course Code	Corse Type	Name of Course	Teaching Scheme per week			
				L	T	P	Credits
1.			Computer Programming I				02
2.			Engineering Graphics				02
3.			Basic Electrical And Electronics				03
4.			Engineering Mechanics				03
5.			Computer Programming Lab I				01
6.			Engineering Graphics Lab				01
7.			Workshop Practice I				01
8.			Basic Electrical & Electronics Lab				01
9.			Engineering Mechanics Lab				01
10.			Workshop Practice II				01
11.			Engineering Mathematics				04
12.			Computer Programming				03
13.			Computer Programming Lab				01
14.			Numerical Methods				04

				28

3) Humanities & Social Science Including Management Courses (HSSMC)

Sr. No.	Course Code	Corse Type	Name of Course	Teaching Scheme per week			
				L	T	P	Credits
1.			Communication Skill				03
2.			Professional Communication				03
3.			Project Management				02
4.			Research and methodology				01
			Total Credits				09

4) PROFESSIONAL CORE COURSES (PCC)

Sr. No.	Course Code	Corse Type	Name of Course	Teaching Scheme per week			
				L	T	P	Credits
1.			Fluid Mechanics				03
2.			Engineering Thermodynamics				03
3.			Material Science and Metallurgy				03
4.			Fluid Mechanics Lab				01
5.			Engineering Thermodynamics Lab				01
6.			Material Science and Metallurgy Lab				01
7.			CAD lab				01
8.			Machine Shop Practice I				01
9.			Manufacturing Technology				03
10.			Industrial Fluid Power				03
11.			Fluid and turbo Machinery				03
12.			Strength of Material				03
13.			Manufacturing Technology Lab				01
14.			Industrial Fluid Power Lab				01
15.			Fluid and Turbo Machinery Lab				01
16.			Strength of Material Lab				01
17.			Measurement & Control System Lab				01
18.			Machine Shop Practice II				01
19.			Kinematics of Machinery				03
20.			Metrology and Quality engineering				03
21.			Heat and Mass Transfer				03
22.			Machine Design I				04
23.			Kinematics of Machinery Lab				01
24.			Metrology & Quality Engineering Lab				01
25.			Heat and Mass Transfer Lab				01

			Machine Design I Lab				01
27.			Dynamics of Machinery				03
28.			Machine Design II				03
29.			Mechatronics & its Applications				03
30.			I C Engines				03
31.			Dynamics of Machinery Lab				01
32.			Machine Design II Lab				01
33.			Mechatronics Lab				01
34.			I C Engines Lab				01
35.			Refrigeration and Air Conditioning				03
36.			Automobile Engineering				03
37.			Finite Element analysis				03
38.			Refrigeration & Air Conditioning Lab				01
39.			Automobile Engineering Lab				01
40.			Finite Element analysis Lab				01
41.			Mechanical System Design				03
42.			Mechanical System Design Lab				01
					Total Credits		**81**

5) PROFESSIONAL ELECTIVE COURSES (PEC)

Sr. No.	**Course Code**	**Corse Type**	**Name of Course**	**Teaching Scheme per week**			
				L	**T**	**P**	**Credits**
1			Elective-I				04
2			Elective-II				03
3			Elective-III				04
4			Elective-IV				03
					Total Credits		14

6) OPEN ELECTIVE COURSES (OEC)

Sr. No.	Course Code	Corse Type	Name of Course	Teaching Scheme per week			
				L	T	P	Credits
1			Elective-II				02
2			Elective-IV				04
				Total Credits			06

7) SEMINAR/PROJECT/INTERNSHIP/INDUSTRIAL TRAINING

Sr. No.	Course Code	Corse Type	Name of Course	Teaching Scheme per week			
				L	T	P	Credits
1.			Presentation and Report Writing				02
2.			Project phase I				01
3.			Industrial Training *				01
4.			Project Phase II				04
				Total Credits			08

8) MANDATORY COURSES

Sr. No.	Course Code	Corse Type	Name of Course	Teaching Scheme per week			
				L	T	P	Credits
1			Environment Science	**-**	**-**	**-**	**NC**
2			Motor Vehicle and Industrial Acts	--	-	-	**NC**
			Constitution of India				**NC**
				Total Credits			**00**

D. Y. PATIL AGRICULTURE AND TECHNICAL UNIVERSITY, TALSANDE, KOLHAPUR
SCHOOL OF ENGINEERING AND TECHNOLOGY

SYLLABUS STRUCTURE

B. Tech. (MECHANICAL DEPARTMENT)

SUMMARY OF DISTRIBUTION OF COURSES IN ALL SEMESTER

Sr. No.	Category	No. of Subjects in Each Category	Suggested Breakup of Credits by AICTE	Total
1	Basic Science Course	06	25	16
2	Engineering Science Course	14	24	29
3	Mandatory Learning Course	03	12	-
4	Humanities/Social Sciences/Management Course	04	48	10
5	Professional Elective Course	04	18	14
6	Program Core Course	42	18	81
7	Open Elective Course	03	15	06
8	Project work, Seminar and Training	04	NC	08
			160	**164**

D. Y. PATIL AGRICULTURE AND TECHNICAL UNIVERSITY, TALSANDE, KOLHAPUR
SCHOOL OF ENGINEERING AND TECHNOLOGY

SYLLABUS STRUCTURE

B. Tech. (MECHANICAL DEPARTMENT)

Semester wise Distribution of Courses

No. of Courses	SEMESTER							
	I	II	III	IV	V	VI	VII	VIII
1	Applied Mathematics I	Applied Mathematics II	Engineering Mathematics	Numerical Methods	Kinematics of Machinery	Dynamics of Machinery	Refrigeration and Air Conditioning	Mechanical System Design
2	Applied Chemistry	Applied Physics	Fluid Mechanics	Manufacturing Technology	Metrology and Quality engineering	Machine Design II	Automobile Engineering	Open Elective II
3	Computer Programming in C	Object Oriented programming	Engineering Thermodynamics	Industrial Fluid Power	Heat and Mass Transfer	Mechatronics & its Applications	Finite Element analysis	Professional Elective – III
4	Engineering mechanics	Engineering drawing	Material Science and Metallurgy	Fluid and turbo Machinery	Machine Design I	I C Engines	Professional Elective – I	Professional Elective – IV
5	Fundamental of electronics and electrical	Engineering Exploration	Environment Science	Strength of Material	Project Management	Open Elective - I	Professional Elective – II	Mechanical System Design Lab
6	Social Inovation	Professional Comuniication	Fluid Mechanics Lab	Motor Vehicle and Industrial Acts	Presentation and Report Writing	Research Methodology	Refrigeration & Air Conditioning Lab	Open Elective II Lab

7	Applied Mathematics I	Applied Mathematics II	Engineering Thermodynamics Lab	Manufacturing Technology Lab	Kinematics of Machinery Lab	Dynamics of Machinery Lab	Automobile Engineering Lab	Professional Elective – III Lab
8	Applied Chemistry	Applied Physics	Material Science and Metallurgy Lab	Industrial Fluid Power Lab	Metrology & Quality Engineering Lab	Machine Design II Lab	Finite Element analysis Lab	Project Phase II
9	Computer Programming in C	Object Oriented programming	CAD lab	Fluid and Turbo Machinery Lab	Heat and Mass Transfer Lab	Mechatronics Lab	Professional Elective – I Lab	
10	Engineering mechanics	Engineering drawing	Machine Shop Practice I	Strength of Material Lab	Machine Design I Lab	I C Engines Lab	Project Phase I	
11	Fundamental of electronics and electrical	Professional Comuniication	Measurement & Control System Lab	Machine Shop Practice II			Industrial Training*	
12	Workshop Practice-I	Workshop Practice II					Constitution of India	
13	Foreign Langauge							
14	Democracy Election and good governance (No Credit mandatory Corse)							
Credits	**23**	**22**	**19**	**21**	**20**	**19**	**21**	**19**

SYLLABUS STRUCTURE

B. Tech. (MECHANICAL DEPARTMENT)

SEMESTERWISE CREDITS & MARKS

SEM	CREDITS	NO. OF SUBJECT	TOTAL MARKS
I	23	14	825
II	22	12	775
III	19	11	1000
IV	21	11	1000
V	20	10	1000
VI	19	10	1000
VII	21	12	900
VIII	19	08	700
TOTAL	164	88	7200

Note:* Democracy, Election & Good Governance subject counted in II SEM.

D. Y. PATIL AGRICULTURE AND TECHNICAL UNIVERSITY, TALSANDE, KOLHAPUR

SCHOOL OF ENGINEERING AND TECHNOLOGY

SCHEME OF TEACHING AND EXAMINATION

FIRST YEAR B. Tech. (MECHANICAL DEPARTMENT)

SEMESTER- I (Chemistry Group)

Semester-I										
Course Category	Course Code	Course Title	Teaching Scheme			Examination Scheme				Credit
			L	T	P	ISE	MSE	ESE	Total	
BSC		Applied Mathematics I	03	---	--	20	30	50	100	3
BSC		Applied Chemistry	03	--	--	20	30	50	100	3
ESC		Computer Programming in C	03	--	--	20	30	50	100	3
ESC		Engineering mechanics	03	---	---	20	30	50	100	3
ESC		Fundamental of electronics and electrical	03	--	--	20	30	50	100	3
HSMC		Social Inovation		01	02	50			50	2
BSC		Applied Mathematics I	--	01		25			25	1
BSC		Applied Chemistry	--	--	02	25			25	1
ESC		Computer Programming in C	--	--	02	25			25	1
ESC		Engineering mechanics	--	--	02	25			25	1
ESC		Fundamental of electronics and electrical	--	--	02	25			25	1
ESC		Workshop Practice-I	--	--	02	25			25	1
HMSC		Foreign Langauge	01					100	100	
MC		Democracy Election and good governance (No Credit mandatory Corse)								

Total	**16**	**2**	**12**				**825**	**23**

Semester-II									
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Examination Scheme**				**Credit**
			L	**T**	**P**	**ISE**	**MSE**	**ESE**	**Total**	
BSC		Applied Mathematics II	3		--	20	30	50	100	3
BSC		Applied Physics	3	--	--	20	30	50	100	3
ESC		Object Oriented programming	3	--	--	20	30	50	100	3
ESC		Engineering drawing	2	--	--	20	30	50	100	2
HSMC		Engineering Exploration		--	04	100			100	2
HSMC		Professional Comuniication	-- 2	--	02	20	30	50	100	2
BSC		Applied Mathematics II	--	01	---	25			25	1
BSC		Applied Physics	--	--	02	25			25	1
ESC		Object Oriented programming	--	--	02	25			25	1
ESC		Engineering drawing	--	--	04	25			25	2
HSMC		Professional Comuniication			02	25			25	1
ESC		Workshop Practice II			02	50			50	1
Total			**13**	**1**	**16**				**775**	**22**

Semester-III										
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Examination Scheme**				**Credit**
			L	**T**	**P**	**ISE**	**MSE**	**ESE**	**Total**	
ESC	0ETMEES201	Engineering Mathematics	03	01	--	20	30	50	100	04
PCC	0ETMEPC202	Fluid Mechanics	03	--	--	20	30	50	100	03
PCC	0ETMEPC203	Engineering Thermodynamics	03	--	--	20	30	50	100	03
PCC	0ETMEPC204	Material Science and Metallurgy	03	--	--	20	30	50	100	03
MLC	0ETMEML206#	Environment Science	02	--	--	--	--	50	100	AC
PCC	0ETMEPC207L	Fluid Mechanics Lab	--	--	02	20	30	50	100	01
PCC	0ETMEPC208L	Engineering Thermodynamics Lab	--	--	02	20	30	50	100	01
PCC	0ETMEPC209L	Material Science and Metallurgy Lab	--	--	02	20	30	50	100	01
PCC	0ETMEPC211L	CAD lab	--	--	02	20	30	--	100	01
PCC	0ETMEPC212L	Machine Shop Practice I	--	--	02	20	30	--	50	01
PCC	0ETMEPC251L	Measurement & Control System Lab	--	--	02	20	30	50	100	01
		Total	**14**	**01**	**12**	**220**	**330**	**450**	**1000**	**19**

#Mandatory Learning Course –
These Non-credit (Audit) Courses will be graded as Pass or Fail (P/F).
Thus the grades obtained will not affect the Grade Point Average (GPI). However, they will appear on grade sheet.
Evaluated at the end of semester through MCQ type exam of 50 marks.

Semester-IV										
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Examination Scheme**				**Credit**
			L	**T**	**P**	**ISE**	**MSE**	**ESE**	**Total**	
ESC	0ETMEES251	Numerical Methods	03	01	--	20	30	50	100	04
PCC	0ETMEPC252	Manufacturing Technology	03	--	--	20	30	50	100	03
PCC	0ETMEPC253	Industrial Fluid Power	03	--	--	20	30	50	100	03
PCC	0ETMEPC254	Fluid and turbo Machinery	03	--	--	20	30	50	100	03
PCC	0ETMEPC255	Strength of Material	03	--	--	20	30	50	100	03
MLC	0ETMEML256#	Motor Vehicle and Industrial Acts	02	--	--	--	--	50	100	AC
PCC	0ETMEPC257L	Manufacturing Technology Lab	--	--	02	20	30	--	50	01
PCC	0ETMEPC258L	Industrial Fluid Power Lab	--	--	02	20	30	--	100	01
PCC	0ETMEPC259L	Fluid and Turbo Machinery Lab	--	--	02	20	30	50	100	01
PCC	0ETMEPC250L	Strength of Material Lab	--	--	02	20	30	--	50	01
PCC	0ETMEPC252L	Machine Shop Practice II	--	--	02	20	30	50	100	01
		Total	**17**	**01**	**10**	**220**	**330**	**450**	**1000**	**21**

#Mandatory Learning Course –
These Non-credit (Audit) Courses will be graded as Pass or Fail (P/F).
Thus the grades obtained will not affect the Grade Point Average (GPI). However, they will appear on grade sheet.
Evaluated at the end of semester through MCQ type exam of 50 marks.

Semester-V										
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Examination Scheme**				**Credit**
			L	**T**	**P**	**ISE**	**MSE**	**ESE**	**Total**	
PCC	0ETMEPC301	Kinematics of Machinery	03	--	--	20	30	50	100	03
PCC	0ETMEPC302	Metrology and Quality engineering	03	--	--	20	30	50	100	03
PCC	0ETMEPC303	Heat and Mass Transfer	03	--	--	20	30	50	100	03
PCC	0ETMEPC304	Machine Design I	03	01	--	20	30	50	100	04
HMC	0ETMEHM306	Project Management	02	--	--	20	30	--	100	02
PST	0ETMEPT307L	Presentation and Report Writing	--	--	02	20	30	--	50	01
PCC	0ETMEPC308L	Kinematics of Machinery Lab	--	--	02	20	30	50	100	01
PCC	0ETMEPC309L	Metrology & Quality Engineering Lab	--	--	02	20	30	50	100	01
PCC	0ETMEPC310L	Heat and Mass Transfer Lab	--	--	02	20	30	50	100	01
PCC	0ETMEPC311L	Machine Design I Lab	--	--	02	20	30	--	50	01
		Total	**14**	**01**	**10**	**240**	**360**	**400**	**1000**	**20**

Semester-VI										
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Examination Scheme**				**Credit**
			L	**T**	**P**	**ISE**	**MSE**	**ESE**	**Total**	
PCC	0ETMEPC351	Dynamics of Machinery	03	--	--	20	30	50	100	03
PCC	0ETMEPC352	Machine Design II	03	--	--	20	30	50	100	03
PCC	0ETMEPC353	Mechatronics & its Applications	03	--	--	20	30	50	100	03
PCC	0ETMEPC354	I C Engines	03	--	--	20	30	50	100	03
OEC	0ETMEOE356	Open Elective -I	02	--	--	20	30	50	100	02
HMC	0ETMEHM357	Research Methodology	01	--	--	20	30	50	50	01
PCC	0ETMEPC358L	Dynamics of Machinery Lab	--	--	02	20	30	50	100	01
PCC	0ETMEPC359L	Machine Design II Lab	--	--	02	20	30	--	50	01
PCC	0ETMEPC360L	Mechatronics Lab	--	--	02	20	30	50	100	01
PCC	0ETMEPC361L	I C Engines Lab	--	--	02	20	30	50	50	01
		Total	**15**	**--**	**08**	**240**	**360**	**500**	**1000**	**19**

Semester-VII										
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Examination Scheme**				**Credit**
			L	**T**	**P**	**ISE**	**MSE**	**ESE**	**Total**	
PCC	0ETMEPC401	Refrigeration and Air Conditioning	03	--	--	20	30	50	100	03
PCC	0ETMEPC402	Automobile Engineering	03	--	--	20	30	50	100	03
PCC	0ETMEPC403	Finite Element analysis	03	--	--	20	30	50	100	03
PEC	0ETMEPC404	Professional Elective – I	03	--	--	20	30	50	100	03
PEC	0ETMEPE405	Professional Elective – II	03	--	--	20	30	50	100	03
PCC	0ETMEHM406	Refrigeration & Air Conditioning Lab	--	--	02	20	30	50	100	01
PCC	0ETMEPT407	Automobile Engineering Lab	--	--	02	20	30	--	50	01
PCC	0ETMEPC408L	Finite Element analysis Lab	--	--	02	20	30	50	100	01
PCE	0ETMEPC409L	Professional Elective – I Lab	--	--	02	20	30	--	50	01
PST	0ETMEPT410L	Project Phase I	--	--	02	20	30	--	50	01
PST	0ETMEPT411L	Industrial Training*	--	--	--	--	--	50	50	01
MLC	0ETMEML412#	Constitution of India	01	--	--	--	--	--	--	AC
		Total	**16**	**--**	**10**	**200**	**300**	**400**	**900**	**21**

#Mandatory Learning Course –
These Non-credit (Audit) Courses will be graded as Pass or Fail (P/F).
Thus the grades obtained will not affect the Grade Point Average (GPI). However, they will appear on grade sheet.
Evaluated at the end of semester through MCQ type exam of 50 marks.

Semester-VIII										
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Examination Scheme**				**Credit**
			L	**T**	**P**	**ISE**	**MSE**	**ESE**	**Total**	
PCC	0ETMEPC301	Mechanical System Design	03	--	--	20	30	50	100	03
OEC	0ETMEPC302	Open Elective II	03	--	--	20	30	50	100	03
PEC	0ETMEPE303	Professional Elective – III	03	--	--	20	30	50	100	03
PEC	0ETMEPE304	Professional Elective – IV	03	--	--	20	30	50	100	03
PCC	0ETMEPC305L	Mechanical System Design Lab	--	--	02	20	30	50	100	01
OEC	0ETMEOE306L	Open Elective II Lab	--	--	02	20	30	--	50	01
PEC	0ETMEPE307L	Professional Elective – III Lab	--	--	02	20	30	--	50	01
PST	0ETMEPT308	Project Phase II	--	--	04	20	30	50	100	04
		Total	**12**	**--**	**10**	**160**	**240**	**300**	**700**	**19**