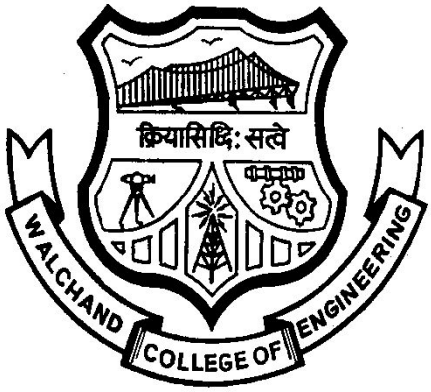
Walchand College of Engineering, Sangli

(An Autonomous Institute)



Curriculum (Structure)

for

B.Tech. Mechanical Engineering

Academic Year 2017-2018

Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme effective from 2016-17

Second Year B.Tech. Program in Mechanical Engineering Semester I

Course Code	Course	Teaching Scheme				Evaluation Scheme			
						Component	Marks		
							Max	Min for Passing	
		L	T	P	Credits				
3MA 201	Engineering Mathematics III	3	1	--	4	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME201	Applied Thermodynamics	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME202	Mechanics of Material	3	1	--	4	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME203	Material Science & Metallurgy	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME204	Manufacturing Processes & Machine Tools	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3HS201	Environmental Science	2	1	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME251	Applied Thermodynamics Lab	--	--	2	1	ISE	50	20	
						ESE(P.O.E)	50	20	
3ME 252	Material Science & Metallurgy Lab	--	--	2	1	ISE	50	20	
						ESE(P.O.E)	50	20	
3ME 253	Mechanical Workshop I	--	--	2	1	ISE	50	20	
						ESE(P.O.E)	50	20	
Total		17	3	6	23	**Total Credits: 23**			
						Total Hours: 26			

Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme effective from 2016-17

Second Year B.Tech. Program in Mechanical Engineering Semester II

Course Code	Course	Teaching Scheme				Evaluation Scheme		
						Component	Marks	
		L	T	P	Credits		Max	Min for Passing
3ME 221	Numerical Methods	3	--	--	3	ISE 1	10	40
						MSE	30	
						ISE 2	10	
						ESE	50	20
3ME 222	Machine Drawing & CAD	3	--	-	3	ISE 1	10	40
						MSE	30	
						ISE 2	10	
						ESE	50	20
3ME 223	Theory of Machines I	3	1	--	4	ISE 1	10	40
						MSE	30	
						ISE 2	10	
						ESE	50	20
3ME 224	Fluid Mechanics	3	--	--	3	ISE 1	10	40
						MSE	30	
						ISE 2	10	
						ESE	50	20
3ME 225	Fundamentals of Machining & Tool Engineering	3	--	--	3	ISE 1	10	40
						MSE	30	
						ISE 2	10	
						ESE	50	20
3ME23#	Professional Elective I	3	1	--	4	ISE 1	10	40
						MSE	30	
						ISE 2	10	
						ESE	50	20
3ME 271	Numerical Methods Lab	--	--	2	1	ISE	100	40
3ME 272	Machine Drawing & CAD Lab	--	--	2	1	ISE	50	20
						ESE(P.O.E)	50	20
3ME 273	Fluid Mechanics Lab	--	--	2	1	ISE	50	20
						ESE(P.O.E)	50	20
3ME 274	Mechanical Workshop II	--	--	2	1	ISE	50	20
						ESE(P.O.E)	50	20
Total		18	2	8	24	**Total Credits: 24**		
						Total Hours: 28		

Professional Elective I	
Course Code	**Course Name**
3ME 231	Steam Power Engineering
3ME 232	Advanced SOM
3ME 233	Metal Forming

Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme effective from 2016-17

Third Year B.Tech. Program in Mechanical Engineering Semester I

Course Code	Course	Teaching Scheme				Evaluation Scheme			
						Component	Marks		
		L	T	P	Credits		Maximum	Min for Passing	
3OE3##	Open Elective I	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME301	Machine Design I	3	1	--	4	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME302	Heat Transfer	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME303	Theory of Machines II	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME304	Metrology and Quality Control	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME3##	Professional Elective II	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME 351	Heat Transfer Lab	--	--	2	1	ISE	50	20	
						ESE(P.O.E.)	50	20	
3ME 352	Theory of Machines II Lab	--	--	2	1	ISE	50	20	
						ESE(P.O.E.)	50	20	
3ME 353	Metrology and Quality Control Lab	--	--	2	1	ISE	50	20	
						ESE(P.O.E.)	50	20	
3ME3*#	Professional Elective II Lab	--	--	2	1	ISE	100	40	
Total		18	1	8	23	**Total Credits: 23**			
						Total Hours: 27			

Professional Elective II		Professional Elective II Lab	
Course Code	**Course Name**	**Course Code**	**Course Name**
3ME 311	Fluid & Turbo Machinery	3ME 361	Fluid & Turbo Machinery Lab
3ME 312	Industrial Hydraulics & Pneumatics	3ME 362	Industrial Hydraulics & Pneumatics Lab
3ME 313	Synthesis of Mechanisms	3ME 363	Synthesis of Mechanism Lab

Open Elective I		
Course Code	**Course Name**	**Offered by Department**
1OE 315	Remote Sensing & GIS, GPS	Civil
1OE 329	Manufacturing Engineering	Mechanical
1OE 330	Energy Engineering	Mechanical
1OE 331	Mechanisms and Machines	Mechanical
1OE 343	Electrical Machines	Electrical
1OE 357	Electronic Systems	Electronics
1OE 358	Fundamental of Analog and Digital Communication	Electronics
1OE 371	Software Engg. & Database Essentials	CSE
1OE 385	Internet of Things	IT

Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme effective from 2016-17

Third Year B.Tech. Program in Mechanical Engineering Semester II

						Component	Marks		
		L	T	P	Credits		Max Marks	Min for Passing	
3OE3*#	Open Elective II	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME321	Machine Design II	3	1	--	4	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME322	I.C. Engines	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME323	CAD-CAM	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME3##	Professional Elective III	3	--	--	3	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME3##	Professional Elective IV	3	1	--	4	ISE 1	10		40
						MSE	30		
						ISE 2	10		
						ESE	50	20	
3ME 371	I.C. Engines Lab	--	--	2	1	ISE	50	20	
						ESE(P.O.E.)	50	20	
3ME 372	CAD-CAM Lab	--	--	2	1	ISE	50	20	
						ESE(P.O.E.)	50	20	
3ME3*#	Professional Elective III Lab	--	--	2	1	ISE	50	20	
						ESE(P.O.E.)	50	20	
3ME 341	Seminar	--	--	2	1	ISE	100	40	
Total		18	2	8	24	**Total Credits: 24**			
						Total Hours: 28			

Professional Elective III	
Course Code	**Course Name**
3ME 331	Mechatronics
3ME 332	Experimental stress Analysis
3ME 333	Foundry Technology

Professional Elective III Lab	
Course Code	**Course Name**
3ME 381	Mechatronics Lab
3ME 382	Experimental stress Analysis Lab
3ME 383	Foundry Technology Lab

Professional Elective IV	
Course Code	**Course Name**
3ME 334	Operations Research
3ME 335	Energy and Power Plant Engg
3ME 336	Quality and Reliability Engg

Open Elective II		
Course Code	**Course Name**	**Offered by Department**
1OE 308	Machine Foundations	Civil-APM
1OE 309	Theory of Structures	Civil-APM
1OE 336	Power Plant Engineering	Mechanical
1OE 337	Fabrication Technology	Mechanical
1OE 338	Mechanical Power Transmission	Mechanical
1OE 350	Renewable Energy	Electrical
1OE 364	Embedded Programming	Electronics
1OE 365	Signal Processing and Foundation	Electronics
1OE 378	Data Analytics	CSE
1OE 392	Web Design & Applications	IT

Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme from Year 2017-18

Final Year U.G. Program in Mechanical Engineering

I Semester

Course Code	Course	Teaching Scheme				Evaluation Scheme		
						Scheme	Theory	
		L	T	P	Credits		Max Marks	Min for Passing
1OE***	Open Elective III	3	--	--	3	ISE- 1	10	40
						ISE- 2	10	
						MSE	30	
						ESE	50	20
3ME401	Industrial Engineering	3	1	--	4	ISE- 1	10	40
						ISE- 2	10	
						MSE	30	
						ESE	50	20
3ME402	Refrigeration & Air Conditioning	3	--	--	3	ISE- 1	10	40
						ISE- 2	10	
						MSE	30	
						ESE	50	20
3ME4##	Professional Elective V	3	--	--	3	ISE- 1	10	40
						ISE- 2	10	
						MSE	30	
						ESE	50	20
3ME4##	Professional Elective VI	3	--	--	3	ISE- 1	10	40
						ISE- 2	10	
						MSE	30	
						ESE	50	20
3ME4##	Professional Elective VII	3	1	--	4	ISE- 1	10	40
						ISE- 2	10	
						MSE	30	
						ESE	50	20
3ME451	Refrigeration & Air Conditioning Lab	--	--	2	1	ISE	50	20
						ESE(P.O.E.)	50	20
3ME4*#	Professional Elective V Lab	--	--	2	1	ISE	50	20
						ESE(P.O.E.)	50	20
3ME4*#	Professional Elective VI Lab	--	--	2	1	ISE	50	20
						ESE(P.O.E.)	50	20
3ME491	Project I	--	--	2*	2	ISE	100	40
Total		18	2	8	25	**Total Credit: 25** **Total Hours: 28**		

*Indicates contact hours per week per project batch of 8-10 students.

Professional Elective V		**Professional Elective V Lab**	
Course Code	Course Name	Course Code	Course Name
3ME411	Dynamics of Machines	3ME452	Dynamics of Machines Lab
3ME412	Computational Fluid Dynamics	3ME453	Computational Fluid Dynamics Lab
3ME413	Advanced Manufacturing Technology	3ME454	Advanced Manufacturing Technology Lab

Professional Elective VI		**Professional Elective VI Lab**	
Course Code	Course Name	Course Code	Course Name
3ME414	Finite Element Method	3ME455	Finite Element Method Lab
3ME415	Cryogenics	3ME456	Cryogenics Lab
3ME416	Computer Integrated Manufacturing and Robotics	3ME457	Computer Integrated Manufacturing and Robotics Lab

Professional Elective VII	
Course Code	Course Name
3ME417	Mechanical Systems Design
3ME418	Product Life Cycle Management
3ME419	Precision Engineering
3ME420	Thermal systems

Open Elective III:		
Course Code	**Course Name**	**Offered by Department**
1OE 401	Structural Health Monitoring	APM
1OE 402	Finite Element Method	APM
1OE 416	Concrete Engineering and Technology	Civil
1OE 417	Computational Methods and Optimization Techniques	Civil
1OE 429	Automobile Engineering	Mechanical
1OE 430	Energy Modeling and Management	Mechanical
1OE 431	Aerospace Engineering	Mechanical
1OE 443	Industrial Automation	Electrical
1OE 457	Cyber Physical Systems	Electronics
1OE 471	Business Intelligence	CSE
1OE 472	Ethical Hacking and Cyber Security	CSE
1OE 485	Data Visualization and Interpretation	IT

Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme from Year 2017-18

Final Year U.G. Program in Mechanical Engineering

II Semester

Course Code	Course	Teaching Scheme				Evaluation Scheme		
						Scheme	Theory	
		L	T	P	Credits		Max Marks	Min for Passing
3IC401	Engineering Management, and Ethics	4	--	--	4	ISE- 1	10	40
						ISE- 2	10	
						MSE	30	
						ESE	50	20
3ME492	Project II	--	--	8*	10	ISE	50	20
						ESE(O.E.)	50	20
3ME493	Skill Based Learning	--	--	1	1	ISE	100	40
Total		4	--	9	15	**Total Credit: 15** **Total Hours: 13**		

*Indicates contact hours per week per project batch of 8-10 students.