

**Walchand College of Engineering, Sangli**

(An Autonomous Institute)



**Curriculum (Structures)**

**for**

**M.Tech. Programme in**

**Mechanical Heat Power Engineering**

**Academic Year 2016-17**



# Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme Effective from 2016-17

First Year M.Tech. Program in Mechanical Engineering

(Specialization: Heat Power Engineering)

## Semester I

Subject Code	Subject	Teaching Scheme				Evaluation Scheme			
		L	T	P	Credits	Component	Marks		
							Max	Min for Passing	
2IC502 (2IC602)	Project Management	2	--	--	2	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2IE5## (2ME7##)	Institute Elective I	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2HP5## (2ME7##)	Professional Elective I	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2HP501 (2ME701)	Advanced Thermodynamics	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2HP502 (2ME702)	Advanced Heat transfer	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2HP503 (2ME703)	Fluid Dynamics	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2HP551 (2ME751)	Thermal Engineering Lab I	--	--	4	2	ISE	50	20	
						ESE (POE)	50	20	
2HP541 (2ME741)	Seminar	--	--	2	1	ISE	100	40	
<b>Total</b>		<b>17</b>	<b>3</b>	<b>6</b>	<b>23</b>	<b>Total Contact Hours/week: 26 hrs</b>			

Professional Elective I	
Course Code	Course Name
2HP511(2ME711)	Design of Heat Exchanger
2HP512(2ME712)	Computational Methods in fluid flow and heat transfer
2HP513(2ME713)	Design of Thermal Turbomachines

*Note: Course code in the bracket indicates pre-revised code*



# Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme Effective from 2016-17

First Year M.Tech. Program in Mechanical Engineering

(Specialization: Heat Power Engineering)

Semester II

Subject Code	Subject	Teaching Scheme				Evaluation Scheme			
		L	T	P	Credits	Component	Marks		
							Max	Min for Passing	
2IC501 (2IC601)	Research Methodology	2	--	--	2	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2IE5## (2ME7##)	Institute Elective II	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2HP5## (2ME7##)	Professional Elective II	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2HP521 (2ME721)	Thermal Systems I	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2HP522 (2ME722)	Thermal Systems II	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2HP523 (2ME723)	Design of Thermal Systems	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2HP552 (2ME771)	Thermal Engineering Lab II	--	--	4	2	ISE	50	20	
						ESE (POE)	50	20	
2HP542 (2ME742)	Mini Project/ Case study	--	--	2	1	ISE	100	40	
<b>Total</b>		17	2	6	22	<b>Total Credit: 22 Total Contact Hours/week: 25 hrs</b>			

Professional Elective II	
Course Code	Course Name
2HP531(2ME731)	Cryogenics
2HP532(2ME732)	Theory and Design of Gas Turbine
2HP533(2ME733)	IC Engine Design

*Note: Course code in the bracket indicates pre-revised code*



# Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme Effective from 2016-17

Second Year M.Tech. Program in Mechanical Engineering

(Specialization: Heat Power Engineering)

Semester III

Course Code	Course	Teaching Scheme			Evaluation Scheme				
		L	T	P	Component	Credits	Practical (Marks )		
							Max	Min for Passing	
2HP691 (2ME781)	Dissertation Phase ISE 1	--	--	5	ISE	4	100	40	
2HP692 (2ME782)	Dissertation Phase ISE 2	--	--		ISE	2	100	40	
2HP693 (2ME782)	Dissertation Phase ESE 1	--	--		ESE	4	100	40	
<b>Total</b>					--	--	5	<b>Total Credit: 10</b> <b>Average Contact hours/week/student: 5 Hrs</b>	

## Semester IV

Course Code	Course	Teaching Scheme			Evaluation Scheme				
		L	T	P	Component	Credits	Practical (Marks )		
							Max	Min for Passing	
2HP694 (2ME783)	Dissertation Phase ISE 3	--	--	5	ISE	5	100	40	
2HP695 (2ME784)	Dissertation Phase ISE 4	--	--		ISE	5	100	40	
2HP696 (2ME784)	Dissertation Phase ESE 2	--	--		ESE	10	100	40	
<b>Total</b>					--	--	5	<b>Total Credit: 20</b> <b>Average Contact hours/week/student: 5 Hrs</b>	

*Note: Course code in the bracket indicates pre-revised code*

**Walchand College of Engineering, Sangli**

(An Autonomous Institute)



**Curriculum (Structures)**

for

**M.Tech. Programme in**

**Mechanical Design Engineering**

**Academic Year 2016-17**



# Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme Effective from 2016-17

First Year M.Tech. Program in Mechanical Engineering

(Specialization: Design Engineering)

Semester I

Subject Code	Subject	Teaching Scheme				Evaluation Scheme			
		L	T	P	Credits	Component	Marks		
							Max	Min for Passing	
2IC502 (2IC602)	Project Management	2	--	--	2	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2IE5## (2ME6##)	Institute Elective I	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2DE5## (2ME6##)	Professional Elective I	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2DE501 (2ME601)	Finite Element Method	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2DE502 (2ME602)	Process equipment design	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2DE503 (2ME603)	Solid Mechanics	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2DE551 (2ME651)	Design Engineering Lab I	--	--	4	2	ISE	50	20	
						ESE (POE)	50	20	
2DE541 (2ME641)	Seminar	--	--	2	1	ISE	100		40
<b>Total</b>		17	3	6	23	<b>Total Credit: 23</b>			<b>Total Contact Hours/week: 26 hrs</b>

Professional Elective I	
Course Code	Course Name
2DE511 (2ME611)	Mechanical Behavior of Materials
2DE512 (2ME612)	Kinematics & Synthesis of Machines
2DE513 (2ME613)	Advanced Mathematics

*Note: Course code in the bracket indicates pre-revised code*



# Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme Effective from 2016-17

First Year M.Tech. Program in Mechanical Engineering

(Specialization: Design Engineering)

Semester II

Subject Code	Subject	Teaching Scheme				Evaluation Scheme			
		L	T	P	Credits	Component	Marks		
							Max	Min for Passing	
2IC501 (2IC601)	Research Methodology	2	--	--	2	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2IE5## (2ME6##)	Institute Elective II	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2DE5## (2ME6##)	Professional Elective II	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2DE521 (2ME631)	Machine Dynamics	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2DE522 (2ME632)	Machine Tool Design	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2DE523 (2ME623)	Design Engineering	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2DE552 (2ME671)	Design Engineering Lab II	--	--	4	2	ISE	50	20	
						ESE (POE)	50	20	
2DE542 (2ME642)	Mini Project / Case study	--	--	2	1	ISE	100	40	
<b>Total</b>		17	2	6	22	<b>Total Credit: 22</b> <b>Total Contact Hours/week: 25 hrs</b>			

Professional Elective II	
Course Code	Course Name
2DE531(2ME631)	Condition Monitoring and noise control of machines
2DE532(2ME632)	Fracture Mechanics
2DE533(2ME633)	Vehicle Dynamics

*Note: Course code in the bracket indicates pre-revised code*



# Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme for Effective from 2016-17

Second Year M.Tech. Program in Mechanical Engineering

(Specialization: Design Engineering)

## Semester III

Course Code	Course	Teaching Scheme			Evaluation Scheme			
		L	T	P	Component	Credits	Practical (Marks )	
							Max	Min for Passing
2DE691 (2ME681)	Dissertation Phase ISE 1	--	--	5	ISE	4	100	40
2DE692 (2ME682)	Dissertation Phase ISE 2	--	--		ISE	2	100	40
2DE693 (2ME682)	Dissertation Phase ESE 1	--	--		ESE	4	100	40
<b>Total</b>		--	--	5	<b>Total Credit: 10</b> <b>Average Contact hours/week/student: 5 Hrs</b>			

## IV Semester

Course Code	Course	Teaching Scheme			Evaluation Scheme			
		L	T	P	Component	Credits	Practical (Marks )	
							Max	Min for Passing
2DE694 (2ME683)	Dissertation Phase ISE 3	--	--	5	ISE	5	100	40
2DE695 (2ME684)	Dissertation Phase ISE 4	--	--		ISE	5	100	40
2DE696 (2ME684)	Dissertation Phase ESE 2	--	--		ESE	10	100	40
<b>Total</b>		--	--	5	<b>Total Credit: 20</b> <b>Average Contact hours/week/student: 5 Hrs</b>			

*Note: Course code in the bracket indicates pre-revised code*



**Walchand College of Engineering, Sangli**

(An Autonomous Institute)



**Curriculum (Structures)**

**for**

**M.Tech. Programme in**

**Mechanical Production Engineering**

**Academic Year 2016-17**



# Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme Effective From 2016-17

First Year M.Tech. Program in Mechanical Engineering

(Specialization: Production Engineering)

Semester I

Subject Code	Subject	Teaching Scheme				Evaluation Scheme			
		L	T	P	Credits	Component	Marks		
							Max	Min for Passing\$	
2IC502 (2IC602)	Project Management	2	--	--	2	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2IE5## (2ME8##)	Institute Elective I	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2PR5## (2ME8##)	Professional Elective I	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2PR501 (2ME801)	Manufacturing Processes	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2PR502 (2ME802)	Industrial Automation and Robotics	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2PR503 (2ME803)	Advanced Welding Technology	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2PR551 (2ME851)	Production Engineering Lab I	--	--	4	2	ISE	50	--	20
						ESE (POE)	50		
2PR541 (2ME841)	Seminar	--	--	2	1	ISE	100	--	40
<b>Total</b>		<b>17</b>	<b>3</b>	<b>6</b>	<b>23</b>	<b>Total Credit: 23 Total Contact Hours/week: 26 hrs</b>			

Professional Elective I	
Course Code	Course Name
2PR511 (2ME811)	Finite Element Method in Manufacturing
2PR512 (2ME812)	Industrial Hydraulics and Pneumatics
2PR513 (2ME813)	Precision Engineering
2PR514 (2ME814)	Flexible Manufacturing System

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# Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme Effective From 2016-17

First Year M.Tech. Program in Mechanical Engineering

(Specialization: Production Engineering)

Semester II

Subject Code	Subject	Teaching Scheme				Evaluation Scheme			
		L	T	P	Credits	Component	Marks		
							Max	Min for Passing	
2IC501 (2IC601)	Research Methodology	2	--	--	2	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2IE5## (2ME8##)	Institute Elective II	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2PR5## (2ME8##)	Professional Elective II	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2PR521 (2ME821)	Micro and Non-conventional Machining	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2PR522 (2ME822)	Quality Engineering for Manufacturing	3	--	--	3	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2PR523 (2ME823)	Mechatronics	3	1	--	4	ISE1	10	20	40
						MSE	30		
						ISE2	10		
						ESE	50		
2PR552 (2ME871)	Production Engineering Lab II	--	--	4	2	ISE	50	20	
						ESE POE	50	20	
2PR542 (2ME842)	Mini Project/ Case study	--	--	2	1	ISE	100		40
<b>Total</b>		17	2	6	22	<b>Total Credit: 22 Total Contact Hours/week: 25 hrs</b>			

Professional Elective II	
Course Code	Course Name
2PR531(2ME831)	CAD/CAM/CNC
2PR532(2ME832)	Rapid Product Development
2PR533(2ME833)	Advanced Tool Design
2PR534(2ME834)	Advanced Materials

*Note: Course code in the bracket indicates pre-revised code*

# Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme Effective From 2016-17

Second Year M.Tech. Program in Mechanical Engineering

(Specialization: Production Engineering)

## Semester III

Course Code	Course	Teaching Scheme			Evaluation Scheme			
		L	T	P	Component	Credits	Practical (Marks )	
							Max	Min for Passing
2PR691 (2ME881)	Dissertation Phase ISE1	--	--	5	ISE	4	100	40
2PR692 (2ME882)	Dissertation Phase ISE 2	--	--		ISE	2	100	40
2PR693 (2ME882)	Dissertation Phase ESE 1	--	--		ESE	4	100	40
Total		--	--	5	Total Credit: 10 Average Contact hours/week/student: 5 Hrs			

## SemesterIV

Course Code	Course	Teaching Scheme			Evaluation Scheme			
		L	T	P	Component	Credits	Practical (Marks )	
							Max	Min for Passing
2PR694 (2ME88)	Dissertation Phase ISE 3	--	--	5	ISE	5	100	40
2PR695 (2ME88)	Dissertation Phase ISE 4	--	--		ISE	5	100	40
2PR696 (2ME88)	Dissertation Phase SES 2	--	--		ESE	10	100	40
Total		--	--	5	Total Credit: 20 Average Contact hours/week/student: 5 Hrs			

*Note: Course code in the bracket indicates pre-revised code*