Walchand College of Engineering

(Government Aided Autonomous Institute)

Vishrambag, Sangli. 416415

***** Platinum Jubilee Year *****

Credit System for
S.Y. M.Tech. (Heat Power Engineering)
Sem-III and IV

2021-22

Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

Credit System for S.Y. M.Tech. (Heat Power Engineering) Sem-III AY 2021-22

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	T1/LA1	T2/LA2	ESE
Professional Core (Theory)												
1	PC	5HP601	Legal, Financial aspects of Industrial Project	2	0	0	0	2	2	20	20	60
Professional Core (Lab)												
2	PR	5HP690	Dissertation Phase 1	0	0	20	0	20	10	30	30	40
3	PC	5HP602	Industry Orientation Course	0	0	0	1	1	1	30	30	40
Professional Elective (Theory)												
4	PE	Refer list	Elective 5	2	0	0	0	2	2	20	20	60
Professional Elective (Lab)												
5	PR	Refer list	Activity Based Elective Lab 2	0	0	2	0	2	1	30	30	40
Value Added Professional Courses # (Listed separately)												
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Value Added Life-Skill Courses # (Listed separately)												
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			Total	**4**	**0**	**22**	**1**	**27**	**16**			

Walchand College of Engineering, Sangli

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Elective Course List for S.Y. M.Tech. (Heat Power Engineering) Sem-III AY 2021-22

Sr.No.	Track	Course Code	Course Name
Activity Based Elective Lab 2			
1	Energy Engineering	5HP651	Design of Solar and Wind System Lab
2	Mathematical Modelling	5HP652	Advance Mathematical Methods in Engineering Lab
3	Food Preservation	5HP653	Food preservation and cold chain management Lab
Elective 5			
1	Energy Engineering	5HP611	Design of Solar and Wind System
2	Mathematical Modelling	5HP612	Advance mathematical methods in Engineering
3	Food Preservation	5HP613	Food preservation and cold chain management

Notes:

For Lab courses: There shall be only internal continuous assessment (LA1, LA2, ESE). LA1 and LA2 together shall be Lab ISE. The ESE is a separate head of passing.
For Theory courses: There shall be two tests (T1 and T2) and one ESE. The ESE is a separate head of passing.

The Value Added Courses are Optional Courses. The mode of teaching (LTPI) is decided by the resource person.
The credits earned from these courses will be shown on grade card. For SGPA and CGPA calculation, these courses will be excluded.
The list of Value added courses will be updated from time to time. The courses may be on paid basis. These courses will be offered as per availability of faculty.

The contact hours of each dissertation with the guide (research supervisor) shall be of one hour per week.

For further details, refer to Academic and Examination rules and regulations.

Walchand College of Engineering, Sangli

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Credit System for S.Y. M.Tech. (Heat Power Engineering) Sem-IV AY 2021-22

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	T1/LA1	T2/LA2	ESE
Professional Core (Theory)												
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Professional Core (Lab)												
1	PR	5HP691	Dissertation Phase 2	0	0	24	0	24	12	30	30	40
2	PR	5HP671	Techno-Socio Activity	0	0	0	1	1	1	30	30	40
Professional Elective (Theory)												
3	PE	Refer list	Elective 6	3	0	0	0	3	3	20	20	60
Value Added Professional Courses # (Listed separately)												
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Value Added Life-Skill Courses # (Listed separately)												
--												
			Total	**3**	**0**	**24**	**1**	**28**	**16**			

Walchand College of Engineering, Sangli

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Elective Course List for S.Y. M.Tech. (Heat Power Engineering) Sem-IV AY 2021-22

Sr.No.	Track	Course Code	Course Name
Elective 6			
1	Energy Engineering	5HP621	Energy Conservation and Management
2	Study and Design of Thermal Systems	5HP622	Design of Thermal Systems
3	Energy Engineering	5HP623	Waste to Energy
4	Mathematical Modelling	5HP624	Advanced Finite Element Method

Notes:

For Lab courses: There shall be only internal continuous assessment (LA1, LA2, ESE). LA1 and LA2 together shall be Lab ISE. The ESE is a separate head of passing.
For Theory courses: There shall be two tests (T1 and T2) and one ESE. The ESE is a separate head of passing.

The Value Added Courses are Optional Courses. The mode of teaching (LTPI) is decided by the resource person.
The credits earned from these courses will be shown on grade card. For SGPA and CGPA calculation, these courses will be excluded.
The list of Value added courses will be updated from time to time. The courses may be on paid basis. These courses will be offered as per availability of faculty.

@ Minimum two AICTE mandatory courses need to be completed for award of degree.

The contact hours of each dissertation with the guide (research supervisor) shall be of one hour per week.

For further details, refer to Academic and Examination rules and regulations.

Walchand College of Engineering, Sangli

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Tracks and Semester-wise Elective Courses for M.Tech. (Heat Power Engineering) AY 2021-22

Sr.No.	Sem	Elective	Course Code	Course Name
Energy Engineering				
1	3	Elective 5	5HP611	Design of Solar and Wind System
2	3	Activity Based Elective I	5HP651	Design of Solar and Wind System Lab
3	4	Elective 6	5HP621	Energy Conservation and Management
4	4	Elective 6	5HP623	Waste to Energy
Food Preservation				
1	3	Elective 5	5HP613	Food preservation and cold chain management
2	3	Activity Based Elective I	5HP653	Food preservation and cold chain management Lab
Heating Ventilation and Air conditioning				
1	1	Elective 2	5HP515	Air-Conditioning System Design
2	2	Elective 4	5HP528	Industrial Air-Conditioning
3	2	Activity Based Elective I	5HP580	Industrial Air-Conditioning Lab
Mathematical Modelling				
1	1	Elective 1	5HP511	Computational Methods in fluid flow and heat transfer
2	2	Elective 4	5HP527	Modelling of Internal Combustion Engines
3	2	Activity Based Elective I	5HP579	Modelling of Internal Combustion Engines Lab
4	3	Elective 5	5HP612	Advance mathematical methods in Engineering
5	3	Activity Based Elective I	5HP652	Advance Mathematical Methods in Engineering Lab
6	4	Elective 6	5HP624	Advanced Finite Element Method

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Walchand College of Engineering, Sangli

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Tracks and Semester-wise Elective Courses for M.Tech. (Heat Power Engineering) AY 2021-22

Sr.No.	Sem	Elective	Course Code	Course Name
Pumps and Turbines				
1	1	Elective 1	5HP513	Design of Thermal Turbo Systems
2	1	Elective 2	5HP516	Gas Turbines
Refrigeration				
1	2	Elective 3	5HP525	Industrial Refrigeration
2	2	Elective 4	5HP526	Cryogenics
3	3	Activity Based Elective I	5HP577	Industrial Refrigeration Lab
4	3	Activity Based Elective I	5HP578	Cryogenics Lab
Study and Design of I. C. Engines				
1	2	Elective 3	5HP523	Internal Combustion Engine Design
2	3	Activity Based Elective I	5HP575	Internal Combustion Engine Design Lab
Study and Design of Thermal Systems				
1	1	Elective 1	5HP512	Nuclear Engineering
2	1	Elective 2	5HP514	Design of Hydro Turbo machines,
3	2	Elective 3	5HP524	Design of Heat Exchangers
4	3	Activity Based Elective I	5HP576	Design of Heat Exchangers Lab
5	4	Elective 6	5HP622	Design of Thermal Systems

List of Professional Core (Theory) Courses for M.Tech. (Heat Power Engineering) AY 2021-22

Sr.No.	Sem	Course Code	Course Name
Professional Core (Theory) Courses			
1	1	5HP501	Thermodynamics and combustion
2	1	5HP502	Advanced Fluid Dynamics
3	2	5HP521	Adavanced Heat Transfer
4	2	5HP522	Steam Engineering
5	3	5HP601	Legal, Financial aspects of Industrial Project

List of Professional Core (Lab) Courses for M.Tech. (Heat Power Engineering) AY 2021-22

Sr.No.	Sem	Course Code	Course Name
Professional Core (Lab) Courses			
1	1	5HP560	Research Methodology
2	1	5HP551	Activity Based Lab for Th course 1
3	1	5HP552	Activity Based Lab for Th course 2
4	1	5HP553	Presentation and Technical Report Writing
5	1	5HP554	Professional Skills 1
6	2	5HP571	Activity Based Lab for Th course 3
7	2	5HP572	Activity Based Lab for Th course 4
8	2	5HP573	Industrial Project
9	2	5HP574	Professional Skills 2
10	3	5HP690	Dissertation Phase 1
11	3	5HP602	Industry Orientation Course
12	4	5HP691	Dissertation Phase 2
13	4	5HP671	Techno-Socio Activity

Walchand College of Engineering, Sangli

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Open Electives offered by M.Tech. (Heat Power Engineering) to other programmes AY 2021-22

Sr.No.	Offering Dept	Sem	Course Code	Course Name
Open Electives Offered				
1	Mech_Heat	2	5OE104	Waste to Energy

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Open Electives available from other programmes to M.Tech. (Heat Power Engineering) AY 2021-22

Sr.No.	Offering Dept	Sem	Course Code	Course Name
Open Electives Available				
1	Civil_Env	2	5OE101	Solid Waste Management
2	Civil_Struct	2	5OE102	Structural Health Monitoring
3	Mech_Prod	2	5OE103	Advanced Production systems
4	Mech_Design	2	5OE105	Industrial Product Design
5	Elect_Power	2	5OE106	Control Techniques for Electrical Drives
6	Elect_Control	2	5OE106	Control Techniques for Electrical Drives
7	Eln	2	5OE108	Introduction to Embedded Systems
8	CSE	2	5OE109	Machine Learning in Practice
9	IT	2	5OE110	Machine Learning & Applications