

Walchand College of Engineering

(Government Aided Autonomous Institute)

Vishrambag, Sangli. 416415



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

**Credit System for
F.Y. M.Tech. (Heat Power Engineering)
Sem-I and II**

2021-22



Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

Credit System for F.Y. M.Tech. (Heat Power Engineering) Sem-I 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 | 5HP501 | Thermodynamics and combustion | 3 | 0 | 0 | 0 | 3 | 3 | 20 | 20 | 60 | |
| 2 | PC | 5HP502 | Advanced Fluid Dynamics | 3 | 0 | 0 | 0 | 3 | 3 | 20 | 20 | 60 | |
| Professional Core (Lab) | | | | | | | | | | | | | |
| 3 | PC | 5HP560 | Research Methodology | 0 | 0 | 0 | 2 | 2 | 2 | 30 | 30 | 40 | |
| 4 | PR | 5HP551 | Activity Based Lab for Th course 1 | 0 | 0 | 2 | 0 | 2 | 1 | 30 | 30 | 40 | |
| 5 | PR | 5HP552 | Activity Based Lab for Th course 2 | 0 | 0 | 2 | 0 | 2 | 1 | 30 | 30 | 40 | |
| 6 | HS | 5HP553 | Presentation and Technical Report Writing | 0 | 0 | 0 | 1 | 1 | 1 | 30 | 30 | 40 | |
| 7 | PC | 5HP554 | Professional Skills 1 | 0 | 0 | 0 | 1 | 1 | 1 | 30 | 30 | 40 | |
| Professional Elective (Theory) | | | | | | | | | | | | | |
| 8 | PE | Refer list | Elective 1 | 3 | 0 | 0 | 0 | 3 | 3 | 20 | 20 | 60 | |
| 9 | PE | Refer list | Elective 2 | 3 | 0 | 0 | 0 | 3 | 3 | 20 | 20 | 60 | |
| AICTE Mandatory Courses @ | | | | | | | | | | | | | |
| 10 | MC | 5IC501 | Value Education | 2 | 0 | 0 | 0 | 2 | 0 | 20 | 20 | 60 | |
| Value Added Professional Courses # (Listed separately) | | | | | | | | | | | | | |
| -- | | | | | | | | | | | | | |
| Value Added Life-Skill Courses # (Listed separately) | | | | | | | | | | | | | |
| -- | | | | | | | | | | | | | |
| Total | | | | 14 | 0 | 4 | 4 | 22 | 18 | | | | |



Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

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

| Sr.No. | Track | Course Code | Course Name |
|-------------------|--|-------------|---|
| Elective 1 | | | |
| 1 | Mathematical Modelling | 5HP511 | Computational Methods in fluid flow and heat transfer |
| 2 | Study and Design of Thermal Systems | 5HP512 | Nuclear Engineering |
| 3 | Pumps and Turbines | 5HP513 | Design of Thermal Turbo Systems |
| Elective 2 | | | |
| 1 | Study and Design of Thermal Systems | 5HP514 | Design of Hydro Turbo machines, |
| 2 | Heating Ventilation and Air conditioning | 5HP515 | Air-Conditioning System Design |
| 3 | Pumps and Turbines | 5HP516 | Gas Turbines |

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.

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



Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

Credit System for F.Y. M.Tech. (Heat Power Engineering) Sem-II 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 | 5HP521 | Advanced Heat Transfer | 3 | 0 | 0 | 0 | 3 | 3 | 20 | 20 | 60 |
| 2 | PC | 5HP522 | Steam Engineering | 3 | 0 | 0 | 0 | 3 | 3 | 20 | 20 | 60 |
| Professional Core (Lab) | | | | | | | | | | | | |
| 3 | PR | 5HP571 | Activity Based Lab for Th course 3 | 0 | 0 | 2 | 0 | 2 | 1 | 30 | 30 | 40 |
| 4 | PR | 5HP572 | Activity Based Lab for Th course 4 | 0 | 0 | 2 | 0 | 2 | 1 | 30 | 30 | 40 |
| 5 | PR | 5HP573 | Industrial Project | 0 | 0 | 0 | 2 | 2 | 2 | 30 | 30 | 40 |
| 6 | PC | 5HP574 | Professional Skills 2 | 0 | 0 | 0 | 1 | 1 | 1 | 30 | 30 | 40 |
| Professional Elective (Theory) | | | | | | | | | | | | |
| 7 | PE | Refer list | Elective 3 | 2 | 0 | 0 | 0 | 2 | 2 | 20 | 20 | 60 |
| 8 | PE | Refer list | Elective 4 | 2 | 0 | 0 | 0 | 2 | 2 | 20 | 20 | 60 |
| Professional Elective (Lab) | | | | | | | | | | | | |
| 9 | PR | Refer list | Activity Based Elective Lab 1 | 0 | 0 | 2 | 0 | 2 | 1 | 30 | 30 | 40 |
| Open Elective | | | | | | | | | | | | |
| 10 | OE | Refer list | Open Elective | 2 | 0 | 0 | 0 | 2 | 2 | 20 | 20 | 60 |
| AICTE Mandatory Courses @ | | | | | | | | | | | | |
| 11 | MC | 5IC502 | Constitution of India | 2 | 0 | 0 | 0 | 2 | 0 | 20 | 20 | 60 |
| Value Added Professional Courses # (Listed separately) | | | | | | | | | | | | |
| -- | | | | | | | | | | | | |
| Value Added Life-Skill Courses # (Listed separately) | | | | | | | | | | | | |
| -- | | | | | | | | | | | | |
| Total | | | | 14 | 0 | 6 | 3 | 23 | 18 | | | |



Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

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

| Sr.No. | Track | Course Code | Course Name |
|--------------------------------------|--|-------------|--|
| Activity Based Elective Lab 1 | | | |
| 1 | Study and Design of I. C. Engines | 5HP575 | Internal Combustion Engine Design Lab |
| 2 | Study and Design of Thermal Systems | 5HP576 | Design of Heat Exchangers Lab |
| 3 | Refrigeration | 5HP577 | Industrial Refrigeration Lab |
| 4 | Refrigeration | 5HP578 | Cryogenics Lab |
| 5 | Mathematical Modelling | 5HP579 | Modelling of Internal Combustion Engines Lab |
| 6 | Heating Ventilation and Air conditioning | 5HP580 | Industrial Air-Conditioning Lab |
| Elective 3 | | | |
| 1 | Study and Design of I. C. Engines | 5HP523 | Internal Combustion Engine Design |
| 2 | Study and Design of Thermal Systems | 5HP524 | Design of Heat Exchangers |
| 3 | Refrigeration | 5HP525 | Industrial Refrigeration |
| Elective 4 | | | |
| 1 | Refrigeration | 5HP526 | Cryogenics |
| 2 | Mathematical Modelling | 5HP527 | Modelling of Internal Combustion Engines |
| 3 | Heating Ventilation and Air conditioning | 5HP528 | Industrial Air-Conditioning |



Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

Open Elective Course List for F.Y. M.Tech. (Heat Power Engineering) Sem-II AY 2021-22

| Sr.No. | Offering Dept | Sem | Course Code | Course Name |
|------------------------|---------------|-----|-------------|--|
| Open Elective 1 | | | | |
| 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 |

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.

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