

Walchand College of Engineering

(Government Aided Autonomous Institute)

Vishrambag, Sangli-416415



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

2023-24



Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

Credit System for F. Y. M. Tech. Mechanical (Heat Power Engineering) Sem-I AY 2023-24

| Sr.No. | Category | Course Code | Course Name | L | T | P | I | Hrs | Cr | MSE/LA1 | ISE/LA2 | ESE | Remark | |
|---------------------------------------|----------|-------------|-----------------------------------|-----------|----------|----------|----------|-----------|-----------|---------|---------|-----|--------|--|
| Professional Core (Theory) | | | | | | | | | | | | | | |
| 1 | PC | 7IC501 | Research Methodology and IPR | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | | |
| 2 | PC | 7HP501 | Thermodynamics and Combustion | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | | |
| 3 | PC | 7HP502 | Advanced Fluid Dynamics | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | | |
| 4 | PC | 7HP503 | Advanced Heat Transfer | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | | |
| Professional Core (Lab) | | | | | | | | | | | | | | |
| 5 | PC | 7HP551 | Thermodynamics and Combustion Lab | 0 | 0 | 2 | 0 | 2 | 1 | 30 | 30 | 40 | | |
| 6 | PC | 7HP552 | Advanced Fluid Dynamics Lab | 0 | 0 | 2 | 0 | 2 | 1 | 30 | 30 | 40 | | |
| 7 | PC | 7HP553 | Advanced Heat Transfer Lab | 0 | 0 | 2 | 0 | 2 | 1 | 30 | 30 | 40 | | |
| Professional Elective (Theory) | | | | | | | | | | | | | | |
| 8 | PE | Refer List | Professional Elective 1 | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | | |
| 9 | PE | Refer List | Professional Elective 2 | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | | |
| Total | | | | 18 | 0 | 6 | 0 | 24 | 21 | | | | | |

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Walchand College of Engineering, Sangli

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Professional Elective Course List for F. Y. M. Tech. Mechanical (Heat Power Engineering) Sem-I AY 2023-24

| Sr.No. | Track | Course Code | Course Name |
|--------------------------------|--|-------------|---------------------------------|
| Professional Elective 1 | | | |
| 1 | Study and Design of Thermal Systems | 7HP511 | Nuclear Engineering |
| 2 | Pumps and Turbines | 7HP512 | Design of Thermo Turbo Systems |
| 3 | Pumps and Turbines | 7HP513 | Gas Turbines |
| Professional Elective 2 | | | |
| 1 | Study and Design of Thermal Systems | 7HP514 | Design of Hydro Turbo Systems |
| 2 | Heating Ventilation and Air Conditioning | 7HP515 | Air Conditioning System Design |
| 3 | Energy Engineering | 7HP516 | Design of Solar and Wind System |

Notes:

For Theory courses: There shall be MSE, ISE and ESE. The ESE is a separate head of passing.

For Lab courses: There shall be continuous assessment (LA1, LA2, ESE). The ESE is a separate head of passing.

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


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Walchand College of Engineering, Sangli
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Credit System for F. Y. M. Tech. Mechanical (Heat Power Engineering) Sem-II AY 2023-24

| Sr.No. | Category | Course Code | Course Name | L | T | P | I | Hrs | Cr | MSE/LA1 | ISE/LA2 | ESE | Remark |
|---------------------------------------|----------|-------------|--|--------------|-----------|----------|----------|----------|-----------|-----------|---------|-----|--------|
| Professional Core (Theory) | | | | | | | | | | | | | |
| 1 | PC | 7HP521 | Advanced Steam Engineering | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | |
| 2 | PC | 7HP522 | Computational Techniques in Fluid Flow and Heat Transfer | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | |
| 3 | PC | 7HP523 | Internal Combustion Engine Design | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | |
| Professional Core (Lab) | | | | | | | | | | | | | |
| 3 | PC | 7HP571 | Advanced Steam Engineering Lab | 0 | 0 | 2 | 0 | 2 | 1 | 30 | 30 | 40 | |
| 4 | PC | 7HP572 | CFD Lab | 0 | 0 | 2 | 0 | 2 | 1 | 30 | 30 | 40 | |
| 5 | PR | 7HP545 | Seminar | 0 | 0 | 2 | 0 | 2 | 1 | 30 | 30 | 40 | |
| Professional Elective (Theory) | | | | | | | | | | | | | |
| 6 | PE | Refer List | Professional Elective 3 | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | |
| 7 | PE | Refer List | Professional Elective 4 | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | |
| Open Elective | | | | | | | | | | | | | |
| 8 | OE | Refer List | Open Elective | 3 | 0 | 0 | 0 | 3 | 3 | 30 | 20 | 50 | |
| | | | | Total | 18 | 0 | 6 | 0 | 24 | 21 | | | |

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Walchand College of Engineering, Sangli

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Professional Elective Course List for F. Y. M. Tech. Mechanical (Heat Power Engineering) Sem-II AY 2023-24

| Sr.No. | Track | Course Code | Course Name |
|--------------------------------|--|-------------|---|
| Professional Elective 3 | | | |
| 1 | Study and Design of Thermal Systems | 7HP531 | Design of Heat Exchanger |
| 2 | Refrigeration | 7HP532 | Industrial Refrigeration |
| 3 | Food Preservation | 7HP533 | Food preservation and cold chain management |
| Professional Elective 4 | | | |
| 1 | Refrigeration | 7HP534 | Cryogenics |
| 2 | Heating Ventilation and Air Conditioning | 7HP535 | Industrial Air Conditioning |
| 3 | Energy Engineering | 7HP536 | Energy Conservation and Management |

Open Elective Course List for F. Y. M. Tech. Mechanical (Heat Power Engineering) Sem-II AY 2023-24

| Sr.No. | Offering Programme | Course Code | Course Name |
|--------|--------------------------|-------------|--|
| 1 | Environmental Engg. | 7OE501 | Solid Waste Management |
| 2 | Structural Engg. | 7OE502 | Structural Health Monitoring |
| 3 | Design Engg. | 7OE503 | Industrial Product Design |
| 4 | Heat Power Engg.* | 7OE504 | Waste to Energy |
| 5 | Production Engg. | 7OE505 | Advanced Production systems |
| 6 | Power System Engg. | 7OE506 | Control Techniques for Electrical Drives |
| 7 | Control System Engg. | 7OE506 | Control Techniques for Electrical Drives |
| 8 | Electronics Engg. | 7OE508 | Introduction to Embedded Systems |
| 9 | Computer Science & Engg. | 7OE509 | Machine Learning in Practice |
| 10 | Information Technology | 7OE510 | Machine Learning & Applications |

Notes:

*Open Elective offered by Mech. (Heat Power Engineering) Programme is allowed for students of all other Programmes (Except of Design Engg., Heat Power Engg. and Production Engg. Programme)

For Theory courses: There shall be MSE, ISE and ESE. The ESE is a separate head of passing.

For Lab courses: There shall be continuous assessment (LA1, LA2, ESE). The ESE is a separate head of passing.

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

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