



**PERIYAR
MANIAMMAI**
INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University)
Established Under Sec. 3 of UGC Act, 1956 • NAAC Accredited
think • innovate • transform

Criterion 1 – Curricular Aspects

| | | |
|----------------------|-------|---|
| Key Indicator | 1.2 | Academic Flexibility |
| Metric | 1.2.2 | Percentage of Programmes in which Choice Based Credit System (CBCS)/elective course system has been implemented (Data for the latest completed academic year) |

DEPARTMENT OF MECHANICAL ENGINEERING STRUCTURE OF THE PROGRAM CLEARLY INDICATING COURSES, CREDITS/ELECTIVES

Programmes

1. B.Tech Mechanical Engineering – Full Time
2. B.Tech Mechanical Engineering – Part Time
3. M,Tech Renewable Energy – Full time.
4. M,Tech Renewable Energy – Part Time.

1. B.TECH MECHANICAL ENGINEERING -(FULL TIME)**SEMESTER-WISE STRUCTURE OF CURRICULUM****REGULATIONS – 2018**

(Applicable to the students admitted from the Academic year 2018-19 onwards)

SEMESTER I

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|--------------|----------------------------|---------------------------------|----------------|---|---|-----------|
| | | | L | T | P | |
| XMA101 | Basic Science course | Calculus and Linear Algebra | 3 | 1 | 0 | 4 |
| XCP102 | Engineering Science course | Programming for Problem Solving | 3 | 0 | 4 | 5 |
| XGS103 | Humanities courses | English | 2 | 0 | 2 | 3 |
| XAC104 | Basic Science course | Applied Chemistry for Engineers | 3 | 1 | 2 | 5 |
| XWP105 | Engineering Science course | Workshop Practices | 2 | 0 | 2 | 3 |
| TOTAL | | | | | | 20 |

SEMESTER II

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|-----------|----------------------------|--|----------------|---|---|---|
| | | | L | T | P | |
| XMA201 | Basic Science course | Calculus, Ordinary Differential Equations and Complex Variable | 3 | 1 | 0 | 4 |
| XES202 | Mandatory Courses | Environmental Sciences | 3 | 0 | 0 | 0 |
| XBE203 | Engineering Science course | Electrical and Electronic Engineering Systems | 3 | 2 | 2 | 5 |
| XAP204 | Basic Science course | Applied Physics for Engineers | 3 | 1 | 4 | 6 |
| XEG205 | Engineering Science course | Engineering Graphics | 2 | 0 | 2 | 3 |

| | | | | | |
|--|--------------|--|--|--|-----------|
| | TOTAL | | | | 18 |
|--|--------------|--|--|--|-----------|

SEMESTER III

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|-----------|-----------------------------|--------------------------------|----------------|---|---|-----------|
| | | | L | T | P | |
| XME301 | Basic Science Courses | PDE, Probability & Statistics | 3 | 1 | 0 | 4 |
| XME302 | Professional Core courses | Thermodynamics | 3 | 1 | 0 | 4 |
| XME303 | Professional Core courses | Strength of Materials | 3 | 1 | 0 | 4 |
| XEM304 | Engineering Science courses | Engineering Mechanics | 3 | 1 | 0 | 4 |
| XUM305 | HSMC | Entrepreneurship Development | 3 | 0 | 0 | 3 |
| XME306 | Professional Core courses | Manufacturing Processes | 3 | 0 | 0 | 3 |
| XME307 | Project (Summer internship) | Inplant Training – I (15 days) | 0 | 0 | 2 | 0 |
| | TOTAL | | | | | 22 |

SEMESTER IV

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|-----------|-----------------------------|--|----------------|---|---|-----------|
| | | | L | T | P | |
| XME401 | Professional Core courses | Applied Thermodynamics | 3 | 1 | 0 | 4 |
| XME402 | Professional Core courses | Solid Mechanics | 3 | 1 | 0 | 4 |
| XUM403 | Mandatory courses | Human Ethics, Values, Rights and Gender Equality | 3 | 0 | 0 | 0 |
| XME404 | Professional Core courses | Fluid Mechanics & Fluid Machines | 3 | 1 | 0 | 4 |
| XME405 | Engineering Science courses | Materials Engineering | 3 | 0 | 0 | 3 |
| XME406 | Professional Core courses | Instrumentation & Control | 3 | 1 | 0 | 4 |
| | TOTAL | | | | | 19 |

SEMESTER V

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|--------------|-----------------------------|---|----------------|---|---|-----------|
| | | | L | T | P | |
| XME501 | Humanities courses | Operation Research | 3 | 1 | 0 | 4 |
| XME502 | Professional Core courses | Heat Transfer | 3 | 1 | 0 | 4 |
| XME503 | Professional Core courses | Automobile Engineering | 3 | 0 | 0 | 3 |
| XME504 | Professional Core courses | CAD/CAM | 3 | 0 | 0 | 3 |
| XME505 | Professional Core courses | Kinematics & Theory of Machines | 3 | 1 | 0 | 4 |
| XUM506 | Mandatory course | Constitution of India | 2 | 0 | 0 | 0 |
| XME507 | Professional Core courses | Mechanical Engineering Laboratory I (Thermal) | 0 | 0 | 4 | 2 |
| XME508 | Project (Summer internship) | Inplant Training – II (21 days) | 0 | 0 | 2 | 0 |
| XMEM01 | Minor Course | CNC Programming for Lathe Operations | 0 | 0 | 2 | 0 |
| TOTAL | | | | | | 20 |

SEMESTER VI

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|--------------|--------------------------------|---|----------------|---|---|-----------|
| | | | L | T | P | |
| XUM601 | Humanities and Social Sciences | Economics for Engineers | 3 | 0 | 0 | 3 |
| XME602 | Professional Core courses | Manufacturing Technology | 4 | 0 | 0 | 4 |
| XME603 | Professional Core courses | Design of Machine Elements | 3 | 1 | 0 | 4 |
| XME604 | Professional Elective courses | Elective-I | 3 | 0 | 0 | 3 |
| XME605 | Professional Elective courses | Elective-II | 3 | 0 | 0 | 3 |
| XME606 | Professional Core courses | Mechanical Engineering Laboratory II (Design) | 0 | 0 | 4 | 2 |
| XMEM02 | Minor Course | Pneumatics and Hydraulics | 0 | 0 | 2 | 0 |
| TOTAL | | | | | | 19 |

SEMESTER VII

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|--------------|-------------------------------|--|----------------|---|---|-----------|
| | | | L | T | P | |
| XOE1 | Open Elective Courses | Open Elective-I | 3 | 0 | 0 | 3 |
| XME702 | Professional Core courses | Automation in Manufacturing | 3 | 0 | 0 | 3 |
| XME703 | Professional Elective Courses | Elective III | 3 | 0 | 0 | 3 |
| XME704 | Professional Elective Courses | Elective-IV | 3 | 0 | 0 | 3 |
| XME705 | Professional Elective Courses | Elective V | 3 | 0 | 0 | 3 |
| XUM706 | UGC- MC | Cyber Security | 3 | 0 | 0 | 0 |
| XME707 | Professional Core courses | Mechanical Engineering Laboratory III (Manufacturing) | 0 | 0 | 4 | 2 |
| XME708 | Project | Project phase – I | 0 | 0 | 8 | 4 |
| XME709 | Project (Summer internship) | Implant Training – III (30 days) | 0 | 0 | 4 | 2 |
| XMEM03 | Minor Course | Non Destructive Testing | 0 | 0 | 2 | 0 |
| TOTAL | | | | | | 23 |

SEMESTER VIII

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|-----------|-------------------------------|--------------------|----------------|---|---|---|
| | | | L | T | P | |
| XOE2 | Open Elective Courses | Open Elective-II | 3 | 0 | 0 | 3 |
| XOE3 | Open Elective Courses | Open Elective-III | 3 | 0 | 0 | 3 |
| XME803 | Professional Elective Courses | Elective VI | 3 | 0 | 0 | 3 |

| | | | | | | |
|--------|---------|--------------------|---|---|----|-----------|
| XME804 | Project | Project phase – II | 0 | 0 | 12 | 6 |
| | | TOTAL | | | | 15 |

TOTAL CREDITS – 156

| OPEN ELECTIVE COURSES | | | | | | |
|--|---|----------------|----------|----------|----------|--|
| (OPEN ELECTIVES OFFERED BY MECHANICAL ENGINEERING DEPARTMENT) | | | | | | |
| CODE. No | Course Title | Credits | | | | |
| | | L | T | P | C | |
| XMEOE1 | Product Design and Development | 3 | 0 | 0 | 3 | |
| XMEOE2 | Renewable Energy Sources | 3 | 0 | 0 | 3 | |
| XMEOE3 | Microelectromechanical Systems | 3 | 0 | 0 | 3 | |
| ; | | | | | | |
| PROFESSIONAL ELECTIVE COURSES LIST | | | | | | |
| Code No | Course Title | Credits | | | | |
| | | L | T | P | C | |
| TRACK – I (Thermal Stream) | | | | | | |
| XMEE01 | Gas Dynamics and Shock Waves | 3 | 0 | 0 | 3 | |
| XMEE02 | Power Plant Engineering | 3 | 0 | 0 | 3 | |
| XMEE03 | Refrigeration and Air conditioning | 3 | 0 | 0 | 3 | |
| XMEE04 | Renewable Energy Sources | 3 | 0 | 0 | 3 | |
| XMEE05 | Advanced I.C Engines | 3 | 0 | 0 | 3 | |
| XMEE06 | Energy Conservation and Management | 3 | 0 | 0 | 3 | |
| Code No | Course Title | Credits | | | | |
| | | L | T | P | C | |
| TRACK – II (Design Stream) | | | | | | |
| XMEE07 | Finite Element Analysis | 3 | 0 | 0 | 3 | |
| XMEE08 | Design of Transmission Systems | 3 | 0 | 0 | 3 | |
| XMEE09 | Mechanical Vibrations | 3 | 0 | 0 | 3 | |
| XMEE10 | Computational Fluid Dynamics | 3 | 0 | 0 | 3 | |
| XMEE11 | Machine Drawing | 3 | 0 | 0 | 3 | |
| XMEE12 | Design of Jigs and Fixtures and press tools | 3 | 0 | 0 | 3 | |
| XMEE13 | Mathematical Modeling and Analysis | 3 | 0 | 0 | 3 | |

| XMEE14 | Computer Aided Design | 3 | 0 | 0 | 3 |
|---|---|---------|---|---|---|
| Code No | Course Title | Credits | | | |
| | | L | T | P | C |
| TRACK – III (Manufacturing Stream) | | | | | |
| XMEE15 | Unconventional Manufacturing Technology | 3 | 0 | 0 | 3 |
| XMEE16 | Microelectromechanical Systems | 3 | 0 | 0 | 3 |
| XMEE17 | Industrial Safety | 3 | 0 | 0 | 3 |
| XMEE18 | Industrial Robotics | 3 | 0 | 0 | 3 |
| XMEE19 | Total Quality Management | 3 | 0 | 0 | 3 |
| XMEE20 | Product Design and Development | 3 | 0 | 0 | 3 |
| XMEE21 | Computer Integrated Manufacturing | 3 | 0 | 0 | 3 |
| XMEE22 | Process Planning and Cost Estimation | 3 | 0 | 0 | 3 |
| XMEE23 | Composite Materials | 3 | 0 | 0 | 3 |
| XMEE24 | Automotive Electronics | 3 | 0 | 0 | 3 |
| XMEE25 | Reliability Engineering | 3 | 0 | 0 | 3 |

MINOR COURSES

| Code No | Course Title | Credits | | | |
|---------|--------------------------------------|---------|---|---|---|
| | | L | T | P | C |
| XMEM01 | CNC Programming for Lathe Operations | 0 | 0 | 2 | 0 |
| XMEM02 | Pneumatics and Hydraulics | 0 | 0 | 2 | 0 |
| XMEM03 | Non Destructive Testing | 0 | 0 | 2 | 0 |

2. B.TECH MECHANICAL ENGINEERING -(PART TIME)

SEMESTER-WISE STRUCTURE OF CURRICULUM

B.TECH PART TIME PROGRAMME

REGULATIONS – 2018

(Applicable to the students admitted from the Academic year 2018-19)

SEMESTER I

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|--------------|-----------------------------|---|----------------|---|---|-----------|
| | | | L | T | P | |
| PMA101 | Basic Science course | Mathematics –I (Calculus & Linear Algebra) | 3 | 1 | 0 | 4 |
| PEM102 | Engineering Science courses | Engineering Mechanics | 3 | 1 | 0 | 4 |
| PME103 | Professional Core courses | Materials Engineering | 3 | 0 | 0 | 3 |
| PME104 | | Thermodynamics | 3 | 1 | 0 | 4 |
| PUM105* | Mandatory Courses* | Environmental Science | - | - | - | 0 |
| TOTAL | | | | | | 15 |

*Self study

SEMESTER II

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|--------------|---------------------------|--|----------------|---|---|-----------|
| | | | L | T | P | |
| PMA201 | Basic Science course | Mathematics –II (ODE& Complex Variables) | 3 | 1 | 0 | 4 |
| PME202 | Professional Core courses | Applied Thermodynamics | 3 | 1 | 0 | 4 |
| PME203 | | Fluid Mechanics & Fluid Machines | 3 | 1 | 0 | 4 |
| PME204 | | Manufacturing Processes | 3 | 0 | 0 | 3 |
| PUM205* | Mandatory courses* | Constitution of India | - | - | - | 0 |
| TOTAL | | | | | | 15 |

*Self study

SEMESTER III

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|--------------|---------------------------|---|----------------|---|---|-------------|
| | | | L | T | P | |
| PMA301 | Basic Science Courses | Mathematics III (PDE, Probability & Statistics) | 3 | 1 | 0 | 4 |
| PME302 | Professional Core Courses | Heat Transfer | 3 | 1 | 0 | 4 |
| PME303 | | Strength of Materials | 3 | 1 | 0 | 4 |
| PME304 | | Mechanical Engineering Laboratory (Thermal) I | 0 | 0 | 3 | 1.5 |
| PUM305* | Mandatory course | Essence of Indian Traditional Knowledge | 0 | 0 | 0 | 0 |
| TOTAL | | | | | | 13.5 |

*Self study

SEMESTER IV

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|--------------|---------------------------|--|----------------|---|---|-------------|
| | | | L | T | P | |
| PME401 | Professional Core courses | Instrumentation & Control | 3 | 1 | 0 | 4 |
| PME402 | | Kinematics & Theory of Machines | 3 | 1 | 0 | 4 |
| PME403 | | Solid Mechanics | 3 | 1 | 0 | 4 |
| PME404 | | Mechanical Engineering Laboratory (Design)II | 0 | 0 | 3 | 1.5 |
| PUM405* | Humanities courses | Professional ethics and human values | 3 | 0 | 0 | 3 |
| TOTAL | | | | | | 16.5 |

*Self study

SEMESTER V

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|--------------|-------------------------------|----------------------------|----------------|---|---|-----------|
| | | | L | T | P | |
| PME501 | Professional Core courses | Manufacturing Technology | 4 | 0 | 0 | 4 |
| PME502 | | Design of Machine Elements | 3 | 1 | 0 | 4 |
| PME503 | Professional Elective courses | Elective-I | 3 | 0 | 0 | 3 |
| PME504 | | Elective-II | 3 | 0 | 0 | 3 |
| PUM505* | Humanities courses | English | 3 | 0 | 0 | 3 |
| TOTAL | | | | | | 17 |

*Self study

SEMESTER VI

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|--------------|--------------------------------|---|----------------|---|---|-------------|
| | | | L | T | P | |
| PME601 | Professional Core courses | Automation in Manufacturing | 3 | 0 | 0 | 3 |
| PME602 | Professional Elective courses | Elective III | 3 | 0 | 0 | 3 |
| PME603 | | Elective-IV | 3 | 0 | 0 | 3 |
| PME604 | Professional Core courses | Mechanical Engineering Laboratory III (Manufacturing) | 0 | 0 | 3 | 1.5 |
| PUM605 | Humanities and Social Sciences | Open Elective-III – Operations Research | 3 | 0 | 0 | 3 |
| TOTAL | | | | | | 13.5 |

SEMESTER VII

| Sub. Code | Category | Name of the Course | Hours per week | | | C |
|--------------|-------------------------------|--------------------|----------------|---|----|----------|
| | | | L | T | P | |
| PME701 | Professional Elective courses | Elective V | 3 | 0 | 0 | 3 |
| PME702 | Project | Project Work | 0 | 0 | 12 | 6 |
| TOTAL | | | | | | 9 |

TOTAL CREDITS – 99.5

LIST OF ELECTIVES

ELECTIVE I

| | | L | T | P | C |
|------------------------|----------------------------------|----------|----------|----------|----------|
| * Elective Code | Course Title | | | | |
| PME503A | Refrigeration & Air conditioning | 3 | 0 | 0 | 3 |
| PME503B | Fluid Power Engineering | 3 | 0 | 0 | 3 |
| PME503C | Energy Conversion Systems | 3 | 0 | 0 | 3 |
| PME503D | Metrology and Measurements | 3 | 0 | 0 | 3 |

ELECTIVE II

| | | L | T | P | C |
|------------------------|---------------------|----------|----------|----------|----------|
| * Elective Code | Course Title | | | | |
| PME504A | Nano Technology | 3 | 0 | 0 | 3 |
| PME504B | CAD/CAM | 3 | 0 | 0 | 3 |
| PME504C | Tribology | 3 | 0 | 0 | 3 |
| PME504D | Thermal Engineering | 3 | 0 | 0 | 3 |

ELECTIVE III

| | | L | T | P | C |
|------------------------|---------------------------------------|----------|----------|----------|----------|
| * Elective Code | Course Title | | | | |
| PME602A | Automobile Engineering | 3 | 0 | 0 | 3 |
| PME602B | Computational Fluid Dynamics | 3 | 0 | 0 | 3 |
| PME602C | Finite Element Analysis | 3 | 0 | 0 | 3 |
| PME602D | Optimum Utilization of Heat and Power | 3 | 0 | 0 | 3 |

ELECTIVE IV

| | | L | T | P | C |
|------------------------|---------------------|----------|----------|----------|----------|
| * Elective Code | Course Title | | | | |

| | | | | | |
|---------|---|---|---|---|---|
| | Automation and Control Engineering | 3 | 0 | 0 | 3 |
| PME603A | | | | | |
| | Modern Manufacturing Technology- JIT, AMT | 3 | 0 | 0 | 3 |
| PME603B | | | | | |
| | Reliability Engineering | 3 | 0 | 0 | 3 |
| PME603C | | | | | |
| | Advanced I.C Engines | 3 | 0 | 0 | 3 |
| PME603D | | | | | |

ELECTIVE V

| | | L | T | P | C |
|------------------------|---|---|---|---|---|
| * Elective Code | Course Title | | | | |
| PME701A | Power Plant Engineering | 3 | 0 | 0 | 3 |
| PME701B | | 3 | 0 | 0 | 3 |
| | Mathematical Modeling and simulation-MATLAB | | | | |
| PME701C | Engineering Economics & Cost analysis | 3 | 0 | 0 | 3 |
| PME701D | Materials Management & Industrial Engineering | 3 | 0 | 0 | 3 |

3.M.TECH RENEWABLE ENERGY (FULL TIME)

CURRICULUM – FULL TIME

REGULATIONS – 2019

(Applicable to the students admitted from the Academic year 2019-20)

SEMESTER I

| Code No. | Course Title | L | T | P | C | HRS |
|----------|--|---|---|---|---|-----|
| YRE101 | Solar Energy Systems | 3 | 0 | 0 | 3 | 3 |
| YRE102 | Wind energy, Tidal energy and OTEC | 3 | 0 | 0 | 3 | 3 |
| YRE103 | Process Modelling and Simulation in Energy Systems | 3 | 0 | 0 | 3 | 3 |

| | | | | | | |
|---------------------|---|-----------|----------|----------|-----------|-----------|
| YRE104*** | Elective – I | 3 | 0 | 0 | 3 | 3 |
| YRE105*** | Elective – II | 3 | 0 | 0 | 3 | 3 |
| YRE106 | Solar Energy Lab | 0 | 0 | 1 | 1 | 2 |
| YRM107*-(MC) | Research Methodology and IPR | 2 | 0 | 0 | 0 | 2 |
| YEGOE1**-(MC-Audit) | Audit courses (Student's Choice)- English for Research Paper Writing | 2 | 0 | 0 | 0 | 2 |
| YRE109 | MAT and SCI Lab | 0 | 0 | 1 | 1 | 2 |
| Total | | 19 | 0 | 2 | 17 | 23 |

SEMESTER II

| Code No. | Course Title | L | T | P | C | HRS |
|---------------------|--|-----------|----------|----------|-----------|-----------|
| YRE201 | Bio Energy Systems | 3 | 0 | 0 | 3 | 3 |
| YRE202 | Computational Fluid Dynamics | 3 | 0 | 0 | 3 | 3 |
| YRE203 | Electrical Energy Technology | 3 | 0 | 0 | 3 | 3 |
| YRE204*** | Elective – III | 3 | 0 | 0 | 3 | 3 |
| YRE205*** | Elective – IV | 3 | 0 | 0 | 3 | 3 |
| YRE206 | Bio Energy and CFD Lab | 0 | 0 | 1 | 1 | 2 |
| YRE207 | Mini Project | 0 | 0 | 2 | 2 | 4 |
| YPSOE1** (MC-Audit) | Audit courses (Student's Choice)- Constitution of India | 2 | 0 | 0 | 0 | 2 |
| Total | | 17 | 0 | 3 | 18 | 23 |

SEMESTER III

| Code No. | Course Title | L | T | P | C | HRS |
|--------------|--|----------|----------|-----------|-----------|-----------|
| YRE301 | Project Phase – I | 0 | 0 | 10 | 10 | 20 |
| YRE302*** | Elective - V | 3 | 0 | 0 | 3 | 3 |
| YREOE**** | Open Elective Course(Student's Choice) | 3 | 0 | 0 | 3 | 3 |
| Total | | 6 | 0 | 10 | 16 | 26 |

SEMESTER IV

| Code No. | Course Title | L | T | P | C | HRS |
|--------------|--------------------|----------|----------|-----------|-----------|-----------|
| YRE401 | Project Phase – II | 0 | 0 | 16 | 16 | 32 |
| Total | | 0 | 0 | 16 | 16 | 32 |

Total Credits - 67

* - Mandatory Course

** - Mandatory Course - Audit

*** - Elective Course

**** - Open Elective Course

Mandatory Courses – Audit ()**

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills.

LIST OF ELECTIVES (*)**

ELECTIVE GROUP - I:

| Code No. | Course Title | L | T | P | C | HRS |
|----------|----------------------------------|---|---|---|---|-----|
| YRE104A | Fluid Dynamics and Heat Transfer | 3 | 0 | 0 | 3 | 3 |
| YRE104B | Energy Conservation in HVAC | 3 | 0 | 0 | 3 | 3 |
| YRE104C | Fuels and Combustion Technology | 3 | 0 | 0 | 3 | 3 |

ELECTIVE GROUP - II:

| Code No. | Course Title | L | T | P | C | HRS |
|----------|--------------------------------------|---|---|---|---|-----|
| YRE105A | Environmental Engineering | 3 | 0 | 0 | 3 | 3 |
| YRE105B | Carbon Sequestration And Trading | 3 | 0 | 0 | 3 | 3 |
| YRE105C | Waste Management and Energy Recovery | 3 | 0 | 0 | 3 | 3 |

ELECTIVE GROUP - III:

| Code No. | Course Title | L | T | P | C | HRS |
|----------|---------------------------------------|---|---|---|---|-----|
| YRE204A | Optimum Utilization of Heat and Power | 3 | 0 | 0 | 3 | 3 |
| YRE204B | Statistical Tools for a Data analysis | 3 | 0 | 0 | 3 | 3 |
| YRE204C | Sustainable Development | 3 | 0 | 0 | 3 | 3 |

ELECTIVE GROUP - IV:

| Code No. | Course Title | L | T | P | C | HRS |
|----------|---|---|---|---|---|-----|
| YRE205A | Instrumentation Technology for Energy Systems | 3 | 0 | 0 | 3 | 3 |

| | | | | | | |
|---------|---|---|---|---|---|---|
| YRE205B | Hydrogen and Nuclear energy | 3 | 0 | 0 | 3 | 3 |
| YRE205C | Energy Modeling, Economics and Project Management | 3 | 0 | 0 | 3 | 3 |

ELECTIVE GROUP - V:

| Code No. | Course Title | L | T | P | C | HRS |
|----------|--|---|---|---|---|-----|
| YRE302A | Energy Audit and Management | 3 | 0 | 0 | 3 | 3 |
| YRE302B | Unit Operations in Industries | 3 | 0 | 0 | 3 | 3 |
| YRE302C | CAD/CAM and Simulation of Renewable Energy Systems | 3 | 0 | 0 | 3 | 3 |

LIST OF OPEN ELECTIVE COURSES (**)**

| Code No. | Course Title | L | T | P | C | HRS |
|----------|---------------------------|---|---|---|---|-----|
| YREOE1 | Hydro Power Technology | 3 | 0 | 0 | 3 | 3 |
| YREOE2 | Energy Efficient Building | 3 | 0 | 0 | 3 | 3 |

4.M.TECH RENEWABLE ENERGY (PART TIME)

CURRICULUM AND SYLLABUS

M.TECH RENEWABLE ENERGY (PART TIME)

REGULATION 2019

SEMESTER I

| Code No. | Course Title | L | T | P | C | HRS |
|------------|------------------------------------|----------|----------|----------|-----------|-----------|
| PYRE101 | Solar Energy Systems | 3 | 0 | 0 | 3 | 4 |
| PYRE102 | Wind Energy, Tidal Energy and OTEC | 3 | 0 | 0 | 3 | 4 |
| PYRE103*** | Elective – I | 3 | 0 | 0 | 3 | 4 |
| PYRE104 | Solar Energy Lab | 0 | 0 | 4 | 2 | 3 |
| | | 9 | 0 | 4 | 11 | 15 |

SEMESTER II

| Code No. | Course Title | L | T | P | C | HRS |
|------------|------------------------------|---|---|---|---|-----|
| PYRE201 | Bio-Energy Systems | 3 | 0 | 0 | 3 | 4 |
| PYRE202* | Research Methodology and IPR | 2 | 0 | 0 | 2 | 3 |
| PYRE203*** | Elective – II | 3 | 0 | 0 | 3 | 4 |
| PYRE204 | Bio and Thermal Energy Lab | 0 | 0 | 4 | 2 | 3 |

| | | | | | |
|--|----------|----------|----------|-----------|-----------|
| | 8 | 0 | 4 | 10 | 14 |
|--|----------|----------|----------|-----------|-----------|

SEMESTER III

| Code No. | Course Title | L | T | P | C | HRS |
|-----------------|----------------------------------|----------|----------|----------|-----------|------------|
| PYRE301 | Computational Fluid dynamics | 3 | 0 | 0 | 3 | 4 |
| PYREOE**** | Open Elective Course – I | 3 | 0 | 0 | 3 | 4 |
| PYRE303*** | Elective – III | 3 | 0 | 0 | 3 | 4 |
| PYRE304 | Computational Fluid Dynamics Lab | 0 | 0 | 4 | 2 | 3 |
| | | 9 | 0 | 4 | 11 | 15 |

SEMESTER IV

| Code No. | Course Title | L | T | P | C | HRS |
|-----------------|---------------------------|----------|----------|----------|-----------|------------|
| PYRE401*** | Elective – IV | 3 | 0 | 0 | 3 | 4 |
| PYRE402*** | Elective – V | 3 | 0 | 0 | 3 | 4 |
| PYREOE**** | Open Elective Course – II | 3 | 0 | 0 | 3 | 4 |
| PYRE404 | MAT and SCI Lab | 0 | 0 | 4 | 2 | 3 |
| | | 9 | 0 | 4 | 11 | 15 |

SEMESTER V

| Code No. | Course Title | L | T | P | C | HRS |
|-----------------|---------------------|----------|----------|-----------|----------|------------|
| PYRE501 | Project Phase – I | 0 | 0 | 20 | 9 | 20 |
| | | 0 | 0 | 20 | 9 | 20 |

SEMESTER VI

| Code No. | Course Title | L | T | P | C | HRS |
|-----------------|---------------------|----------|----------|-----------|-----------|------------|
| PYRE601 | Project Phase – II | 0 | 0 | 32 | 16 | 30 |
| | | 0 | 0 | 32 | 16 | 30 |

OVER ALL CREDITS = 68

* - Mandatory Course

** - Mandatory Course - Audit

*** - Elective Course

**** - Open Elective Course

LIST OF ELECTIVES (*)**

ELECTIVE GROUP - I:

| Code No. | Course Title | L | T | P | C | HRS |
|-----------------|--------------------------------------|----------|----------|----------|----------|------------|
| PYRE103A | Fuels and combustion technology | 3 | 0 | 0 | 3 | 4 |
| PYRE103B | Waste Management and Energy Recovery | 3 | 0 | 0 | 3 | 4 |

| | | | | | | |
|----------|----------------------------------|---|---|---|---|---|
| PYRE103C | Fluid Dynamics and Heat Transfer | 3 | 0 | 0 | 3 | 4 |
|----------|----------------------------------|---|---|---|---|---|

ELECTIVE GROUP - II:

| Code No. | Course Title | L | T | P | C | HRS |
|----------|---------------------------------------|---|---|---|---|-----|
| PYRE203A | Hydro Power Technology | 3 | 0 | 0 | 3 | 4 |
| PYRE203B | Optimum Utilization of heat and power | 3 | 0 | 0 | 3 | 4 |
| PYRE203C | Environmental Engineering | 3 | 0 | 0 | 3 | 4 |

ELECTIVE GROUP - III:

| Code No. | Course Title | L | T | P | C | HRS |
|----------|------------------------------|---|---|---|---|-----|
| PYRE303A | Electrical Energy Technology | 3 | 0 | 0 | 3 | 4 |
| PYRE303B | Energy Conservation in HVAC | 3 | 0 | 0 | 3 | 4 |
| PYRE303C | Sustainable Development | 3 | 0 | 0 | 3 | 4 |

ELECTIVE GROUP - IV:

| Code No. | Course Title | L | T | P | C | HRS |
|----------|---|---|---|---|---|-----|
| PYRE401A | Hydrogen and Nuclear Energy | 3 | 0 | 0 | 3 | 4 |
| PYRE401B | Instrumentation Technology for Energy Systems | 3 | 0 | 0 | 3 | 4 |
| PYRE401C | Energy Modeling, Economics and Project Management | 3 | 0 | 0 | 3 | 4 |

ELECTIVE GROUP - V:

| Code No. | Course Title | L | T | P | C | HRS |
|----------|--|---|---|---|---|-----|
| PYRE402A | Statistical tools for a Data analysis | 3 | 0 | 0 | 3 | 4 |
| PYRE402B | Unit Operations in Industries | 3 | 0 | 0 | 3 | 4 |
| PYRE402C | CAD/CAM and Simulation of Renewable Energy systems | 3 | 0 | 0 | 3 | 4 |

LIST OF OPEN ELECTIVE COURSES (**)**

Open Elective Group - I

| Code No. | Course Title | L | T | P | C | HRS |
|----------|----------------------------------|---|---|---|---|-----|
| PYREOE1A | Energy Audit and Management | 3 | 0 | 0 | 3 | 4 |
| PYREOE1B | Carbon Sequestration And Trading | 3 | 0 | 0 | 3 | 4 |

Open Elective Group - II

| Code No. | Course Title | L | T | P | C | HRS |
|----------|---|---|---|---|---|-----|
| PYREOE2A | Process Modeling and Simulation in energy systems | 3 | 0 | 0 | 3 | 4 |
| PYREOE2B | Energy Efficient building | 3 | 0 | 0 | 3 | 4 |

SCANNED BOS MINUTES

B.TECH MECHANICAL 2015 REG (FT & PT)

Department of Mechanical Engineering

Periyar Nagar, Vallam Thanjavar - 613 403, Tamil Nadu, India
Phone: +91 - 4362 - 264600 Fax: +91 - 4362 - 264660
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PERIYAR
MANIAMMAI
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BOARD OF STUDIES MEETING

**For B. Tech. MECHANICAL ENGINEERING PROGRAMME
(FULL TIME and PART TIME)**

Minutes of the Meeting

Date: 06.04.2015

Time: 02.00 pm - 05.00 pm

Venue : Freud Hall

Members Present

| S. No. | Name and Designation | Signature |
|--------|--|-----------|
| 1 | Mr. P. Pandiyaraj, HOD / Mech. and Member / BOS, PMU. | |
| 2 | Dr. M. Udhyakumar, Prof. / Mech., National Institute of Technology, Thiruchirappalli and Member / BOS. | |
| 3 | Dr. P. K. Srividhya, Prof. / Mech. & Director / Periyar R&D Centre for Solar and Bio Energies and Member / BOS, PMU. | |
| 4 | Dr. M. Sachithanandam, Prof. / Mech., and Research Coordinator / Mech., PMU. | |
| 5 | Mr. P. Srinivasan, AP / Mech., and Member / BOS, PMU. | |
| 6 | Ms. M. Mohana Priya, AP / Mech. and Programme Coordinator / Full time B.Tech. Mechanical Engineering, PMU. | |
| 7 | Mr. R. Thiagarajan, AP/Mech., and Programme Coordinator / Part time B.Tech. Mechanical Engineering, PMU. | |
| 8 | Mr. A. Pugazhenthii, AP/Mech. and Academic Coordinator / Mech., PMU. | |

Points discussed

(A) For full time B.Tech. Mechanical Engineering Programme

(1) The Curriculum 2013 (Revision II) and the Curriculum 2014 (Revision I) were approved with the following changes in the earlier versions.

- (i) In both the curriculums, the number of elective courses offered in VI Semester is reduced from 2 to 1 by shifting the course Gas Dynamics and Shock Waves from VII Semester to VI Semester and increasing the elective slots from 1 to 2 in VII Semester.

B.TECH MECHANICAL 2016 REG (FT & PT)

Department of Mechanical Engineering

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BOARD OF STUDIES MEETING
FOR B. Tech. MECHANICAL ENGINEERING PROGRAMME
Minutes of the Meeting

Date : 06.04.2016

Time : 2.00 p.m.

Venue : Newton Hall

Members Present

| | |
|---|-----------------------|
| 1. Dr. D. Jeyasimman, Asso. Prof. and HOD / Mech., PMU | Jeyasimman 06/04/16 |
| 2. Dr. M. Udhyakumar, Prof./Mech, National Institute of Technology, Trichy. | Udhyakumar |
| 3. Dr. P. K. Srividhya, Prof./Mech, PMU | Srividhya |
| 4. Mr. P. Pandiyaraj, AP(SS)/Mech, PMU | Pandiyaraj |
| 5. Mr. P. Srinivasan, AP/Mech, PMU | Srinivasan 06/04/2016 |
| 6. Mr. A. Pugazhenthii, AP/Mech, PMU | Pugazhenthii |
| 7. Mr. R. Thiyagarajan, AP/Mech. | Thiyagarajan |
| 8. Mr. C.M. Vivek, AP/Mech, PMU | Vivek |

Points discussed

(1) Curriculum 2015 is revised (Revision I) with the following changes:

The course Better Plant Engineering is included into core slot replacing Core

Dynamics and Shock Waves into elective slot.

- The elective courses - Industrial Robotics, Materials and Production Management, Advanced Engineering, Plastics and Composites, and Industrial Quality Control are removed.
- The course Modern Manufacturing Technology is renamed as Unconventional Manufacturing Technology.
- The slots for the courses Thermal Engineering (offered in VII Semester) and Heat and Mass Transfer (offered in VI Semester) are mutually exchanged.

(2) The syllabus from III to VIII Semesters for curriculum 2015 is finalized for Full time B.Tech. Mechanical Engineering Programme.

(3) The Curriculum 2015 Revision I and its syllabus are recommended as equivalent for curriculum 2016 for all semesters for Full time B.Tech. Mechanical Engineering Programme.

(4) The Curriculum 2015 and its syllabus are recommended as equivalent for curriculum 2016 for all semesters for Part time B.Tech. Mechanical Engineering Programme.

Jeyasimman 06/04/16
HOD/MECH
Dr. D. JEYASIMMAN, M.E., Ph.D.
Associate Professor,
Department of Mechanical Engineering,
Periyar Maniammai University,
Vallam, Thanjavur-613 403.

B.TECH MECHANICAL 2018 REG (FT & PT)

DEPARTMENT OF
MECHANICAL ENGINEERING

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**PERIYAR
MANIAMMAI**
INSTITUTE OF SCIENCE & TECHNOLOGY
Chattampi Campus
Periyar Nagar, Vallam, Thanjavur - 613 403
WISDOM BETTER KNOWLEDGE

MINUTES OF THE BOARD OF STUDIES
(Regulations 2018)

Date: 30.05.2018

Time: 10.30 A.M

Members present

| S. No | Name | Designation | Representing | Signature |
|-------|--------------------|-------------------------------|-------------------|------------------------|
| 1. | Dr.D.Jeyasimman | Head & Asso.Prof. | Chair person | Jeyasimman 30/05/18 |
| 2. | Dr.P.Sathya | Professor/NIT- Trichy | Member (Academic) | [Signature] |
| 3. | Dr.P.K.Srividhya | Professor & Dean Academics | Senior Member | [Signature] |
| 4. | Mr.A.Pughazhenthir | Asst. Professor | Member | [Signature] |
| 5. | Mr. .Thiyagarajan | Asst. Professor | Member | [Signature] |
| 6. | Mr.C.M.Vivek | Asst. Professor | Member | [Signature] |
| 7. | Mr.S.Jegan | Alumni | Member | [Signature] |
| 8. | Mr.N.Venkatesh | Student | Member | [Signature] |

Agenda:

1. Framing Curriculum for B.Tech. (Mechanical Engineering) Degree programme
2. Developing Syllabus from I - IV semesters for B.Tech. (Mechanical Engineering) Degree programme
3. Checking the course outcomes mapping with program outcome

The members of Board of studies of Department of Mechanical Engineering met on 30.5.2018 and discussed and framed the curriculum and syllabus for full time B.Tech. (Mechanical Engineering) for Regulations 2018 and also for part time B.Tech. (Mechanical Engineering) for Regulations 2018.

This will be submitted to the 29th Academic council meeting to be conducted on 09/06/2018 for approval.

I FEEDBACK COLLECTED, ANALYZED AND ACTION TAKEN

| | |
|------------------|-----|
| Alumni students: | YES |
| Parents: | YES |
| Employers | NO |
| Students: | YES |
| Teachers: | YES |

Important observations made and addressed in BOS

1. AICTE modal curriculum for Mechanical Engineering -2018 as taken as reference for framing curriculum and syllabus for Regulation 2018.

2. Total credits were fixed as 156 credits only.

3. New core elective courses are added in Regulation 2018.

II COMPARISON BETWEEN REGULATIONS 2017 & 2018

| Semester | REGULATION 2017 | REGULATION 2018 | Addition/ Deletion |
|----------|---|---------------------------|--|
| | Course name | Course name | |
| I | Algebra, Differential Calculus and their Applications | Calculus & Linear Algebra | <p>Deletion-Geometrical Application of Differential Calculus & Infinite series , Functions of several variables, Ordinary differential equations and applications</p> <p>Addition – Sequence and series, Multivariable calculus; maxima and minima and vector calculus, differential and integral calculus</p> |

BOS MINUTES FOR M.TECH RENEWABLE ENERGY – 2017- (FT& PT)

Department of Mechanical Engineering

Periyar Nagar, Vallam Thanjavur - 613 403, Tamil Nadu, India
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Under Sec. 3 of UGC Act, 1956



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BOARD OF STUDIES MEETING

M. Tech. RENEWABLE ENERGY PROGRAMME

Minutes of the Meeting

Date : 29.05.2017

Time: 02.00 p.m.

Venue : Newton Hall

Members present:

| SL.No | Name and Designation | Signature |
|-------|---|------------------------------|
| 01 | Dr. D. Jeyasimman, Associate Prof & HoD / Mech Member ,PMU | Jeyasimman |
| 02 | Dr. T.K. Radha Krishnan, Professor / Chemical Engg, NIT, Trichy. Member ,BOS, | T.K. Radha Krishnan 29.05.17 |
| 03 | Dr. P. K. Srividya, Prof / Dean Academics (i/c) & Director, PRDCSB Member ,BOS /PMU | P. K. Srividya |
| 04 | Mr. J.Thiagarajan AP/Mech , Programme Co ordinator /M.Tech(RE) , PMU | J. Thiagarajan 29/5/17 |
| 05 | Mr. P Srinivasan Ap/Mech Research Co Ordinator/Mech,PMU | P. Srinivasan 29/05/2017 |
| 06 | Mr. A. Pugazhenth, AP/Mech, Academic co-ordinator / Mech ,PMU | A. Pugazhenth 29/5/17 |
| 07 | T. Anandh - Student I-year ,M. Tech (RE) 2016-18 | T. Anandh 29/5/17 |
| 08 | C. Aravindraj - Alumini M. Tech (RE) 2015-17 | C. Aravindraj 29/5/17 |

Points discussed

(A) For Full Time Renewable Energy programme

- (i) Curriculum 2017 and its syllabus for semesters (I to IV) were approved with few changes in the draft version
- (ii) Course name for 206 A can be modified into Environmental Engineering and Pollution control.
- (iii) In course YRE 303A Instrumentation Technology for Energy Systems The topic Introduction to Instrumentation diagrams are to be added.
- (iv) In course YRE 205 Statistical Tools for Data Analysis SPSS Design expert packages to be added for problem solving.

Suggestions by External member for Curriculum 2017:

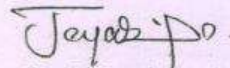
Text books and references books for courses are to be given with possible latest edition.

(B) For Part Time Renewable Energy programme

- (i) Curriculum 2017 and its syllabus for semesters (I to VI) were approved with few changes in the draft version
- (ii) Course name for PYRE 403A can be modified into Environmental Engineering and Pollution control.
- (iii) In course PYRE 503A Instrumentation Technology for Energy Systems the topic Introduction to Instrumentation diagrams are to be added.
- (iv) In course PYRE 402 Statistical Tools For Data Analysis SPSS Design expert packages to added for hands on problem solving.

Suggestions by External member for Curriculum 2017:

Text books and reference books for courses are to be given with possible latest edition.\


(Dr. D. Jeyasimman)
HoD/ Mech.

Dr. D. JEYASIMMAN, M.E., Ph.D.
Associate Professor,
Head of Department,
Department of Mechanical Engineering,
Periyar Maniammai University,
Vallam, Thanjavur - 613403.

BOS MINUTES FOR M.TECH RENEWABLE ENERGY – 2018- (FT& PT)

DEPARTMENT OF MECHANICAL ENGINEERING

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MINUTES OF THE BOARD OF STUDIES

(Regulations 2018)

Date: 05.06.2018

Time: 11.00 A.M

Members present

| S. No | Name | Designation | Representing | Signature |
|-------|----------------------|--|-------------------|----------------|
| 1. | Dr.D.Jeyasimman | Assoc. Prof. & Head/PMIST | Chair person | Jeyasimman |
| 2. | Dr.T.K.Radhakrishnan | Professor /NIT Trichy | Member (Academic) | Radhakrishnan |
| 3. | Dr.P.K.Srividhya | Professor & Dean Academic /PMIST | Senior Member | Srividhya |
| 4. | Mr.J.Thiyagarajan | Asst. Prof/Mech. | Member | J.Thiyagarajan |
| 5. | Mr.R.Thiyagarajan | Asst. Prof/Mech. | Member | R.Thiyagarajan |

Agenda:

1. Framing Curriculum for M.Tech. (Renewable Energy) Degree programme
2. Developing Syllabus from I - IV semesters for M.Tech (Renewable Energy) Degree programme

The members of Board of studies of Department of Mechanical Engineering met on 05.06.2018 and discussed and framed the curriculum and syllabus for M.Tech. (Renewable Energy) for Regulations 2018- Full time & Part Time.

This will be submitted to the 29th Academic council meeting to be conducted on 09/06/2018 for approval.

I FEEDBACK COLLECTED, ANALYZED AND ACTION TAKEN

Alumni students: NO
 Parents: NO
 Employers: NO
 Students: YES
 Teachers: YES

Important observations made and addressed in BOS

1. AICTE modal curriculum for M.Tech Renewable Energy -2018 as taken as reference for framing curriculum and syllabus for Regulation 2018.
2. Total credits were fixed as 67 credits only.
3. New Mandatory and Audit courses are added in Regulation.

II COMPARISON BETWEEN REGULATIONS 2017 & 2018

| Semester | REGULATION 2017 | REGULATION 2018 | Addition/ Deletion |
|----------|--|--|----------------------------|
| | Course name | Course name | |
| I | Fuels and combustion technology | Shifted to elective – Solar Energy Engineering | No changes |
| | Hydro Power Technology | Shifted to Open elective – Wind energy, Tidal Energy and OTEC | No changes |
| | Solar Energy Engineering | Process Modelling and Simulation in Energy systems | No changes |
| | Wind Energy, Tidal Energy and OTEC | Elective – I | No changes |
| | Process Modelling and Simulation in energy systems | Elective – II | No changes |
| | Elective – I | Solar Energy Lab | No changes |
| | Solar Energy and MAT Lab | Research Methodology and IPR | New mandatory course added |
| | - | Audit courses (Student's Choice)- English for Research Paper Writing | New audit course added |
| | - | MAT and SCI Lab | New lab introduced |
| II | Bio-Energy Engineering | Bio Energy Engineering | No changes |
| | Computational Fluid Dynamics | Computational Fluid Dynamics | No changes |

| | | | | |
|---------------|-------------------------------------|--------|---|------------------|
| | Electrical Technology | Energy | Electrical Energy Technology | No changes |
| | Hydrogen and Nuclear Energy | | Shifted to elective – Elective – III | No changes |
| | Statistical Tools For Data Analysis | | Shifted to elective- Elective – IV | No changes |
| | Elective – II | | Bio Energy and CFD lab | No changes |
| | Bio Energy and CFD Lab | | Mini Project | New course added |
| | - | | Audit courses (Student's Choice)- Constitution of India | New course added |
| III | Energy Audit and Management | | Shifted to Elective- Dissertation Phase – I | No changes |
| | Elective – III | | Elective - V | No changes |
| | Elective – IV | | Open Elective Course(Student's Choice) | No changes |
| | Project work phase - I | | - | Deletion |
| IV | Project work phase - II | | Dissertation Phase – II | No changes |
| Total Credits | 74 | | 67 | |

IV. LIST OF NEWLY INTRODUCED COURSES IN REGULATION

1. Research Methodology and IPR
2. English for Research Paper Writing
3. MAT and SCI Lab
4. Mini Project
5. Constitution of India

V. COURSES INTRODUCED FOR IMPROVING THE EMPLOYABILITY SKILLS OF THE STUDENTS.

FULL TIME

| Sl. No | Course Title | Credits | | | |
|--------|--|---------|---|---|---|
| | | L | T | P | C |
| 1 | Energy Audit and Management | 3 | 0 | 0 | 3 |
| 2 | CAD/CAM and Simulation of Renewable Energy | 3 | 0 | 0 | 3 |

| | | | | | |
|---|---------------------------|---|---|----|----|
| | systems | | | | |
| 3 | Energy Efficient Building | 3 | 0 | 0 | 3 |
| 4 | Dissertation Phase – I | 0 | 0 | 10 | 10 |
| 5 | Dissertation Phase – II | 0 | 0 | 16 | 16 |

PART TIME

| Sl. No | Course Title | Credits | | | |
|--------|--|---------|---|----|----|
| | | L | T | P | C |
| 1 | Process Modelling and Simulation in energy systems | 3 | 0 | 0 | 3 |
| 2 | Carbon sequestration and trading | 3 | 0 | 0 | 3 |
| 3 | Instrumentation technology for energy systems | 3 | 0 | 0 | 3 |
| 4 | Dissertation Phase – I | 0 | 0 | 9 | 9 |
| 5 | Dissertation Phase – II | 0 | 0 | 16 | 16 |

VI. VALUE ADDED COURSES PROVIDED - NIL

VII. COMPARISON BETWEEN REGULATIONS 2017 & 2018 IN PART TIME

Similar to the full time, Regulation 2017 of Part time M.Tech also revised.

| Semester | REGULATION 2017 | + REGULATION 2018 | Addition/ Deletion |
|-----------|------------------------------------|---|--------------------|
| | Course name | Course name | |
| I | Fuels and combustion technology | Shifted to elective- Solar Energy Engineering | No Changes |
| | Hydro Power Technology | Shifted to elective- Wind Energy, Tidal Energy and OTEC | No changes |
| | Solar Energy Engineering | Elective – I | No changes |
| | Solar Energy and MAT Lab | Solar Energy Lab | Deletion- MAT lab |
| II | Bio-Energy Engineering | Bio-Energy Engineering | No changes |
| | Wind Energy, Tidal Energy and OTEC | Shifted to First semester- Research Methodology and IPR | New course added |
| | Electrical Technology Energy | Shifted to elective- Elective – II | No changes |
| | Bio and Thermal Energy Lab | Bio and Thermal Energy Lab | No changes |

| | | | | |
|---------------|---|-------|---|---------------------|
| III | Computational dynamics | Fluid | Computational Fluid dynamics | No changes |
| | Hydrogen and Nuclear Energy | | Shifted to elective-Open Elective Course - I | Open elective added |
| | Elective - I | | Elective - III | No changes |
| | Computational Dynamics Lab | Fluid | Computational Fluid Dynamics Lab | No changes |
| IV | Energy Audit and Management | | Shifted to OPEN elective-Elective - IV | Open elective added |
| | Statistical tools for a Data analysis | | Shifted to elective-Elective - V | No changes |
| | Elective II | | Shifted to 2 nd semester-Open Elective Course - II | No changes |
| | Mini Project | | MAT and SCI Lab | Deletion |
| V | Process Modeling and Simulation in energy systems | | Shifted to open elective-Dissertation Phase - I | No changes |
| | Elective - III | | - | Deletion |
| | Elective- IV | | - | Deletion |
| | Project work Phase - I | | - | No changes |
| VI | Project work Phase - II | | Dissertation Phase - II | Course Name changed |
| Total Credits | 74 | | 68 | |

VIII. OVERALL PERCENTAGE OF CHANGE COMPARED TO REGULATIONS 2017 (FULL TIME & PART TIME)

20%

Jeyasimman P.D.

Dr. D. JEYASIMMAN, M.E., Ph.D.
Associate Professor & Head,
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Periyar Maniammai Institute of
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THANJAVUR - 613 403.