Maharshi Karve Stree Shikshan Samstha's
# Cummins College of Engineering for Women
**(an autonomous institute affiliated to Savitribai Phule Pune university)**
Karvenagar, Pune - 411 052.

Ref : CCEW/AC/48/2023-24                                    Date : 6<sup>th</sup> December, 2023

The meeting of the Academic Council of MKSSS's Cummins College of Engineering for Women was conducted on 29<sup>th</sup> November, 2023 at 2.00 p.m. in the Conference Hall (3<sup>rd</sup> Floor) of Mechanical Building of MKSSS's Cummins College of Engineering for Women, Pune.

(i)    Following Academic Council members were present for the meeting in person.

| | |
|---|---|
| (01) Dr. Madhuri Khambete | (02) Dr. Kalyani Joshi |
| (03) Dr. Nilesh Powar | (04) Dr. Sharada Ohatkar |
| (05) Dr. Sunita Jahirabadkar | (06) Dr. Dipali Ramdasi |
| (07) Dr. Anagha Kulkarni | (08) Dr. Ajit Bhosale |
| (09) Dr. Madhuri Purandare | (10) Dr. Anand Bewoor |
| (11) Dr. Sandeep Musale | (12) Dr. Anita Patil |
| (13) Dr. Dipti Patil | (14) Dr. Prachi Mukherji |
| (15) Dr. Ashok Khedkar | (16) Prof. Hitendra Khairnar |
| (17) Prof. Amit Rajurkar | (18) Dr. Vikram Athalye (Invitee) |

(ii)   Following Academic Council members attended meeting online using Google meet.

(18) Dr. B.B. Ahuja                          (19) Dr. Bhalchandra Puranik

(iii)  Dr. Sunil Thakre & Mr. Ajay Deshmukh could not attend the meeting. Their absence was approved by the Academic Council.

Principal Dr. Madhuri Khambete welcomed all the Academic Council members present for the meeting in person or online.

Following points were discussed and decisions were taken in the meeting:

Point No. 1]        To confirm the minutes of the previous Academic Council meeting held on 19<sup>th</sup> July, 2023.

Discussion :        Dr. Anand Bewoor presented the Minutes of previous Academic Council Meeting.

Decision    :        Minutes of the previous Academic Council meeting held on 19<sup>th</sup> July, 2023 were confirmed.

Point No. 2]        To discuss & approve action taken report of the previous Academic Council meeting held on 19<sup>th</sup> July, 2023.

Decision    :        The approval is granted for the action taken report of the previous Academic Council meeting held on 19<sup>th</sup> July, 2023.

| Point No. 3] | To discuss & approve course titles & syllabus as per approved curriculum structure of F.Y. B.Tech. Semester-II. |
|---|---|

**Point No. 3]** To discuss & approve course titles & syllabus as per approved curriculum structure of F.Y. B.Tech. Semester-II.

**Discussion 3(I):** Dr. Madhuri Purandare presented detail course contents of course titled 'Multivariate Calculus'.

**Decision 3(I):** Academic Council members approved course contents of course titled 'Multivariate Calculus'.

**Discussion 3(II)]:** (i) Dr. Anita Patil, presented the options & contents under the Course 'Liberal Learning' (Co-curricular Course-II) at F.Y. B.Tech. Semester-II. As below

<table>
<tr><th colspan="3">Liberal Learning Course – II<br>*Students have to register for any one of the modules from below 8 options:</th></tr>
<tr><th>Option</th><th>Name of the Course</th><th>Contents in brief</th></tr>
<tr>
<td>A</td>
<td>Basics of Acupressure</td>
<td>❖ Body Healing Mechanism<br>❖ Basic principles of Acupressure<br>❖ Different correspondence systems<br>❖ Different ways of treatment using correspondence points</td>
</tr>
<tr>
<td>B</td>
<td>Foreign Language</td>
<td>❖ Basics of language: Reading, Writing and Listening<br>❖ Vocabulary, Greetings words<br>❖ Grammatical rules, Verb categorization<br>❖ Dialogue oriented vocabulary with little grammar</td>
</tr>
<tr>
<td>C</td>
<td>Personality Development and Leadership</td>
<td>❖ Personality, Self-Assessment<br>❖ Individual personality attributes and characteristics<br>❖ Factors determining work performance<br>❖ Leadership traits, Leadership Development</td>
</tr>
<tr>
<td>D</td>
<td>Professional Ethics & Etiquette</td>
<td>❖ Ethics, The Importance of Integrity<br>❖ The Difference between Morals, Ethics and Laws<br>❖ Engineering Ethics, Ethics in the Business World<br>❖ Business Etiquette, Dining Etiquette, Networking Etiquette</td>
</tr>
<tr>
<td>E</td>
<td>Quantitative Aptitude and Logical Reasoning</td>
<td>❖ Quantitative Ability<br>❖ Problems on Ages, Surds & Indices, Percentage, Permutation and Combinations, Probability, Profit and Loss, Speed and Distance, Time & Work, Ratio and Proportion, Area<br>❖ Analogy, Blood Relation, Calendars, Clocks, Venn Diagrams</td>
</tr>
</table>

| | | |
|---|---|---|
| F | Women Health and Well-Being | ❖ Physical fitness and health, Techniques to improve mental and emotional strength<br>❖ Issues and challenges related to loneliness, anxiety, depression, lack of focusing and concentration, peer pressure<br>❖ Need of being self-sufficient, financial planning and decision making, investment schemes, loan schemes<br>❖ Work life balance |
| G | Yogasana & Meditation | ❖ Preparatory Movements/ Loosening Exercise<br>❖ Suryanamaskar<br>❖ Science of Yoga and Breathing Techniques,<br>❖ Pranayam and Meditation |
| H | Urban Emission Awareness | ❖ Encourage use of Sustainable Energy at home and at work place<br>❖ Usage of energy-efficient appliances<br>❖ Reducing GreenHouse Gas Emission and Improving Air Quality<br>❖ Effectively addresses the nexus of energy |

(ii) Two in-semester examinations of total 50 marks are proposed for this examination.

(iii) Dr. Anita Patil requested to allow the modes of evaluation depending upon the nature of the course which may be other than pen & paper examination.

Decision 3(II):  (i) All the Academic Council members approved proposed options and contents under 'Liberal Learning' course for F.Y. B.Tech. Semester-II.

(ii) It is also approved to conduct two in-semester examinations of total 50 marks for this course. The mode of evaluation of these courses can be as per the course requirements.

Discussion 3(III)]:  (i) Following program core courses were proposed at first year for respective programs

| S N | Program | Program core courses at First Year level |
|---|---|---|
| (i) | B.Tech. Computer Engg. | Object Oriented Paradigms in Java |
| (ii) | B.Tech. Electronics & Telecom. | Principles of Communication Systems |
| (iii) | B.Tech. Information Technology | Networking Essentials |
| (iv) | B.Tech. Instrumentation & Control | Principles of Measurement & Automation System |
| (v) | B.Tech. Mechanical Engineering | Engineering Mechanics |

Decision 3(III):  All program core courses are approved.

Point No. 4]   To discuss & approve course titles as per approved curriculum structure from SY to Final Yr. B.Tech. UG-Engg. Programmes in line with the NEP-GR.

viz. (I) Electronics & Telecommunications Engineering
(II) Computer Engineering (III) Instrumentation & Control Engg.
(IV) Information Technology (V) Mechanical Engineering

Point No. 4(I)]   **Electronics & Telecommunications Engineering**

Discussion :   Dr. Sharada Ohatkar presented course titles as per approved curriculum structure from S.Y. to Final Year B.Tech. UG-Engg. Programmes in Electronics and Telecommunication Engineering.

| Second Year – 2024-25 onwards | | | | | | |
|---|---|---|---|---|---|---|
| Semester-III | | | | | | |
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
| 1 | PCCEC301 | Electronics Circuits and Application | 3 | 0 | 2 | 4 |
| 2 | PCCEC302 | Signals and Systems | 3 | 0 | 0 | 3 |
| 3 | PCCEC303 | Digital Electronics | 3 | 1 | 0 | 4 |
| 4 | PCCEC304 | Data Structures and Algorithms | 3 | 0 | 2 | 4 |
| 5 | OE301 | Open Elective-I | 3 | 0 | 0 | 3 |
| 6 | VEC301 | Universal Human Values | 2 | 1 | 0 | 3 |
| 7 | AEC301 | Design Thinking | 1 | 1 | 0 | 2 |
| | | Total = | 18 | 02 | 04 | 23 |
| Semester-IV | | | | | | |
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | practical | Credits |
| 1 | PCCEC401 | Digital Communication | 3 | 0 | 2 | 4 |
| 2 | PCCEC402 | Sensors and Actuators | 2 | 0 | 0 | 2 |
| 3 | PCCEC403 | Machine Learning | 3 | 0 | 2 | 4 |
| 4 | CEP401 | Community Engagement Project | 1 | 0 | 2 | 2 |
| 5 | MDm401 | Multidisciplinary Minor 1 | 3 | 1 | 0 | 4 |
| 6 | VSEC401 | Object Oriented Programming | 0 | 0 | 4 | 2 |
| 7 | EEM401 | Entrepreneurship | 3 | 1 | 0 | 4 |
| | | Total = | 17 | 02 | 10 | 22 |

## Third Year – 2025-26 onwards

### Semester-V

| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
|---------|-------------|--------------|---------|----------|-----------|---------|
| 1 | PCCEC501 | VLSI Design | 3 | 0 | 2 | 4 |
| 2 | PCCEC502 | Digital Signal Processing | 2 | 0 | 2 | 3 |
| 3 | PCCEC503 | Microcontroller | 3 | 0 | 2 | 4 |
| 4 | PCCEC504 | Wave Theory and Antenna | 3 | 0 | 0 | 3 |
| 5 | PECEC501 | Programme Elective-I | 3 | 0 | 2 | 4 |
| 6 | MDm501 | Multidisciplinary Minor 2 | 3 | 0 | 2 | 4 |
| | | Total = | 17 | 00 | 10 | 22 |

### Semester-VI

| Sr. No. | Course Code | Course Title | Lecture | Tutorial | practical | Credits |
|---------|-------------|--------------|---------|----------|-----------|---------|
| 1 | PCCEC601 | Computer Networks and Security | 3 | 0 | 0 | 3 |
| 2 | PCCEC602 | Embedded Processors | 3 | 0 | 2 | 4 |
| 3 | PCCEC603 | Digital Image Processing | 3 | 0 | 2 | 4 |
| 4 | PCCEC604 | Broadband Communication Systems | 2 | 0 | 2 | 3 |
| 5 | PECEC601 | Programme Elective Course-II | 3 | 0 | 2 | 4 |
| 6 | MDm601 | Multidisciplinary Minor 3 | 2 | 0 | 0 | 2 |
| 7 | VSEC601 | Java Programming Lab | 0 | 0 | 4 | 2 |
| | | Total = | 16 | 00 | 12 | 22 |

| PEC-EC-501 | Programme Elective -I | PEC-EC-601 | Programme Elective-II |
|------------|------------------------|------------|------------------------|
| (i) | Data Base Management System | (i) | Controls Systems |
| (ii) | Information Theory and Coding Techniques | (ii) | Deep Learning |
| (iii) | Introduction to Internet of Things | (iii) | Autonomous Robots |
| (iv) | Introduction to Hydraulic Systems | (iv) | Power electronics |

## Fourth Year – 2026-27 onwards

### Semester-VII

| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
|---------|-------------|--------------|---------|----------|-----------|---------|
| 1 | PECEC701 | Programme Elective-III | 3 | 0 | 0 | 3 |
| 2 | OE701 | Open Elective-II | 2 | 0 | 0 | 2 |
| 3 | RM701 | Research Methodology | 3 | 0 | 0 | 3 |
| 4 | INTR701 | Internship | 0 | 0 | 12* | 12 |
| | | Total = | 08 | 00 | 12 | 20 |

| Semester-VIII | | | | | | |
|---|---|---|---|---|---|---|
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | practical | Credits |
| 1 | PECEC801 | Programme Elective-IV | 3 | 0 | 2 | 4 |
| 2 | PECEC802 | Programme Elective-V | 3 | 0 | 2 | 4 |
| 3 | OE801 | Open Elective-III | 3 | 0 | 2 | 4 |
| 4 | MDm801 | Multidisciplinary Minor 4 | 3 | 1 | 0 | 4 |
| 5 | PROJ801 | Project | 0 | 0 | 8 | 4 |
| | | Total = | 12 | 01 | 14 | 20 |

| PEC-EC-801 Programme Elective -III |
|---|
| Online courses related to |
| (i) Block chain and applications |
| (ii) Cloud Computing |

| PEC-EC-801 Programme Elective-IV | | PEC-EC-802 Programme Elective-V | |
|---|---|---|---|
| (i) | Mobile Communication | (i) | Microwave Engineering |
| (ii) | System on Chip | (ii) | Industrial Automation |
| (iii) | Real Time Operating Systems | (iii) | Multimedia Systems |
| (iv) | Augmented and Virtual Reality | | |

| Multidisciplinary Minor Course- Health Care | | | | | |
|---|---|---|---|---|---|
| Course Code | Course Title | Teaching Scheme Hrs / Wk | | | Credits |
| | | Lecture | Tutorial | Practical | |
| MDm401 | Probability and Statistics | 3 | 1 | 0 | 4 |
| MDm501 | Bio-Signal Acquisition and Data Analysis | 3 | 0 | 2 | 4 |
| MDm601 | Medical Waste management | 2 | 0 | 0 | 2 |
| MDm801 | Medical Equipment and Wearable Devices | 3 | 1 | 0 | 4 |
| | Total | 11 | 02 | 02 | 14 |

Discussion (I):

1. Dr. B.B. Ahuja suggested to change the name of (PECEC601) Program Elective-II Autonomous Robots to 'Robotics'.
2. Dr. Kalyani Joshi suggested that under the Multidisciplinary Minor course Health Care the course title 'probability and statistics' needs to be changed to 'statistical analysis of healthcare data'.

Decision 4(I):

(i) It is decided to make changes in course titles i.e. Autonomous Robots to 'Robotics' & probability and statistics to 'Statistical analysis of healthcare data' as per the suggestions given by the members.

(ii) Remaining course titles are approved.

Point No. 4(II)]  **Computer Engineering**

Discussion : Dr. Sunita Jahirabadkar, presented course titles as per approved curriculum structure from S.Y. to Final Year B.Tech. UG-Engg. Programmes in Computer Engineering.

### Second Year – 2024-25 onwards

#### Semester-III

| Course Code | Course Title | Teaching Scheme Hours / Week | | | Credits |
|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical | |
| PCCCE301 | Database management systems | 3 | 0 | 2 | 4 |
| PCCCE302 | Data Structure | 3 | 0 | 4 | 5 |
| PCCCE303 | Digital systems and Computer organization | 3 | 0 | 0 | 3 |
| PCCCE304 | Discrete Mathematics and Statistics | 3 | 0 | 0 | 3 |
| OE301 | Open Elective-I | 3 | 0 | 0 | 3 |
| VEC301 | Universal Human Values | 2 | 1 | 0 | 3 |
| AEC301 | Design Thinking | 1 | 1 | 0 | 2 |
| | Total | 18 | 02 | 06 | 23 |

#### Semester-IV

| Course Code | Course Title | Teaching Scheme Hours / Week | | | Credits |
|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical | |
| PCCCE401 | Theory Of Computation | 3 | 1 | 0 | 4 |
| PCCCE402 | Microprocessor and Microcontroller | 3 | 0 | 2 | 4 |
| PCCCE403 | Operating Systems | 2 | 0 | 0 | 2 |
| CEP401 | Community engagement project | 1 | 0 | 2 | 2 |
| MDm401 | Multidisciplinary Minor 1 | 3 | 1 | 0 | 4 |
| VSEC401 | Programming Skills Development Laboratory I | 1 | 0 | 2 | 2 |
| EEM401 | Entrepreneurship | 3 | 1 | 0 | 4 |
| | Total | 16 | 03 | 06 | 22 |

# Third Year – 2025-26 onwards
## Semester-V

| Course Code | Course Title | Teaching Scheme Hours / Week | | | Credits |
|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical | |
| PCCCE501 | Machine Learning | 3 | 0 | 2 | 4 |
| PCCCE502 | Software design Architecture | 3 | 0 | 0 | 3 |
| PCCCE503 | Computer Networks | 3 | 0 | 2 | 4 |
| PCCCE501 | Design and Analysis of Algorithms | 3 | 0 | 0 | 3 |
| PECCE501 | Programme Elective-I | 3 | 0 | 2 | 4 |
| MDm-501 | Multidisciplinary Minor-II | 3 | 0 | 2 | 4 |
| | Total | 18 | 00 | 8 | 22 |

| Programme Elective-I |
|---|
| (i)  Digital Image Processing |
| (ii)  Linux Internals |
| (iii) Deep Learning |

## Semester-VI

| Course Code | Course Title | Teaching Scheme Hours / Week | | | Credits |
|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical | |
| PCCCE601 | Java Full Stack Technologies | 3 | 0 | 2 | 4 |
| PCCCE602 | Cloud Computing | 3 | 0 | 2 | 4 |
| PCCCE603 | Software Engineering | 3 | 0 | 0 | 3 |
| PCCCE601 | Data Engineering | 3 | 0 | 2 | 4 |
| PECCE601 | Programme Elective Course-II | 3 | 0 | 0 | 3 |
| MDm601 | Multidisciplinary Minor-III | 2 | 0 | 0 | 2 |
| VSEC601 | Programming Skills Development Laboratory-II | 0 | 0 | 4 | 2 |
| | Total | 17 | 00 | 10 | 22 |

| Programme Elective-II |
|---|
| (i)  DevOps Fundamentals |
| (ii)  Compiler Construction |
| (iii) Data Management, Protection and Governance |
| (iv) Introduction to Cyber Security |

# Fourth Year – 2026-27 onwards

## Semester-VII

| Course Code | Course Title | Teaching Scheme Hours / Week | | | Credits |
|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical | |
| PECCE701 | Programme Elective Course-III (online course) | 3 | 0 | 0 | 3 |
| OE701 | Open Elective-II (online course) | 2 | 0 | 0 | 2 |
| RM701 | Research Methodology (online course) | 3 | 0 | 0 | 3 |
| INTR701 | Internship | -- | -- | 12 Weeks (Min.) * | 12 |
| | Total | 08 | 00 | -- | 20 |

| Programme Elective-III |
|---|
| (i) Courses Related to |
| (ii) Operation Research |
| (iii) Distributed Systems |
| (iv) Information Retrieval |
| (v) Introduction to Block Chain |

## Semester-VIII

| Course Code | Course Title | Teaching Scheme Hours / Week | | | Credits |
|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical | |
| PECCE801 | Programme Elective Course-IV | 3 | 0 | 2 | 4 |
| PECCE802 | Programme Elective Course-V | 3 | 0 | 2 | 4 |
| MDm801 | Multidisciplinary Minor-IV | 3 | 0 | 2 | 4 |
| OEC801 | Open elective-III | 3 | 1 | 0 | 4 |
| PROJ801 | Project | 0 | 0 | 8 | 4 |
| | Total | 12 | 01 | 14 | 20 |

| Programme Elective-IV | Programme Elective-V |
|---|---|
| (i) Introduction to Natural Language Processing | (i) Internet of Things |
| (ii) User Experience Design (UX/UI) | (ii) Network Information System |
| (iii) Multimedia Systems | (iii) Parallel Computing |
| (iv) Artificial Intelligence | |

| Multidisciplinary Minor Courses | | | | | |
|---|---|---|---|---|---|
| Course Code | Course Title | Teaching Scheme Hours / Week | | | Credits |
| | | Lecture | Tutorial | Practical | |
| MDm401 | Enterprise Information systems | 3 | 1 | 0 | 4 |
| MDm501 | Enterprise Resource Planning | 3 | 0 | 2 | 4 |
| MDm601 | Enterprise Banking and Finance | 2 | 0 | 0 | 2 |
| MDm801 | Enterprise Intelligence and Analytics | 3 | 0 | 2 | 4 |
| | Total | 11 | 01 | 04 | 14 |

| | |
|---|---|
| Discussion 4(II): | (i) Academic Council members suggested to Change The course title Enterprise Banking as "Enterprise Banking and Finance", and accordingly appropriate topics need to be added. |
| | (ii) Members suggested changing the title "Enterprise Intelligence" as "Enterprise Intelligence and Analytics". |
| | (iii) Suggestion was given to include course on Cyber Security under program elective options. |
| | (iv) For the Discrete Mathematics course, Suggestion was given to modify teaching scheme as 2L + 1 tutorial. |
| Decision 4(II): | (i) It is decided to make suggested changes in course titles. |
| | (ii) It is also decided to include cyber security course as program elective option. |
| | (iii) It is decided to study possibility of changing Discrete Mathematics teaching scheme as per the suggestion given. |
| | (iv) Approval is granted to the remaining course titles. |

Point No. 4(III)] **Instrumentation & Control Engineering**

Discussion : Dr. Dipali Ramdasi presented course titles as per approved curriculum structure from S.Y. to Final Year B.Tech. UG-Engg. Programmes in Instrumentation & Control Engineering.

| Second Year – 2024-25 onwards | | | | | | |
|---|---|---|---|---|---|---|
| Semester-III | | | | | | |
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
| 1 | PCCIN301 | Analog and Digital Electronics | 3 | 1 | 2 | 5 |
| 2 | PCCIN302 | Sensors and Transducers | 3 | 0 | 2 | 4 |
| 3 | PCCIN303 | Fundamentals of computer Networks | 3 | 0 | 0 | 3 |
| 4 | PCCIN304 | Applied Mathematics | 3 | 0 | 0 | 3 |
| 5 | OE301 | Open Elective-I | 3 | 0 | 0 | 3 |
| 6 | VEC301 | Universal Human Values (Value Education Course) | 2 | 1 | 0 | 3 |
| 7 | AEC301 | Design Thinking (Ability Enhancement Course) | 1 | 1 | 0 | 2 |
| | | Total = | 18 | 3 | 4 | 23 |

| Semester-IV |
|---|
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PCCIN401 | Control Systems | 3 | 1 | 0 | 4 |
| 2 | PCCIN402 | Microcontroller Techniques | 3 | 0 | 2 | 4 |
| 3 | PCCIN403 | Industrial Drives | 2 | 0 | 0 | 2 |
| 4 | CEP401 | Community Engagement Project | 1 | 0 | 2 | 2 |
| 5 | MDm401 | Environmental Instrumentation | 3 | 1 | 0 | 4 |
| 6 | VSEC401 | Excel Programming (Vocational Skill Enhancement Course) | 1 | 0 | 2 | 2 |
| 7 | EEM401 | Entrepreneurship | 3 | 1 | 0 | 4 |
| | | Total = | 16 | 3 | 6 | 22 |

| Third Year – 2025-26 onwards |
|---|
| Semester- V |
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PCCIN501 | Process Loop Components | 3 | 0 | 2 | 4 |
| 2 | PCCIN502 | Internet of Things | 3 | 0 | 2 | 4 |
| 3 | PCCIN503 | Digital Signal Processing | 3 | 1 | 0 | 4 |
| 4 | PCCIN504 | Management Information System | 2 | 0 | 0 | 2 |
| 5 | PECIN501 | Programme Elective Course-I | 3 | 0 | 2 | 4 |
| 6 | MDm501 | Data Science in Sustainability | 3 | 0 | 2 | 4 |
| | | Total = | 17 | 1 | 8 | 22 |

| Semester-VI |
|---|
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PCCIN601 | Industrial Automation | 3 | 0 | 2 | 4 |
| 2 | PCCIN602 | System Engineering and Management | 3 | 0 | 2 | 4 |
| 3 | PCCIN603 | Process Data Analytics | 3 | 0 | 2 | 4 |
| 4 | PCCIN604 | Process Instrumentation and Control | 3 | 0 | 0 | 3 |
| 5 | PECIN601 | Programme Elective Course-II | 3 | 0 | 0 | 3 |
| 6 | MDm601 | Energy Management System & Audit | 2 | 0 | 0 | 2 |
| 7 | VSEC601 | Data Structures | 0 | 0 | 4 | 2 |
| | | Total = | 17 | 0 | 10 | 22 |

| PECIN501 Programme Elective Course-I | PECIN601 Programme Elective Course-II |
|---|---|
| (i) Modern Control Theory | (i) Automotive Instrumentation |
| (ii) Biomedical & Analytical Instrumentation | (ii) Building Automation |
| (iii) Advanced Microcontroller Techniques | (iii) MEMS |
| (iv) Introduction to Hydraulic Systems | |

## Fourth Year 2026-27 onwards

### Semester- VII

| Sr. No | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PECIN701 | Programme Elective Course-III (online course ) | 3 | 0 | 0 | 3 |
| 2 | OE701 | Open Elective-II (online course) | 2 | 0 | 0 | 2 |
| 3 | RM701 | Research Methodology (online course ) | 3 | 0 | 0 | 3 |
| 4 | INTR701 | Internship (Minimum 12 Weeks) | -- | -- | 12 Weeks (Min.) * | 12 |
| | | Total = | 8 | 0 | 0 | 20 |

### Semester-VIII

| Sr. No | Course Code | Course Title | Lecture | Tutorial | practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PECIN801 | Programme Elective Course-IV | 3 | 0 | 2 | 4 |
| 2 | PECIN802 | Programme Elective Course- V | 3 | 0 | 2 | 4 |
| 3 | MDm801 | Green Manufacturing | 3 | 1 | 0 | 4 |
| 4 | OE801 | Open Elective-III | 3 | 1 | 0 | 4 |
| 5 | PROJ801 | Major Project | 0 | 0 | 8 | 4 |
| | | Total = | 12 | 2 | 12 | 20 |

| PECIN701 Programme Elective Course-III | PECIN801 Programme Elective Course-IV |
|---|---|
| SWAYAM Online Courses related to | (i) Robotics |
| (i) Industrial Internet of Things | (ii) Biosignal and Image Processing |
| (ii) Bio-imaging | (iii) Embedded Product Design |

### PECIN802 Programme Elective Course-V

| (i) Advanced Process Instrumentation |
|---|
| (ii) Artificial Intelligence and Machine Learning |
| (iii) Computer Techniques & Operating Systems |

Suggestion 4(III):    (i) Dr. Bhalchandra Puranik, suggested to ensure that prerequisites for multidisciplinary minor courses are covered.

    (ii) Dr. Dipali Ramdasi told that care has been taken to ensure that prerequisites are covered for multidisciplinary minor courses.

Decision 4(III):    Approval is granted for the course titles as per approved curriculum structure from S.Y. to Final Year B.Tech. Instrumentation & Control Engineering.

Point No. 4(IV)]    **Information Technology**

Discussion :    Dr. Anagha Kulkarni presented course titles as per approved curriculum structure from S.Y. to Final Year B.Tech. UG-Engg. Programmes in Information Technology.

| Second Year – 2024-25 onwards | | | | | | |
|---|---|---|---|---|---|---|
| **Semester-III** | | | | | | |
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
| 1 | PCCIT301 | Data Structures | 3 | 0 | 4 | 5 |
| 2 | PCCIT302 | Computer Networks | 2 | 0 | 2 | 3 |
| 3 | PCCIT303 | Digital Electronics and Computer Architecture | 3 | 0 | 2 | 4 |
| 4 | PCCIT304 | Discrete Mathematics | 2 | 1 | 0 | 3 |
| 5 | OE301 | Open Elective-I | 3 | 0 | 0 | 3 |
| 6 | VEC301 | Universal Human Values | 2 | 1 | 0 | 3 |
| 7 | AEC301 | Design Thinking | 1 | 1 | 0 | 2 |
| | | Total = | 16 | 03 | 8 | 23 |
| **Semester-IV** | | | | | | |
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
| 1 | PCCIT401 | Database Management System | 3 | 0 | 2 | 4 |
| 2 | PCCIT402 | Operating Systems | 3 | 0 | 2 | 4 |
| 3 | PCCIT403 | Object Oriented Paradigms | 2 | 0 | 0 | 2 |
| 4 | CEP401 | Community Engagement Project | 1 | 0 | 2 | 2 |
| 5 | MDm401 | Multidisciplinary Minor Course - I | 3 | 1 | 0 | 4 |
| 6 | VSEC401 | Programming Skills in JAVA Laboratory - I | 0 | 0 | 4 | 2 |
| 7 | EEM401 | Entrepreneurship | 3 | 1 | 0 | 4 |
| | | Total = | 15 | 2 | 10 | 22 |

## Third Year – 2025-26 onwards

### Semester-V

| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PCCIT501 | Design and Analysis of Algorithms | 3 | 1 | 0 | 4 |
| 2 | PCCIT502 | Theory of Computations | 3 | 1 | 0 | 4 |
| 3 | PCCIT503 | Machine Learning | 3 | 0 | 2 | 4 |
| 4 | PCCIT504 | Human Computer Interaction | 2 | 0 | 0 | 2 |
| 5 | PECIT501 | Programme Elective-I | 3 | 0 | 2 | 4 |
| 6 | MDm501 | Multidisciplinary Minor Course - II | 3 | 0 | 2 | 4 |
| | | Total = | 17 | 02 | 6 | 22 |

### Semester-VI

| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PCCIT601 | Software Engineering | 3 | 0 | 0 | 3 |
| 2 | PCCIT602 | Information and Cyber Security | 3 | 0 | 2 | 4 |
| 3 | PCCIT603 | Data Science | 3 | 0 | 2 | 4 |
| 4 | PCCIT604 | Cloud Computing | 3 | 0 | 0 | 3 |
| 5 | PECIT601 | Programme Elective Course-II | 3 | 0 | 2 | 4 |
| 6 | MDm601 | Multidisciplinary Minor Course - III | 2 | 0 | 0 | 2 |
| 7 | VSEC601 | Programming Skill Development Laboratory - II (Mobile Application Development) | 0 | 0 | 4 | 2 |
| | | Total = | 17 | 0 | 10 | 22 |

| PECIT501 Programme Elective Course -I |
|---|
| (i) Artificial Intelligence |
| (ii) Multimedia Techniques |
| (iii) Distributed Systems |

| PECIT601 Programme Elective Course-II |
|---|
| (i) Deep Learning |
| (ii) Animation and Gamification |
| (iii) DevOps |

| Fourth Year – 2026-27 onwards | | | | | | |
|---|---|---|---|---|---|---|
| **Semester-VII** | | | | | | |
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
| 1 | PECIT701 | Programme Elective Course-III | 3 | 0 | 0 | 3 |
| 2 | OE701 | Open Elective-II | 2 | 0 | 0 | 2 |
| 3 | RM701 | Research Methodology | 3 | 0 | 0 | 3 |
| 4 | INTR701 | Internship | -- | -- | 12 Weeks (Min.) * | 12 |
| | | Total = | 08 | 00 | -- | 20 |
| **Semester-VIII** | | | | | | |
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
| 1 | PECIT801 | Programme Elective Course-IV | 3 | 0 | 2 | 4 |
| 2 | PECIT802 | Programme Elective Course-V | 3 | 0 | 2 | 4 |
| 3 | MDm801 | Multidisciplinary Minor Course - IV | 3 | 1 | 0 | 4 |
| 4 | OEC801 | Open elective-III | 3 | 1 | 0 | 4 |
| 5 | PROJ801 | Project | 0 | 0 | 8 | 4 |
| | | Total = | 12 | 02 | 12 | 20 |

| Multidisciplinary Minor Space Technology | | | | | | |
|---|---|---|---|---|---|---|
| Sr. No | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
| 1 | MDm401 | Principles of Space technology | 3 | 1 | 0 | 4 |
| 2 | MDm501 | Space Data Products and Services | 3 | 0 | 2 | 4 |
| 3 | MDm601 | Space Economics, Law, and Policies | 2 | 0 | 0 | 2 |
| 4 | MDm801 | Spacecraft System Engineering | 3 | 1 | 0 | 4 |
| | | Total= | 11 | 2 | 2 | 14 |

Discussion (IV):  (i)  Dr. Kalyani Joshi suggested to offer additional MDM option for Information Technology students.

(ii)  Dr. Ahuja suggested to keep MDM courses proposed by Comp department open for IT students.

Decision (IV):  Academic Council members approved course titles as per approved curriculum structure from S.Y. to Final Year B.Tech. Information Technology.

Point No. 4(V)]  **Mechanical Engineering**

Discussion:  Dr. Ajit Bhosale presented course titles as per approved curriculum structure from S.Y. to Final Year B.Tech. UG-Engg. Programmes in Mechanical Engineering.

| Second Year – 2024-25 onwards |
|---|

### Second Year – 2024-25 onwards

#### Semester-III

| Sr. No | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PCCME301 | Strength of Materials | 3 | 1 | 0 | 4 |
| 2 | PCCME302 | Manufacturing Engineering | 3 | 0 | 2 | 4 |
| 3 | PCCME303 | Engineering Thermodynamics | 3 | 0 | 0 | 3 |
| 4 | PCCME304 | Engineering Materials | 3 | 0 | 2 | 4 |
| 5 | OE301 | Open Elective-I | 3 | 0 | 0 | 3 |
| 6 | VEC301 | Universal Human Values | 2 | 1 | 0 | 3 |
| 7 | AEC301 | Design Thinking | 1 | 1 | 0 | 2 |
| | | Total = | 16 | 3 | 04 | 23 |

#### Semester-IV

| Sr. No. | Course Code | Course Title | Lecture | Tutorial | practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PCCME401 | Analysis and Synthesis of Mechanisms | 3 | 0 | 2 | 4 |
| 2 | PCCME402 | Fluid Mechanics and Machines | 3 | 0 | 2 | 4 |
| 3 | PCCME403 | Advanced Manufacturing Engineering | 3 | 0 | 2 | 4 |
| 4 | CEP401 | Community Engagement Project | 1 | 0 | 2 | 2 |
| 5 | MDm401 | Multidisciplinary Minor Course - I | 3 | 0 | 0 | 3 |
| 6 | VSEC401 | Laboratory - I (Rapid Prototyping) | 0 | 0 | 2 | 1 |
| 7 | EEM-401 | Entrepreneurship | 3 | 1 | 0 | 4 |
| | | Total = | 16 | 01 | 10 | 22 |

- **Open Elective – I**

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## Third Year – 2025-26 onwards

### Semester-V

| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PCCME501 | Heat transfer | 3 | 0 | 2 | 4 |
| 2 | PCCME502 | Measurement and Quality Control | 2 | 0 | 2 | 3 |
| 3 | PCCME503 | Machine Design | 3 | 1 | 0 | 4 |
| 4 | PCCME504 | Computer Aided Engineering (CAE) | 3 | 0 | 2 | 4 |
| 5 | PECME501 | Programme Elective-I | 2 | 0 | 2 | 3 |
| 6 | MDm501 | Multidisciplinary Minor Course 2 | 3 | 0 | 2 | 4 |
| | | Total = | 16 | 1 | 10 | 22 |

### Semester-VI

| Sr. No. | Course Code | Course Title | Lecture | Tutorial | practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PCCME601 | Applied Thermodynamics | 3 | 0 | 2 | 4 |
| 2 | PCCME602 | System Dynamics- Modelling and Simulation | 3 | 0 | 2 | 4 |
| 3 | PCCME603 | Industrial Engineering and Operational Research | 3 | 0 | 0 | 3 |
| 4 | PCCME604 | Robotics and Control | 3 | 0 | 0 | 3 |
| 5 | PECME601 | Programme Elective -II | 3 | 0 | 2 | 4 |
| 6 | MDm-601 | Multidisciplinary Minor Course 3 | 3 | 0 | 2 | 4 |
| 7 | VSEC-601 | Laboratory - II Numerical Methods | 0 | 0 | 2 | 1 |
| | | Total = | 18 | 00 | 10 | 23 |

| Programme Elective-I |
|---|
| (i) Introduction to Hydraulic Systems |
| (ii) Digital Manufacturing |
| (iii) IOT for Mechanical Engineering |

| Programme Elective Course-II |
|---|
| (i) Computational Fluid Dynamics |
| (ii) Finite Element Analysis |
| (iii) Design Optimization |

## Fourth Year – 2026-27 onwards

### Semester-VII

| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PECME701 | Programme Elective Course-III (online course) | 3 | 0 | 0 | 3 |
| 2 | OE701 | Open Elective-II (online course ) | 2 | 0 | 0 | 2 |
| 3 | RM701 | Research Methodology (online course ) | 3 | 0 | 0 | 3 |
| 4 | INTR701 | Internship | -- | -- | 12 Weeks *(Min.)* * | 12 |
| | | Total = | 08 | 00 | -- | 20 |

### Semester-VIII

| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
|---|---|---|---|---|---|---|
| 1 | PECME801 | Programme Elective Course-IV | 3 | 0 | 2 | 4 |
| 2 | PECME802 | Programme Elective Course-V | 3 | 0 | 2 | 4 |
| 3 | MDm801 | Multidisciplinary Minor Course 4 | 3 | 0 | 0 | 3 |
| 4 | OEC801 | Open elective-III | 3 | 1 | 0 | 4 |
| 5 | PROJ801 | Project | 0 | 0 | 8 | 4 |
| | | Total = | 12 | 01 | 12 | 19 |

| Programme Elective Course-III |
|---|
| Online Course available on Online Platform |

| Programme Elective Course-IV: |
|---|
| (i)   Turbines and Pumps |
| (ii)  Intelligent Hydraulic Systems |
| (iii) Refrigeration and Air conditioning |

| Programme Elective Course-V: |
|---|
| (i)   Power Train Design |
| (ii)  Experimental Modal Analysis |
| (iii) Mechanics of Composite Materials |

| Multidisciplinary Minor AI and ML for Mechanical Engineering | | | | | | |
|---|---|---|---|---|---|---|
| Sr. No. | Course Code | Course Title | Lecture | Tutorial | Practical | Credits |
| 1 | MDm401 | Statistics and Probability for Data science | 3 | 0 | 0 | 3 |
| 2 | MDm501 | AI and ML Foundations | 3 | 0 | 2 | 4 |
| 3 | MDm601 | Applied AIML for mechanical Engineering | 3 | 0 | 2 | 4 |
| 4 | MDm801 | Business Intelligence | 3 | 0 | 0 | 3 |
| | | Total = | 12 | 00 | 4 | 14 |

Discussion3(V):   (i)   Dr Ahuja suggested if possible Hydraulics and pneumatics can be included in core subjects.

(ii)   Dr. Puranik appreciated introduction of AI ML for Mechanical engineering as multidisciplinary minor.

Decision : 3(V)   Academic Council members approved course titles as per approved curriculum structure from S.Y. to Final Year B.Tech. Mechanical Engineering.

Point No. 4 (VI)   List of open electives

Discussion :   (i)   List of open electives i.e. course options available for students of more than one program was presented as below.

| | |
|---|---|
| Open elective –I options<br><br>(OE 301) | Introduction to Digital Marketing |
| | Intellectual Property Rights |
| | Project Management |
| | Organizational Behavior |
| | Law for Engineers |
| Open elective II options<br><br>(OE 701)<br><br>(To be offered in online mode) | Wireless Networks |
| | E-Business |
| | Gamification |
| | Introduction to Cyber Security |
| | Technologies in banking |
| | Green Computing |
| | Digital Manufacturing |
| | Fundamentals of Electric Vehicles |
| | Avionics |
| | Building Management Systems |
| Open elective III options<br><br>(OE 801) | Computer Vision |
| | Soft Computing |
| | Human Machine Interface |
| | Bigdata Analytics |
| | Automobile Engineering |
| | Graphics and AR-VR |
| | Software Testing and Quality Assurance |
| | Renewable Energy Technology |
| | Smart Sensors and Systems |

| | |
|---|---|
| (ii) | Dr. Khambete said that these courses are designed in such way that students will get opportunity to study multidisciplinary/interdisciplinary topics. However if level of such course is introductory and students of particular program have studied similar course at higher level then such course is not open for these students. E.g. 'Automobile Engineering' is not open for mechanical engineering students but open for remaining students. |
| (iii) | Dr. Ahuja suggested to define the rules for opting the course clearly considering whether required prerequisites are covered or not. |

**Decision**

It is decided to define prerequisites for all open elective courses.

**Point No. 4]**

To discuss changes in examination rules for grace marks.

**Discussion :**

(a) Dr. Ashok Khedkar, Dean Examination proposed following rules for grace marks.

**Grace Mark Rules:**

If the student fails in the theory course, grace marks shall be allotted for passing the course as follows:

(i) 2 grace marks for 50-marks course

(ii) 3 grace marks for 100-marks course

(iii) The grace marks shall be allotted for only one course per semester, in regular/ summer as well as for the backlog examinations.

(b) Dr. Ashok Khedkar, Dean Examination proposed following rules for condonation marks

**Proposed rule for condonation:**

(i) If the student fails in only one theory course even after the summer examination, then 1% of the total marks of that academic year or 10 marks, whichever is the minimum shall be allotted.

(ii) Further, 'Grace Marks and Condonation Rule' shall not be applied to the same course.

(c) Dr. Ashok Khedkar, Dean Examination proposed to extend the revaluation scheme for summer examinations also.

**Revaluation for Summer Examinations:**

Dr. Khedkar said that revaluation scheme is available for regular as well as backlog examination. He proposed to extend the revaluation scheme for summer examination also.

**Decision :**

(i) Academic Council members approved rules related to grace marks and condonation.

(ii) Permission is granted to extend revaluation scheme for summer examination.

(iii) It is decided to apply these rules from AY 2023-24

Point No. 4]     Following additional point was discussed with the permission of Chair.

Point No. (i)    Permission to start Minor Degree Program in Quantum Technologies.

Discussion :     Dr. Vikram Athalye presented the background for the introduction of the minor degree programme in "Quantum Technologies" and also proposed its structure consisting of 18 credits.

Suggestion :     Taking into consideration the advanced level of the courses, AC members suggested to explore the students' interest in opting for the programme by conducting a workshop.

Decision :       It is decided to conduct workshop on "Quantum Technologies" to explore students interest for opting this course.


Dr. Anand Bewoor
Dean Academics
Member Secretary - Academic Council
MKSSS's Cummins College of Engineering for Women, Pune

Dr. Madhuri Khambete
Principal
Chairman - Academic Council
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