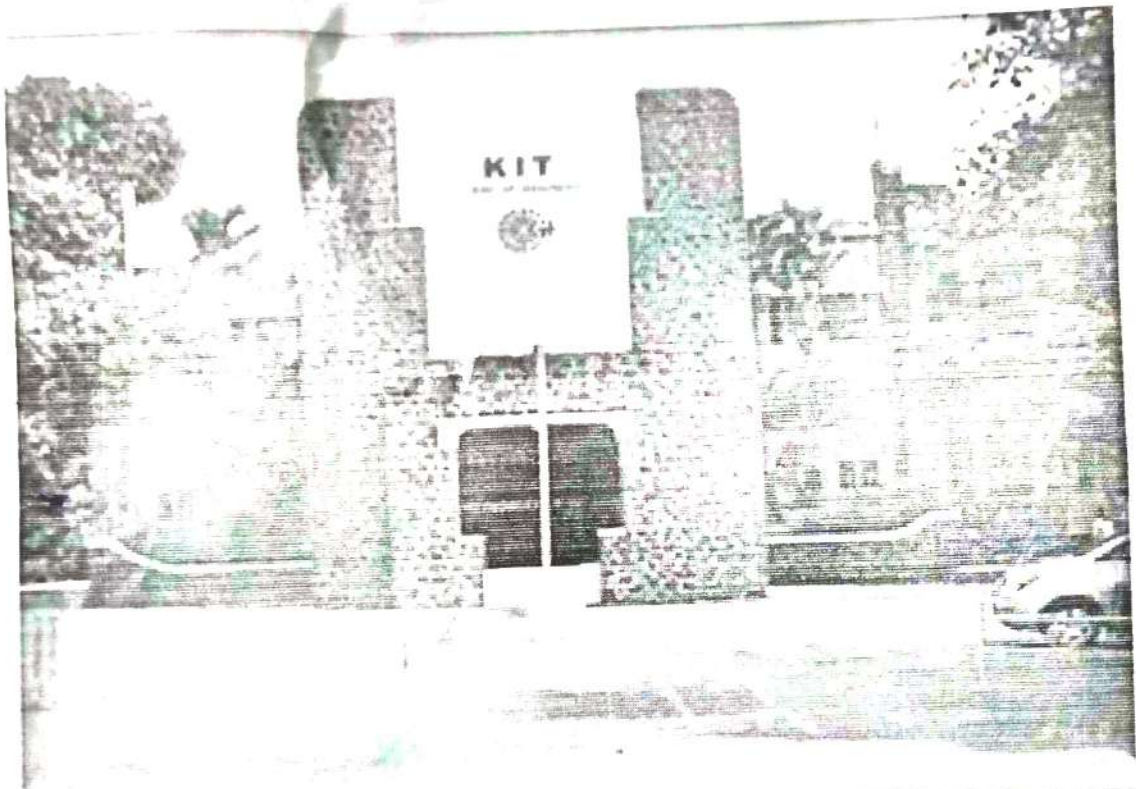


**Kolhapur Institute of Technology's  
College of Engineering  
(Empowered Autonomous), Kolhapur**



KOLHAPUR INSTITUTE  
OF TECHNOLOGY'S  
**COLLEGE OF  
ENGINEERING**  
(EMPOWERED AUTONOMOUS)  
KOLHAPUR



**Department of Mechanical Engineering**

**Curriculum and Syllabus for**

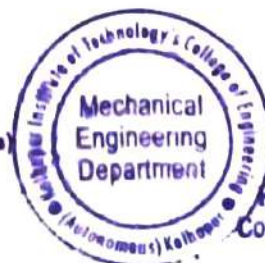
**Final Year**

**B. Tech. Mechanical Engineering**

**Scheme: 2026-27 (As Per NEP)**

*Calal*  
P. R. Murtalika  
Academic Coordinator

*ABC*  
Dt. U. S. Bhapkar  
Head  
Department of Mechanical Engg.  
Kolhapur Institute of Technology's  
College of Engineering (Autonomous)  
Kolhapur



*M. S. Patil*  
Dean Academics  
Kolhapur Institute of Technology's  
College of Engineering (Autonomous),  
Kolhapur

**SEMESTER VII**

| Sr. No.       | Category | Course Code | Course Name                                   | L | T | P | Hrs. / Week | Credits   | Evaluation Scheme                            |       |     |
|---------------|----------|-------------|-----------------------------------------------|---|---|---|-------------|-----------|----------------------------------------------|-------|-----|
|               |          |             |                                               |   |   |   |             |           | Component                                    | Marks |     |
|               |          |             |                                               |   |   |   |             |           |                                              | Max   | Min |
| 1             | PC       | UMEPC0701   | Industrial Automation and Robotics            | 3 | 0 | 0 | 3           | 3         | ISE1                                         | 10    | 40  |
|               |          |             |                                               |   |   |   |             |           | MSE                                          | 30    |     |
|               |          |             |                                               |   |   |   |             |           | ISE2                                         | 10    |     |
|               |          |             |                                               |   |   |   |             |           | ESE                                          | 50    |     |
| 2             | PC       | UMEPC0702   | Advanced Manufacturing Engineering            | 3 | 0 | 0 | 3           | 3         | ISE1                                         | 10    | 40  |
|               |          |             |                                               |   |   |   |             |           | MSE                                          | 30    |     |
|               |          |             |                                               |   |   |   |             |           | ISE2                                         | 10    |     |
|               |          |             |                                               |   |   |   |             |           | ESE                                          | 50    |     |
| 3             | PC       | UMEPC0703   | HVAC and Refrigeration Systems                | 3 | 0 | 0 | 3           | 3         | ISE1                                         | 10    | 40  |
|               |          |             |                                               |   |   |   |             |           | MSE                                          | 30    |     |
|               |          |             |                                               |   |   |   |             |           | ISE2                                         | 10    |     |
|               |          |             |                                               |   |   |   |             |           | ESE                                          | 50    |     |
| 4             | PEC      | UMEPE071*   | Program Elective-III                          | 3 | 0 | 0 | 3           | 3         | ISE1                                         | 10    | 40  |
|               |          |             |                                               |   |   |   |             |           | MSE                                          | 30    |     |
|               |          |             |                                               |   |   |   |             |           | ISE2                                         | 10    |     |
|               |          |             |                                               |   |   |   |             |           | ESE                                          | 50    |     |
| 5             | OE       | UMEOE072*   | Open Elective- III                            | 2 | 0 | 0 | 2           | 2         | ISE1                                         | 10    | 40  |
|               |          |             |                                               |   |   |   |             |           | MSE                                          | 30    |     |
|               |          |             |                                               |   |   |   |             |           | ISE2                                         | 10    |     |
|               |          |             |                                               |   |   |   |             |           | ESE                                          | 50    |     |
| 6             | PC       | UMEPC0731   | Industrial Automation and Robotics Laboratory | 0 | 0 | 2 | 2           | 1         | ISE                                          | 25    | 10  |
|               |          |             |                                               |   |   |   |             |           | ESE(OE)                                      | 25    | 10  |
| 7             | PC       | UMEPC0732   | HVAC and Refrigeration Laboratory             | 0 | 0 | 2 | 2           | 1         | ISE                                          | 25    | 10  |
|               |          |             |                                               |   |   |   |             |           | ESE(POE)                                     | 25    | 10  |
| 8             | RM       | UMEIL0771   | Project-I                                     | 0 | 0 | 8 | 8           | 4         | ISE                                          | 50    | 20  |
|               |          |             |                                               |   |   |   |             |           | ESE(OE)                                      | 50    | 20  |
| 9             | MM       | UMEMM074*   | Multi Disciplinary Minor                      | 3 | 0 | 0 | 3           | 3         | ESE                                          | 100   | 40  |
| <b>Total:</b> |          |             |                                               |   |   |   | <b>29</b>   | <b>23</b> | <b>Total Marks: 800<br/>Total Credit: 23</b> |       |     |

**PROGRAM ELECTIVE-III**

| Sr. No.       | Course Code | Course Name                                 | L | T | P | Hrs. / Week | Credits  |
|---------------|-------------|---------------------------------------------|---|---|---|-------------|----------|
| 1             | UMEPE0711   | Design of Mechanical Systems                | 3 | 0 | 0 | 3           | 3        |
| 2             | UMEPE0712   | Engineering Management                      | 3 | 0 | 0 | 3           | 3        |
| 3             | UMEPE0713   | Enterprise Resource Planning                | 3 | 0 | 0 | 3           | 3        |
| 4             | UMEPE0714   | Thermal Management and Electronic Packaging | 3 | 0 | 0 | 3           | 3        |
| <b>Total:</b> |             |                                             |   |   |   | <b>3</b>    | <b>3</b> |

**Multi Minor Courses****Track: Major in Mechanical Engineering with Minor in Artificial Intelligence and Machine Learning**

| Sr. No. | Course Code | Course Name      | L | T | P | Hrs. / Week | Credits |
|---------|-------------|------------------|---|---|---|-------------|---------|
| 5       | UMEMM0741   | Machine Learning | 3 | 0 | 0 | 3           | 3       |

**Multi Minor Courses****Track : Major in Mechanical Engineering with Minor in Electrical and Electronics Technology**

| Sr. No. | Course Code | Course Name        | L | T | P | Hrs. / Week | Credits |
|---------|-------------|--------------------|---|---|---|-------------|---------|
| 5       | UMEMM0742   | Internet of Things | 3 | 0 | 0 | 3           | 3       |

**Multi Minor Courses****Track : Major in Mechanical Engineering with Minor in Automotive Technology**

| Sr. No. | Course Code | Course Name               | L | T | P | Hrs. / Week | Credits |
|---------|-------------|---------------------------|---|---|---|-------------|---------|
| 5       | UMEMM0743   | Vehicle Management System | 3 | 0 | 0 | 3           | 3       |

**SEMESTER VIII**

| Sr. No.       | Category | Course Code | Course Name                 | L | T | P  | Hrs. / Week | Credits   | Evaluation Scheme                            |       |     |    |
|---------------|----------|-------------|-----------------------------|---|---|----|-------------|-----------|----------------------------------------------|-------|-----|----|
|               |          |             |                             |   |   |    |             |           | Component                                    | Marks |     |    |
|               |          |             |                             |   |   |    |             |           |                                              | Max   | Min |    |
| 1             | PEC      | UMEPE081*   | Program Elective-IV         | 3 | 0 | 0  | 3           | 3         | ISE1                                         | 10    | 20  | 40 |
|               |          |             |                             |   |   |    |             |           | MSE                                          | 30    |     |    |
|               |          |             |                             |   |   |    |             |           | ISE2                                         | 10    |     |    |
|               |          |             |                             |   |   |    |             |           | ESE                                          | 50    |     |    |
| 2             | PEC      | UMEPE081*   | Program Elective-V          | 3 | 0 | 0  | 3           | 3         | ISE1                                         | 10    | 20  | 40 |
|               |          |             |                             |   |   |    |             |           | MSE                                          | 30    |     |    |
|               |          |             |                             |   |   |    |             |           | ISE2                                         | 10    |     |    |
|               |          |             |                             |   |   |    |             |           | ESE                                          | 50    |     |    |
| 3             | RP       | UMEIL0871   | Project-II                  | 0 | 0 | 8  | 8           | 4         | ISE                                          | 50    | 20  |    |
|               |          |             |                             |   |   |    |             |           | ESE(OE)                                      | 50    | 20  |    |
| 4             | OJT      | UMEIL0872   | Internship                  | 0 | 0 | 12 | 12          | 6         | ISE                                          | 75    | 30  |    |
|               |          |             |                             |   |   |    |             |           | ESE(OE)                                      | 75    | 30  |    |
| 5             | CC       | UMECC0831   | Co-Curricular Activities-IV | 0 | 0 | 2  | 2           | 1         | ISE                                          | 50    | 20  |    |
| <b>Total:</b> |          |             |                             |   |   |    | <b>28</b>   | <b>17</b> | <b>Total Marks: 500<br/>Total Credit: 17</b> |       |     |    |

**PROGRAM ELECTIVE-IV**

| Sr. No.       | Course Code | Course Name                     | L | T | P | Hrs. / Week | Credits  |
|---------------|-------------|---------------------------------|---|---|---|-------------|----------|
| 1             | UMEPE0811   | Six Sigma in Quality Management | 3 | 0 | 0 | 3           | 3        |
| 2             | UMEPE0812   | Industrial Engineering          | 3 | 0 | 0 | 3           | 3        |
| 3             | UMEPE0813   | Advanced Energy Technology      | 3 | 0 | 0 | 3           | 3        |
| 4             | UMEPE0814   | Operations Research             | 3 | 0 | 0 | 3           | 3        |
| <b>Total:</b> |             |                                 |   |   |   | <b>3</b>    | <b>3</b> |

**PROGRAM ELECTIVE-V**

| Sr. No.       | Course Code | Course Name              | L | T | P | Hrs. / Week | Credits  |
|---------------|-------------|--------------------------|---|---|---|-------------|----------|
| 1             | UMEPE0815   | Advanced Composites      | 3 | 0 | 0 | 3           | 3        |
| 2             | UMEPE0816   | Industry 5.0             | 3 | 0 | 0 | 3           | 3        |
| 3             | UMEPE0817   | Cryogenics               | 3 | 0 | 0 | 3           | 3        |
| 4             | UMEPE0818   | Process Equipment Design | 3 | 0 | 0 | 3           | 3        |
| <b>Total:</b> |             |                          |   |   |   | <b>3</b>    | <b>3</b> |

## Emerging Minor Courses

### Track: Emerging Minor in Green Technology

| Sr. No. | Course Code | Course Name            | L | T | P | Hrs. / Week | Credits |
|---------|-------------|------------------------|---|---|---|-------------|---------|
| 5       | UMEMN0761   | Energy Storage Systems | 2 | 0 | 0 | 2           | 2       |

## B Tech Honors (Core Engineering Domain) (Robotics)

| Sr. No. | Course Code | Course Name  | L | T | P | Hrs. / Week | Credits |
|---------|-------------|--------------|---|---|---|-------------|---------|
| 5       | UMEHN0711   | Mini Project | 0 | 0 | 4 | 4           | 2       |