

**School of Engineering Sciences**  
**Department of Mechanical Engineering**



**RBU**

**RAMDEOBABA UNIVERSITY, NAGPUR**  
Formerly Shri Ramdeobaba College of Engineering & Management (RCOEM) Est. 1984  
LEARN | INNOVATE | ACCOMPLISH

**PROGRAMME SCHEME**

**M. Tech. in Industrial Automation and Robotics 2025-26**

**Total Credits: 80**

## M. Tech. in Industrial Automation and Robotics

### SEM-I

| SN                        | Course Code  | Course Name                                      | L         | P         | S         | Total     | Credits   | Maximum Marks         |                      | Total      | ESE Duration (Hrs) | Category |
|---------------------------|--------------|--------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------------------|----------------------|------------|--------------------|----------|
|                           |              |                                                  |           |           |           |           |           | Continuous Assessment | End Sem. Examination |            |                    |          |
| 1                         | 24ES55TH1175 | Research Methodology and IPR                     | 3         | -         | 2         | 3         | 3         | 50                    | 50                   | 100        | 3                  | PC       |
| 2                         | 24ES55TH1176 | Principles of Robotics                           | 3         | -         | 2         | 3         | 3         | 50                    | 50                   | 100        | 3                  | PC       |
| 3                         | 24ES55TH1177 | Robot Drives and Actuators                       | 3         | -         | 2         | 3         | 3         | 50                    | 50                   | 100        | 3                  | PC       |
| 4                         | 24ES55TH1178 | Control System                                   | 3         | -         | 2         | 3         | 3         | 50                    | 50                   | 100        | 3                  | PC       |
| 5                         | 24ES55TH1179 | Economics and Financial Management               | 3         |           | 2         | 3         | 3         | 50                    | 50                   | 100        | 3                  | PC       |
| 6                         | 24ES55TH1180 | Program Elective-1                               | 3         | -         | 2         | 3         | 3         | 50                    | 50                   | 100        | 3                  | PE       |
| 7                         | 24ES55PR1181 | Robotics Lab                                     |           | 4         |           | 4         | 2         | 50                    | -                    | 50         |                    | PC       |
| 8                         | 24ES55PR1182 | Control System Lab                               | -         | 4         |           | 4         | 2         | 50                    | -                    | 50         | -                  | PC       |
| 9                         | 24ES55PR1183 | Design thinking, Innovation and Entrepreneurship | -         | 2         | -         | 2         | 1         | 50                    | -                    | 50         | -                  | PC       |
| 10                        | 24ES55TH1184 | Professional Practices and Ethics                | 1         | -         |           | 1         | 1         | 50                    | -                    | 50         | -                  | PC       |
|                           |              | <b>Total</b>                                     | <b>19</b> | <b>10</b> | <b>12</b> | <b>29</b> | <b>24</b> | <b>500</b>            | <b>300</b>           | <b>800</b> |                    |          |
| <b>Program Elective-1</b> |              |                                                  |           |           |           |           |           |                       |                      |            |                    |          |
| <b>Course Code</b>        |              | <b>Program Elective-1</b>                        |           |           |           |           |           |                       |                      |            |                    |          |
| 24ES55TH1180-1            |              | Mobile Robotics                                  |           |           |           |           |           |                       |                      |            |                    |          |
| 24ES55TH1180-2            |              | Advanced Optimization Techniques                 |           |           |           |           |           |                       |                      |            |                    |          |
| 24ES55TH1180-3            |              | Product Design and Process Planning              |           |           |           |           |           |                       |                      |            |                    |          |

# M. Tech. in Industrial Automation and Robotics

## SEM-II

| SN | Course Code  | Course Name                          | L         | P         | S         | Total     | Credits   | Maximum Marks         |                          | Total      | ESE Duration (Hrs) | Category |
|----|--------------|--------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------------------|--------------------------|------------|--------------------|----------|
|    |              |                                      |           |           |           |           |           | Continuous Assessment | End Semester Examination |            |                    |          |
| 1  | 24ES55TH1285 | Industrial Automation                | 3         | -         | 2         | 3         | 3         | 50                    | 50                       | 100        | 3 Hrs              | PC       |
| 2  | 24ES55TH1286 | Artificial Intelligence              | 3         | -         | 2         | 3         | 3         | 50                    | 50                       | 100        | 3 Hrs              | PC       |
| 3  | 24ES55TH1287 | Robotic Vision Systems               | 3         | -         | 2         | 3         | 3         | 50                    | 50                       | 100        | 3 Hrs              | PC       |
| 4  | 24ES55TH1288 | Industrial Hydraulics and Pneumatics | 3         | -         | 2         | 3         | 3         | 50                    | 50                       | 100        | 3 Hrs              | PC       |
| 5  | 24ES55TH1289 | Program Elective -2                  | 3         | -         | 2         | 3         | 3         | 50                    | 50                       | 100        | 3 Hrs              | PE       |
| 6  | 24ES55TH1290 | Open Elective-1                      | 3         | -         | 2         | 3         | 3         | 50                    | 50                       | 100        | 3 Hrs              | OE       |
| 7  | 24ES55PR1291 | Industrial Automation and IoT Lab    | -         | 4         | -         | 4         | 2         | 50                    | -                        | 50         | -                  | PC       |
| 9  | 24ES55PR1292 | Artificial Intelligence Lab          | -         | 4         | -         | 4         | 2         | 50                    | -                        | 50         | -                  | PC       |
| 10 | 24ES55PR1293 | Technical Seminar                    | -         | 4         | -         | 4         | 2         | 50                    | -                        | 50         | -                  | PC       |
|    |              | <b>Total</b>                         | <b>18</b> | <b>12</b> | <b>12</b> | <b>30</b> | <b>24</b> | <b>450</b>            | <b>300</b>               | <b>750</b> | <b>18</b>          | <b>-</b> |

| Course Code    | Program Elective -2                  |
|----------------|--------------------------------------|
| 24ES55TH1289-1 | Bioinspired Robotics                 |
| 24ES55TH1289-2 | Automated Manufacturing System       |
| 24ES55TH1289-3 | Industrial Internet of Things (IIoT) |

| Course Code    | Open Elective          |
|----------------|------------------------|
| 24ES55TH1290-1 | Industrial robotics    |
| 24ES55TH1290-2 | Automation Engineering |

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**Exit Option:** On completion of the first year and the eight-week industry internship, students have the EXIT option to qualify for a PG Diploma in Industrial Automation and Robotics

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## M. Tech. in Industrial Automation and Robotics

### SEM-III

| SN | Course Code  | Course Name            | L        | P        | S        | Total    | Credits   | Maximum Marks         |                          | Total      | ESE Duration (Hrs) | Category |
|----|--------------|------------------------|----------|----------|----------|----------|-----------|-----------------------|--------------------------|------------|--------------------|----------|
|    |              |                        |          |          |          |          |           | Continuous Assessment | End Semester Examination |            |                    |          |
| 1  | 24ES55TH1394 | Program Elective -3    | 2        | -        | 2        | 2        | 2         | 50                    | 50                       | 100        | 3 Hrs              | PC       |
| 2  | 24ES55PR1395 | Dissertation Phase - I | -        | 3        |          | 3        | 12        | 100                   | 100                      | 200        |                    | PC       |
|    |              | <b>Total</b>           | <b>2</b> | <b>3</b> | <b>2</b> | <b>5</b> | <b>14</b> | <b>150</b>            | <b>250</b>               | <b>400</b> |                    |          |

**OR**

|   |              |                                                                                          |  |  |  |  |    |     |     |     |  |    |
|---|--------------|------------------------------------------------------------------------------------------|--|--|--|--|----|-----|-----|-----|--|----|
| 3 | 24ES55PR1396 | Industry Internship-Phase-I /<br>Research Internship-Phase-I<br>/ TBI Internship-Phase-I |  |  |  |  | 14 | 150 | 250 | 400 |  | PC |
|---|--------------|------------------------------------------------------------------------------------------|--|--|--|--|----|-----|-----|-----|--|----|

| Course Code    | Program Elective-3      |
|----------------|-------------------------|
| 24ES55TH1394-1 | Supply Chain Management |
| 24ES55TH1394-2 | Rapid Prototyping       |
| 24ES55TH1394-3 | Project Management      |



## M. Tech. in Industrial Automation and Robotics

### SEM-IV

| SN        | Course Code  | Course Name                                                                         | L | P | S | Total | Credits | Maximum Marks         |                          | Total | ESE Duration (Hrs) | Category |
|-----------|--------------|-------------------------------------------------------------------------------------|---|---|---|-------|---------|-----------------------|--------------------------|-------|--------------------|----------|
|           |              |                                                                                     |   |   |   |       |         | Continuous Assessment | End Semester Examination |       |                    |          |
| 1         | 24ES55PR1497 | Dissertation Phase-II                                                               | - | 6 |   | 6     | 18      | 200                   | 200                      | 400   |                    | PC       |
| <b>OR</b> |              |                                                                                     |   |   |   |       |         |                       |                          |       |                    |          |
| 2         | 24ES55PR1498 | Industry Internship-Phase-II / Research Internship-Phase-II/TBI Internship-Phase-II |   |   |   |       | 18      | 200                   | 200                      | 400   |                    | PC       |

*SS Pund*

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