

Consolidated Feedback Report on Curriculum for 3rd BOS 2025 for B. Tech Robotics and Automation Program

Summary

Program: B. Tech in Robotics and Automation

Stakeholders: Alumni, Employers/Industry Experts

Total Responses Received: 6 (5 through Google form and 1 through email)

Alumni Responses: 3

Employer/Industry expert responses: 2

Detailed Report

1. Relevance of Curriculum to Industry Needs

Response Type	Count
Extremely relevant	1
Highly relevant	3
Moderately relevant	1
Not relevant	0

Majority (80%) find the curriculum highly or extremely relevant to current industry demands.

2. Key Skills Recommended

Frequently mentioned skills:

- Robot Operating System (ROS/ROS2)
- Python programming
- Simulation tools
- Problem Solving & Analysis
- Data Engineering for IIoT
- AI & Machine Learning (implicitly through skill context)
- PLC/SCADA programming for industrial automation.

3. Adequacy of Skill Coverage

Response	Count
Yes	4
No	1

Most respondents believe the curriculum adequately covers key skills.

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4. Courses to be Updated or Removed

Some specific suggestions include:

- Drop Engineering Chemistry (CHM102C): Considered unnecessary for this specialization.
- Enhance Python & MATLAB training: Suggestion for 2 dedicated courses.
- Add focus on Problem Solving and Analysis.
- Include Data Engineering module under IIoT course.

Mr. Nirmal Singh (Industry Expert) from Festo identified the following courses in the curriculum where practical part could be improved as per the demand of the industry which are as follows:

1. Industrial Internet of things (IIOT), Course code: MEC 367C (Practicals 2 hrs per week – 6th semester:
 - a. Suggestion: He advocated to provide the learning environment for Real time implementation of Industry4.0
2. Industrial automation with PLC and SCADA, course code: MEC417C (Practicals 2 hrs per week – 7th semester):
 - a. Suggestion: Siemens being holding major industrial market, should also need to be included in the practices, along with Rockwell systems.
3. Hydraulics and Pneumatics, course code: MEC419C (Practicals 2hrs per week – 7th semester): **Basic Pneumatics, Electro-Pneumatics, Basic Hydraulics, Electro-Hydraulics.**
 - a. Suggestion: Proportional Hydraulics shall be included to map the requirements with industries.
4. Electrical Machines and actuators course code: MEC217C (practicals 2hrs per week – 3rd semester):
 - a. Suggestion: Industrial stepper and Servo based positioning, speed and Torque control on linear and rotary axis.

5. New Courses or Topics Recommended

- ROS2 and Middleware
- Robot functional safety
- Overview of Marine Robotics
- Short assignments on simulation environments

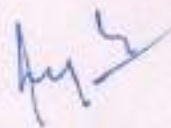
6. Gaps Between Curriculum & Industry Expectations

Concerns:

- Little hands on practice, Limited exposure to digital twins workflows, soft skills on project management, compliance and lifecycle costing.

7. Willingness to Engage with Department

All respondents are willing to contribute through:



- Mentoring students
- Guest lectures
- Providing internships

Encouraging sign of stakeholder collaboration and support.

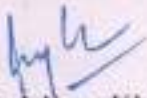
8. Additional Suggestions

- Incorporate **short, creative assignments**
- Emphasize **online lecture recordings and evaluations**
- Mandatory projects, internships, online lecturers from manufacturers and suppliers.
- Purchasing a few robotic arms and letting students work with them using ROS (Robot Operating System) would be very helpful for students.

Recommendations

1. **Revise curriculum** to include more ROS2-based training.
2. **Replace/remove low-impact courses** (e.g., Engineering Chemistry).
3. **Introduce Data Engineering and Marine Robotics** electives.
4. **Expand hands-on opportunities** via internships, simulations, and industry-linked projects.
5. **Strengthen industry ties** through structured mentoring and guest lectures.

Submitted for further necessary action



Dr. M. Jebran Khan
Assistant Professor
Coordinator Feedback (BoS 2025 RA)

Dated: 23/06/2025

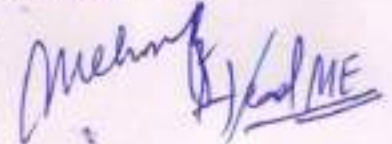
*Please ask concerned faculty members
or the designated groups to incorporate
the above suggestions viz a viz feasibility.*



Dr. Mehrez Rasool

*The recommendations/suggestions have been
incorporated by the concerned faculty members and
shall be placed before the BOS (2025) RA.*

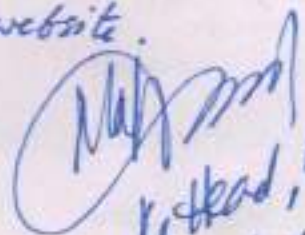
R.T.O.



The recommendations & the changes incorporated
may be placed before BOS & the same may be uploaded
on dept website.

Dr. Ovais Gulzar.

Coordinator BOS (RA).


Nadeem, MB
23/06/2025