Submission deadline: 27th Nov, 2025 by 10:00 hrs

MT 574 Industrial Automation and Robotics Technology

Term Project Proposal
FALL 2025
Department of Mechatronics Engineering
Atilim University, Islamabad

In this course, special emphasis is placed on developing your understanding of robotics and strengthening your ability to implement robotic solutions in simulated environments such as RoboDK. You are required to work in groups of two and prepare a one- to two-page project proposal.

The proposed project must involve the complete development, simulation, and analysis of an automated industrial robotic task. The objective is to design and validate a full robotic workflow using RoboDK's versatile simulation and offline programming capabilities.

Your project should be based on a real-world industrial application such as pick-and-place, welding, painting, palletizing, or sorting. Additionally, you may choose to extend the project by integrating external control using RoboDK's APIs for MATLAB, Python, or C++.

Key components of the project include selecting an appropriate industrial robot suited to the chosen task, configuring the work cell layout, planning and optimizing robot motion paths, and evaluating workspace constraints. The simulation will serve as a tool to assess the feasibility, accuracy, and efficiency of the robotic system.

The one- to two-page proposal should clearly outline the selected task, a preliminary sketch or layout of the work cell, project objectives, anticipated challenges, and the expected deliverables.

For inspiration, you can refer to these links:

https://www.youtube.com/watch?v=pr2dbUYgPNw
https://www.fanucamerica.com/solutions/industries/automotive-robots#paint
https://www.youtube.com/watch?v=tIIJME8-au8

Good Luck