

## Module Name: (A.3) Advanced Robotics

### Aim

This module aims to introduce the main principles of robotics including modern robot applications development concepts and tools.

### Learning Objectives

The learning objectives include the review of kinematics and navigation concepts in robotics and the introduction of development frameworks towards the implementation of real-world robotics applications.

### Learning Outcomes

On successful completion of this module, students should be able to:

- Understand the principles of robotic arm motion
- Select the most appropriate techniques for navigation of a robotic system
- Develop skills in programming of a social robot
- Develop skills in software implementation in ROS
- Assess generally the aspects of developing fully autonomous robots.
- Develop the skills required to carry out research and development in the industry or academia.

### Bibliography

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- [8] Siciliano, B., & Khatib, O.. Springer Handbook of Robotics. In B. Siciliano & O. Khatib (Eds.), *Springer Handbook of Robotics*. Springer International Publishing. 2016. <https://doi.org/10.1007/978-3-319-32552-1>
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