Module code | SS-4311
---|---
Module Title | Robot Programming
Degree/Diploma | Bachelor of Science (Computer Science)
Type of Module | Major Option
Modular Credits | 4
Total student Workload | 10 hours/week
Contact hours | 4 hours/week
Prerequisite | SS-1204 Computer Architecture and Organisation
SM-1301 Discrete Mathematics
Anti-requisite | None
Aims
This module introduces fundamental knowledge and programming techniques of robotics. The module emphasizes on code development and debugging for mobile robot platforms.

This module is a compulsory module for Soft Computing stream.

Learning Outcomes
On successful completion of this module, a student will be expected to be able to:

- program a microcontroller
- create programs to read sensor signals
- create programs to detect the dynamics of actuators
- design feed-forward and feedback controls for mobile robots
- analyse and evaluate robot performance

Module Contents
- Fundamentals of sensors, measurement and estimation
- Fundamentals of actuators, measurement and estimation
- Kinematic and dynamic model of robots
- Robot control architecture
- Control techniques for mobile robots
- Programming and debugging techniques for mobile robots

Assessment
- Formative assessment: Interactive Quizzes and Feedback
- Summative assessment:
  - Examination: 0%
  - Coursework: 100%
    - 1 oral presentation (30%)
    - 1 individual report (70%)