

MSc Robotics



Faculty of Technology
University of Plymouth
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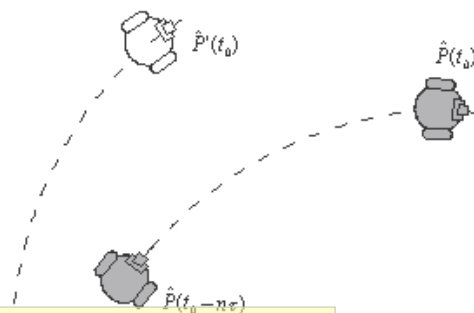
*Robotic
Intelligence*

Course Description

This master's course provides students with a broad understanding of the latest developments and issues in all areas of robotics. A deeper theoretical and practical knowledge in interactive and intelligent mobile robots is provided. This course is conceived as a stepping stone towards applied research in either industry or in academia.

The course will cover theoretical and practical knowledge of control and design, interfacing between real-world devices, autonomous processing and evaluation of acquired information, interaction with the user and intelligent decision making. Students will have access to a robotics club and other University courses, e.g. an entrepreneurship course, and will work on a innovative project inspired by the latest developments in technology and society.

Robotics is a multiskill discipline preparing the successful student to deal with future developments in distributed systems of sensors, information sources, actuators and human users. These include industrial automation, mobile service robots, edutainment robotics, intelligent appliances and smart homes.



Contact:

Postgraduate Admissions
Faculty of Technology
University of Plymouth
Drake Circus
Plymouth PL4 8AA
United Kingdom
Tel: +44 (0)1752 232558
Fax: +44 (0)1752 233305

technology@plymouth.ac.uk



Background

Future Horizons predicts that robots will become mainstream consumer products within the next decade, and by 2010, service robotics will dominate the robotics market.

"Despite 50 years of development, the robotic market is still in its early stages with companies still trying to define requirements. But the mechanics, electronics and software required to make a powerful robot with huge consumer appeal for domestic applications is already available." (Malcolm Penn, chief executive officer, Future Horizons)

The development of service robotics will depend on the development of applications awaited by users. The bottleneck is not on the hardware side, but lies in intelligent sensing and user interaction.

Programme Details*

Term 1

- Robotics and Control (20)
- Distributed and Embedded Computing (10)
- Personal and Professional Skills (10)
- Interactive Intelligent Systems Workshop (20)

Term 2

- Sensors & Actuators (10)
- Artificial Vision Systems (10)
- Natural Language Interfaces (10)
- Autonomy and Intelligence (10)
- Research Skill and Project Development (10)
- One option from:
 - Advanced Information Technology (10)
 - Simulation of Engineering Systems (10)
 - Systems Approach to Project Management (10)
 - Entrepreneurship (10)

Term 3

- Project (60)

Extra-curricular opportunities

- Seminar series "Future Robotics".
- Robotics Club (e.g. robot football, AIBO, etc)

** Number of credits shown in brackets

Admission requirements

A minimum of a lower second class honours degree (2.2) in Robotics, Computing, Engineering (Mechanical / Electrical/ Electronic), Physics or Mathematics. Students with advanced standing who can evidence an academic ability to a similar level may also be considered. All applicants should possess a minimum of grade C in English Language at GCSE level or minimum score of 6.5 in IELTS, 570 in TOEFL or 230 in TOEFL computer-based. Are also required: A sound understanding of mathematics (A level), basic skills in electrical engineering, basic knowledge of computer hardware and operating systems, familiarity with a programming language such as C, C++, Java or similar (refresher courses and support is available in these areas, but we need to know the needs in advance).

*Course beginning in September 2005 with possible starts in January and September.