MECH 7005 ADVANCED ROBOTICS

Credit Points 10

Legacy Code 300599

Coordinator Gu Fang (https://directory.westernsydney.edu.au/search/name/Gu Fang/)

Description This subject is designed to introduce the engineering concepts involved in Robotics. The kinematics, dynamics, control and sensing aspects in robotics will be introduced. In addition, the concepts of artificial intelligence and their applications in robotics will also be discussed and assessed.

School Eng, Design & Built Env

Discipline Mechanical and Industrial Engineering and Technology, Not Elsewhere Classified.

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Postgraduate Coursework Level 7 subject

Incompatible Subjects LGYA 5817 - Advanced Robotics LGYA 5833 - Mobile Robotic Systems

Restrictions

Students must be enrolled in a postgraduate program

Assumed Knowledge

Some Knowledge of MATLAB/Simulink.

Learning Outcomes

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

1. Analyse and develop mathematical models of an industrial robot.
2. Design advanced controllers for robot systems.
3. Analyse and apply sensors in robots.
4. Design and implement artificial intelligence in robot applications.

Subject Content

1. Robot kinematics
2. Robot dynamics
3. Robot trajectory planning
4. Robot controller design
5. Sensing in robotics
6. Artificial neural networks and fuzzy logic and their applications in robotics

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task
Practical	No more than 3 pages for each lab.	20	N	Individual
Numerical Problem Solving	no more than 10 pages	20	N	Individual
Professional Task	No more than 15 pages	30	N	Individual
Professional Task	No more than 15 pages	30	N	Group

Teaching Periods

Autumn (2024)

Parramatta City - Macquarie St

On-site

Subject Contact Gu Fang (https://directory.westernsydney.edu.au/search/name/Gu Fang/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MECH7005_24-AUT_PC_1#subjects)