MECH 4003 MOBILE ROBOTICS

Credit Points 10

Legacy Code 300043

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

Description To develop an understanding of the basic concepts involved in Mobile Robotics. The areas of mobile robot mechanics, localisation, map building and path planning of mobile robots will be introduced. Various sensors and their applications in mobile robotics are also to be introduced.

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 Undergraduate Level 4 subject

Pre-requisite(s) ENGR 1018

Restrictions

Successful completion of 160 credit points

Learning Outcomes

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

1. Describe and classify the different types of mechanical structures of mobile robots.
2. Examine the issues of localisation in mobile robots.
3. Examine and apply the map building and path planning techniques used in mobile robotics
4. Evaluate various sensors and assess their applications in mobile robots

Subject Content

Mechanics of Mobile robots
Localisation, map-building and path planning
Sensors and sensing techniques.
Actuators for mobile robots
Recent development in mobile robots

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	Mandatory
Applied Project	30 hours	60	N	Group/ Individual	Y
Practical	30 minutes for each lab session	16	N	Individual	Y
Quiz	30 minutes 24 each		N	Individual	Y

Teaching Periods

Spring (2024)

Penrith (Kingswood)

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=MECH4003_24-SPR_KW_1#subjects)

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=MECH4003_24-SPR_PC_1#subjects)

Sydney City Campus - Term 2 (2025)

Sydney City

On-site

Subject Contact Peter Lendrum (https://directory.westernsydney.edu.au/search/name/Peter Lendrum/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=MECH4003_25-SC2_SC_1#subjects)

Spring (2025)

Penrith (Kingswood)

Hybrid

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

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=MECH4003_25-SPR_KW_3#subjects)

Parramatta City - Macquarie St

Hybrid

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

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=MECH4003_25-SPR_PC_3#subjects)