MECH 7004 ADVANCED MOBILE ROBOTICS

Credit Points 10

Legacy Code 301020

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

Description This unit is designed to develop an understanding of the concepts involved in Mobile Robotics. The areas of mobile robot mechanics, localisation, map building and path planning 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

Student Contribution Band HECS Band 2 10cp

Level Postgraduate Coursework Level 7 subject

Restrictions

Students must be enrolled in a postgraduate program

Assumed Knowledge

Some basic skills in MATLAB and C/C++ programming.

Learning Outcomes

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

1. Classify and model different types of mechanical structures of mobile robots.
2. Examine and solve 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

1. Mechanics of Mobile robots
2. Localisation, map-building and path planning
3. Sensors and sensing techniques.
4. 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.

Item	Length	Percent	Threshold	Individual/ Group Task
Lab	3x 2hrs	20	N	Individual
In class Quiz	3x0.5hr	30	N	Individual
Group Project (no more than 3 students in each group)	Report is limited to 15 pages max.	30	N	Both (Individual & Group)
Individual Project	Report is limited to 15 pages max.	20	N	Individual

Teaching Periods

Spring

Parramatta City - Macquarie St
Day

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

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MECH7004_22-SPR_PC_D#subjects)