Overview

This course will enable students to acquire an understanding of optimization concepts in engineering system designs and the application of optimization algorithms in mechanical, manufacturing, and mechatronic systems. Topics to be covered include classical optimization approaches with gradient based methods, linear and quadratic programming. The course also introduces metaheuristic optimization approaches such as genetic algorithms, particle swarm optimization and ants colony optimization algorithms. The focus will be on the selection of an appropriate technique for an optimization problem in the above mentioned disciplines. Projects and exercises to be assigned include the choice, design, and implementation of optimization algorithms to solve practical engineering problems in mechanism design, manufacturing task scheduling, and robotic trajectory formulation. Students will practice in developing computing algorithms to solve engineering optimization problems with emphasis on effectiveness and efficiency.
Faculty
Faculty of Engineering

School
School of Mechanical and Manufacturing Engineering

Study Level
Undergraduate

Offering Terms
Term 3

Campus
Kensington

Delivery Mode
Fully on-site

Indicative contact hours
5

Timetable
Visit timetable website for details
Conditions for Enrolment

Prerequisite: MATH2089
Course Outline

To access course outline, please visit:

MTRN4030 Course Outline
### Fees

<table>
<thead>
<tr>
<th>Category</th>
<th>Fee</th>
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<tr>
<td>Commonwealth Supported Students</td>
<td>$1191</td>
</tr>
<tr>
<td>Domestic Students</td>
<td>$5970</td>
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<tr>
<td>International Students</td>
<td>$5970</td>
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**DISCLAIMER**

Please note that the University reserves the right to vary student fees in line with relevant legislation. This fee information is provided as a guide and more specific information about fees, including fee policy, can be found on the fee website.

For advice about fees for courses with a fee displayed as "Not Applicable", including some Work Experience and UNSW Canberra at ADFA courses, please contact the relevant Faculty.

Where a Commonwealth Supported Students fee is displayed, it does not guarantee such places are available.
Pre-2019 Handbook Editions

Access past handbook editions (2018 and prior)

Pre-2019 Handbook Editions
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Authorised by Deputy Vice-Chancellor (Academic)
CRICOS Provider Code 00098G
ABN: 57 195 873 179