

# INFO 7001 ADVANCED MACHINE LEARNING

**Credit Points** 10

**Legacy Code** 301119

**Coordinator** Oliver Obst ([https://directory.westernsydney.edu.au/search/name/Oliver Obst/](https://directory.westernsydney.edu.au/search/name/Oliver%20Obst/))

**Description** Advanced Machine Learning explores modern methods of classification, clustering and regression to make predictions and analyse different forms of data. Issues that face all machine learning methods, such as model evaluation, assessment and generalisation will also be analysed.

**School** Computer, Data & Math Sciences

**Discipline** Information Technology, Not Elsewhere Classified.

**Student Contribution Band** HECS Band 1 10cp

**Level** Postgraduate Coursework Level 7 subject

**Pre-requisite(s)** COMP 7024

## Restrictions

Students must be enrolled in a postgraduate program.

## Assumed Knowledge

Fundamentals of computer programming and basic linear algebra.

## Learning Outcomes

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

1. Describe appropriate machine learning methods for given problems.
2. Fit modern machine learning models to data.
3. Make predictions based on a fitted machine learning model.
4. Analyse data based on a fitted machine learning model.
5. Evaluate the utility of a machine learning method for given data.

## Subject Content

1. Introduction to Machine Learning
2. Support Vector Machines
3. Neural Networks
4. Reinforcement Learning
5. Manifold/Metric Learning

## 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
Quiz	5x60 minutes	20	N	Individual
Report	15 pages	50	N	Individual
Presentation	15 mins	30	N	Individual

Prescribed Texts

- Sutton, R. S., Barto, A. G. (2018). Reinforcement Learning: An Introduction (2nd ed.). Cambridge, Massachusetts: The MIT Press.

Teaching Periods

## Spring (2022)

**Parramatta - Victoria Rd**

### Day

**Subject Contact** Oliver Obst ([https://directory.westernsydney.edu.au/search/name/Oliver Obst/](https://directory.westernsydney.edu.au/search/name/Oliver%20Obst/))

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=INFO7001\\_22-SPR\\_PS\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=INFO7001_22-SPR_PS_D#subjects))

## Spring (2023)

**Parramatta - Victoria Rd**

### On-site

**Subject Contact** Oliver Obst ([https://directory.westernsydney.edu.au/search/name/Oliver Obst/](https://directory.westernsydney.edu.au/search/name/Oliver%20Obst/))

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