



Course Outline (Higher Education)

School:	School of Engineering, Information Technology and Physical Sciences
Course Title:	ADVANCED DATA SCIENCE PROJECT 1
Course ID:	DATSC5001
Credit Points:	30.00
Prerequisite(s):	ITECH5500 or equivalent
Co-requisite(s):	Nil
Exclusion(s):	Nil
ASCED:	010199

Description of the Course :

This course is intended to be taken in sequence with DATSC5002 and will equip students with the knowledge and skills to undertake a data science research project. In the process, students will employ a combination of theoretical, analytical and computing skills relevant to their field of advanced study. In particular, students will critically review relevant literature and present their findings in front of a peer-based audience.

Grade Scheme: Graded (HD, D, C, etc.)

Placement Component: No

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:

On successful completion of the course the students are expected to be able to

Knowledge:

K1. Critically analyse the concepts underlying research in data science.

K2. Explain how to approach and undertake a research project at an advanced level.

K3. Systematically apply critical thinking to research design and investigation.

Skills:

S1. Analyse and evaluate data at an advanced level appropriate to the discipline.

S2. Communicate the outcomes of their research to peers through written and verbal media.

S3. Critically review and synthesize research literature.

S4. Recognise the limitations and uncertainty of research undertaken and formulate recommendations for future research

Application of knowledge and skills:

A1. Critically assess, analyse and synthesize a significant collection of data.

A2. Produce a major piece of written work through a thesis (and other formats), commensurate with the discipline and field of research.

Course Content:

Topics may include:

- literature review
- analysis, methodology and modelling.
- Structuring and drafting of a research thesis.

Values:

V1. Act appropriately within a collaborative research environment.

V2. Demonstrate an independent intellectual demeanour befitting graduates.

Graduate Attributes

The Federation University FedUni graduate attributes (GA) are entrenched in the Higher Education Graduate Attributes Policy (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

Graduate attribute and descriptor		Development and acquisition of GAs in the course			
		Learning Outcomes (KSA)	Code A. Direct B. Indirect N/A Not addressed	Assessment task (AT#)	Code A. Certain B. Likely C. Possible N/A Not likely
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	K1-K3, S1-S4, A1-A2	A	1,2	A

Graduate attribute and descriptor		Development and acquisition of GAs in the course			
		Learning Outcomes (KSA)	Code A. Direct B. Indirect N/A Not addressed	Assessment task (AT#)	Code A. Certain B. Likely C. Possible N/A Not likely
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	K1-K3, S1-S4, A1-A2	B	1,2	A
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	K1-K3, S1-S4, A1-A2	B	1 - 3	B
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	K1-K3, S1-S4, A1-A2	A	1 - 3	A
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	K1-K3, S1-S4, A1-A2	A	1 - 3	A

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1-K3	A short presentation in the early weeks of the semester on the research plan, methodology and previous literature	Presentation	5 - 15%
K1, K3, S1-S4, A1-A2	Demonstrable progress in collection and analysis of results	Draft of a dissertation, technical report or an academic paper.	70 - 80%
K3, S2-S4, A1-A2	Presentation as specified in the course handbook.	Presentation	10 - 20%

Adopted Reference Style:

APA