Unit Outline (Higher Education)

Institute / School: Institute of Innovation, Science & Sustainability

Unit Title: RESEARCH PROJECT

Unit ID: SCCOR3001

Credit Points: 15.00

Prerequisite(s): (Successful completion of two years full time equivalent of a science degree)

Co-requisite(s): Nil

Exclusion(s): (SCENV3903 and SCIGC3990)

ASCED: 019999

Description of the Unit:
This unit is designed for students enrolled in science programmes to extend individual and independent learning skills. Students will undertake a supervised research project involving research of a publishable standard which forms the basis of a final report presented at the end of the unit. The unit will explore current scientific problems in relevant fields of research. As part of the unit, students are trained to develop a project with defined objectives, collate, evaluate, critically interpret experimental data using statistical analysis and communicate their results scientifically.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: No

Supplementary assessment is not available to students who gain a fail in this Unit.

Course Level:

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory						
Intermediate						
Advanced			✔			

Learning Outcomes:

Students undertaking this unit are expected to be able to demonstrate the following knowledge and skills

Knowledge:

K1. Demonstrate an in-depth knowledge of an appropriate subject and describe appropriate methods for data collection and analysis within this field

K2. Discuss potential ethical issues associated with scientific research

Skills:

S1. Examine and critique literature relevant to the needs and scope of the research project

S2. Develop problem solving skills through devising appropriate methodological approaches to address the research question

S3. Collect, collate, analyse and interpret field and/or laboratory data

S4. Communicate results in oral and written form

S5. Demonstrate ability to participate in individual or group research projects (as required)

S6. Operate with a significant degree of independence, whilst maintaining efficient and meaningful dialogue with a project supervisor.

Application of knowledge and skills:

A1. Collect and scrutinise scientific research literature and develop an independent interpretation in order to establish the approaches and scope of the research project

A2. Decide on methodological approaches to obtain and collect data in an appropriate manner, and analyse this data to help understand scientific problems

A3. Evaluate and communicate research results in oral and written form, requiring critical analysis, synthesis and organization of knowledge and construction of a rational and lucid scientific argument

A4. Apply problem solving and knowledge of statistical methods to critically analyse data and communicate results using both written and oral approaches

Unit Content:

The syllabus will cover the following topics

Topics may include:

- The research project will involve an in-depth study in an area of interest, and will require the student to carry out an extensive literature review in the area related to the project
- Formulate a specific research problem with well-defined objectives
- Carry out experimental work consistent with the defined objectives of the study
- Collate, evaluate and interpret experimental results
- Present a final report in an appropriate format summarising the aims, objectives, results, conclusions and recommendations of the project
- Oral presentation to a scientifically-literate audience of peers and staff summarising the main features of the project

FEDTASKS

Federation University Federation recognises that students require key transferable employability skills to prepare them for their future workplace and society. FEDTASKS (**T**ransferable **A**ttributes **S**kills and **K**nowledge) provide a targeted focus on five key transferable Attributes, Skills, and Knowledge that are be embedded within curriculum, developed gradually towards successful measures and interlinked with cross-discipline and Co-

operative Learning opportunities. *One or more FEDTASK, transferable Attributes, Skills or Knowledge must be evident in the specified learning outcomes and assessment for each FedUni Unit, and all must be directly assessed in each Course.*

FEDTASK attribute and descriptor		**Development and acquisition of FEDTASKS in the Unit**	
		Learning Outcomes (KSA)	**Assessment task (AT#)**
FEDTASK 1 Interpersonal	Students will demonstrate the ability to effectively communicate, interact and work with others both individually and in groups. Students will be required to display skills in-person and/or online in: • Using effective verbal and non-verbal communication • Listening for meaning and influencing via active listening • Showing empathy for others • Negotiating and demonstrating conflict resolution skills • Working respectfully in cross-cultural and diverse teams.	K1, S1-6, A1-4	AT2-4
FEDTASK 2 Leadership	Students will demonstrate the ability to apply professional skills and behaviours in leading others. Students will be required to display skills in: • Creating a collegial environment • Showing self -awareness and the ability to self-reflect • Inspiring and convincing others • Making informed decisions • Displaying initiative	S6	AT5
FEDTASK 3 Critical Thinking and Creativity	Students will demonstrate an ability to work in complexity and ambiguity using the imagination to create new ideas. Students will be required to display skills in: • Reflecting critically • Evaluating ideas, concepts and information • Considering alternative perspectives to refine ideas • Challenging conventional thinking to clarify concepts • Forming creative solutions in problem solving	S1, A1, A3, A4	AT2-4
FEDTASK 4 Digital Literacy	Students will demonstrate the ability to work fluently across a range of tools, platforms and applications to achieve a range of tasks. Students will be required to display skills in: • Finding, evaluating, managing, curating, organising and sharing digital information • Collating, managing, accessing and using digital data securely • Receiving and responding to messages in a range of digital media • Contributing actively to digital teams and working groups • Participating in and benefiting from digital learning opportunities	A4	AT2-3

FEDTASK attribute and descriptor		Development and acquisition of FEDTASKS in the Unit	
		Learning Outcomes (KSA)	Assessment task (AT#)
FEDTASK 5 Sustainable and Ethical Mindset	Students will demonstrate the ability to consider and assess the consequences and impact of ideas and actions in enacting ethical and sustainable decisions. Students will be required to display skills in: • Making informed judgments that consider the impact of devising solutions in global economic environmental and societal contexts • Committing to social responsibility as a professional and a citizen • Evaluating ethical, socially responsible and/or sustainable challenges and generating and articulating responses • Embracing lifelong, life-wide and life-deep learning to be open to diverse others • Implementing required actions to foster sustainability in their professional and personal life.	K2	AT1

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1, K2,	Completion of Research Integrity Training and Laboratory and Field Work Safety Training	Online quiz	satisfactory / unsatisfactory
K1, S1, S2, S4, S6, A1-4	Project Proposal	Written document	15-20%
K1-K2, S1-6, A1-4	Presentation of research findings to a scientifically literate audience	Oral Presentation	15-20%
K1, K2, S1-6, A1-4	Completion of a scientific/ technical project report	Written Research Report	50-60%
S2, S3, S5, S6, A1-4	Supervisor`s assessment: level of engagement with research project and demonstration of appropriate laboratory/field skills	Continuous assessment throughout semester	5-10%

Alignment to the Minimum Co-Operative Standards (MiCS)

The Minimum Co-Operative Standards (MiCS) are an integral part of the Co-Operative University Model. Seven criteria inform the MiCS alignment at a Course level. Although Units must undertake MiCS mapping, there is NO expectation that Units will meet all seven criteria. The criteria are as follows:

1. Co-design with industry and students
2. Co-develop with industry and students
3. Co-deliver with industry
4. FedTASK alignment
5. Workplace learning and career preparation
6. Authentic assessment
7. Industry-link/Industry facing experience

MiCS Course level reporting highlights how each Course embraces the principles and practices associated with the Co-Operative Model. Evidence of Course alignment with the MiCS, can be captured in the Course Modification Form.

MICS Mapping has been undertaken for this Unit No

Date:

Adopted Reference Style:

APA

Refer to the library website for more information

Fed Cite - referencing tool