

# Unit Outline (Higher Education)

<b>Institute / School:</b>	Institute of Education, Arts & Community
<b>Unit Title:</b>	SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS IN OUR WORLD
<b>Unit ID:</b>	EDMST6021
<b>Credit Points:</b>	15.00
<b>Prerequisite(s):</b>	Nil
<b>Co-requisite(s):</b>	Nil
<b>Exclusion(s):</b>	Nil
<b>ASCED:</b>	070301

## Description of the Unit:

This unit introduces the disciplines of Science, Technology, Engineering and Mathematics (STEM) and develops an understanding of the importance of STEM in our everyday lives and recognises that STEM disciplines are interlinked and mutually supportive fields of endeavour. It will assist students to develop suitable research and technology skills to be successful in post-graduate studies. A focus on engaging contexts in STEM will be explored throughout the unit. Students will be required to explore ethical issues posed in everyday life where scientific advances mean that people potentially have more choices than they would otherwise have. Creativity and innovation in STEM disciplines will be examined, with students encouraged to explore how STEM disciplines can be taught to encourage both innovation and creativity.

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

## Work Experience:

Not wholly work experience: Student is not undertaking work experience in industry or student is undertaking work experience in industry where learning and performance is directed by the provider.

**Placement Component:** No

**Supplementary Assessment:** Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment

**CourseLevel:**

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

**Learning Outcomes:**

(On successful completion of the unit the students are expected to be able to):

**Knowledge:**

- K1.** Apply research and technology skills suitable to post graduate studies.
- K2.** Apply knowledge of STEM disciplines and their relevance to the real world.
- K3.** Explain ethical issues associated with advances in STEM and their impact on society
- K4.** Discuss the importance of creativity and innovation in classrooms and more broadly in society.

**Skills:**

- S1.** Use technology to effectively research STEM topics
- S2.** Critically reflect on issues that are associated with advances in STEM
- S3.** Articulate the role of creativity and innovation in society
- S4.** Discuss the importance of STEM disciplines in our schools.

**Application of knowledge and skills:**

- A1.** Conduct research into a STEM issue or initiative, focussing on the benefits and ethics involved.
- A2.** Present a research report into a STEM issue or initiative.
- A3.** Design a curriculum based STEM activity that encourages students to be creative and/or innovative.

**Unit Content:**

Topics may include:

- Introduction to post graduate study (Technology & Research Skills.
- Exploration of the four STEM disciplines
- STEM and the wider community - Why is STEM important?
- How do we create informed citizens in STEM disciplines?
- Ethical issues involving STEM disciplines
- Teaching our students STEM disciplines
- Creativity as an integral part of the STEM.
- Why is innovation an important part of STEM?

**Graduate Attributes**

The Federation University Federation 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 Courses. Graduate attribute attainment typically follows an incremental development process mapped through Course progression.

**One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni Unit, and all attributes must be directly assessed in each Course**

Graduate attribute and descriptor		Development and acquisition of GAs in the Unit	
		Learning Outcomes (KSA)	Assessment task (AT#)
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.	K4, S2	AT1, AT2
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.	AT1, AT2	AT2
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, S3	AT1
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, S1, S3	AT1
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.	Not applicable	AT1

### Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1, K2, K3, S1, S4, A1, A2	As part of a group, research a STEM based initiative or issue and present a report with a focus on ethical issues and the importance to society.	Research Task	50 - 70%
K4, S2, S3, A3	Design a STEM based activity that encourages creativity or innovation and write a justification of why creativity and innovation are important in schools.	Curriculum Development	30 - 50%

### 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](#)