



# Course Outline (Higher Education)

<b>School:</b>	School of Engineering, Information Technology and Physical Sciences
<b>Course Title:</b>	ENGINEERING SURVEYING
<b>Course ID:</b>	ENGIN3204
<b>Credit Points:</b>	15.00
<b>Prerequisite(s):</b>	Nil
<b>Co-requisite(s):</b>	Nil
<b>Exclusion(s):</b>	(ENCIV2010)
<b>ASCED:</b>	030907

## Description of the Course :

Surveying supports construction activity and infrastructure engineering and also helps to monitor natural environment covering. It covers services such as defining land boundaries, engineering and mining surveying, offshore surveys, digital mapping, precise positioning and property development.

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

## Work Experience:

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

**Placement Component:** No

**Supplementary Assessment:** Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

## 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Learning Outcomes:**

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

**Knowledge:**

- K1.** Explain the fundamentals and theory of engineering surveying
- K2.** Display a coherent theoretical and technical knowledge of a range of surveying instruments, survey techniques, computational methods used in engineering surveying
- K3.** Describe the role of engineering surveying in the development and execution of engineering projects

**Skills:**

- S1.** Use a range of modern surveying instruments
- S2.** Analyse and evaluate appropriate computational techniques to process survey data
- S3.** Produce maps, plans and digital data required for the design and construction of engineering projects
- S4.** Organise and conduct a small scale engineering survey project

**Application of knowledge and skills:**

- A1.** Apply appropriate techniques to collect survey data
- A2.** Apply appropriate surveying techniques in carrying out projects

**Course Content:**

Topics may include:

- Basic surveying instrumentation for the measurement of length, angle and elevation
- The survey techniques used in the provision of survey control, engineering detail surveys and the layout of engineering projects
- The computation and processing methods used in engineering surveying, including coordinate systems, computer processing and the plotting and presentation of data.
- The management of the processes of engineering surveying, including equipment selection, management of surveying personnel and management of survey data and records.

**Values:**

- V1.** Recognise the role of engineering surveying in engineering projects
- V2.** Appreciate the impact of surveying techniques on the efficiency of engineering design
- V3.** Appreciate learning as a lifelong process

**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	1-4	A
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	1-4	C
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, K2, S1-S4, A1, A2	B	2, 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, K2, S1-S4, A1, A2	B	2, 3	B
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	Not applicable	Not applicable	Not applicable

### Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1, S2, S3	A selection of tutorial problems will be assessed in this course	Written report(s)	15 - 25%
K1,K2, S1-S4, A1, A2	A practical survey task will be conducted as part of the course	Written report(s)	15 - 25%
K1, K2, S1-S4, A1, A2	A team based surveying project will be undertaken as part of the course	Written report	15 - 25%
K1, K2, K3, S2	Tests and/or examinations based on any or all of the material covered in the course.	Test(s) and/or examination(s)	40 - 50%

### Adopted Reference Style:

Other (IEEE: Refer to the library website for more information)