



UNSW

UNSW Course Outline

ZEIT1600 Introduction to Civil Engineering - 2024

Published on the 13 Feb 2024

General Course Information

Course Code : ZEIT1600

Year : 2024

Term : Semester 1

Teaching Period : Z1

Is a multi-term course? : No

Faculty : UNSW Canberra

Academic Unit : School of Engineering and Technology

Delivery Mode : In Person

Delivery Format : Standard

Delivery Location : UNSW Canberra at ADFA

Campus : UNSW Canberra

Study Level : Undergraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

This course introduces students to the Civil Engineering discipline and its various specialised fields. They will learn to effectively communicate engineering information using engineering drawings. Students will achieve knowledge of the interface between design, surveying and

construction. Students will also learn surveying techniques and will be introduced to the various stages of design and construction of a residential house.

Course Aims

To introduce students to the Civil Engineering Practice

Relationship to Other Courses

Jointly taught with ZEIT1690

Course Learning Outcomes

Course Learning Outcomes	Engineers Australia - Professional Engineer (Stage 1)
CLO1 : Apply engineering principles to assess the factors controlling the design and construction of a project	<ul style="list-style-type: none">• PEE1.5 : Knowledge of engineering design practice and contextual factors impacting the engineering discipline• PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline
CLO2 : Investigate, analyse, design and report on a residential building project.	<ul style="list-style-type: none">• PEE2.2 : Fluent application of engineering techniques, tools and resources• PEE2.3 : Application of systematic engineering synthesis and design processes
CLO3 : Apply a disciplined, holistic approach that incorporates all aspects of a basic design situation	<ul style="list-style-type: none">• PEE2.1 : Application of established engineering methods to complex engineering problem solving
CLO4 : Develop skills to effectively communicate the intents of an engineering project to technical and non-technical stakeholders	<ul style="list-style-type: none">• PEE3.2 : Effective oral and written communication in professional and lay domains
CLO5 : Understand how engineering construction has effects on communities beyond that of the technical achievements	<ul style="list-style-type: none">• PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain

Course Learning Outcomes	Assessment Item
CLO1 : Apply engineering principles to assess the factors controlling the design and construction of a project	<ul style="list-style-type: none"> • Assignment and Practical 1 • Quiz • Assignment 3 • Final Exam
CLO2 : Investigate, analyse, design and report on a residential building project.	<ul style="list-style-type: none"> • Assignments 2 • Assignment and Practical 1 • Quiz • Final Exam
CLO3 : Apply a disciplined, holistic approach that incorporates all aspects of a basic design situation	<ul style="list-style-type: none"> • Assignment 3 • Assignment and Practical 1 • Final Exam
CLO4 : Develop skills to effectively communicate the intents of an engineering project to technical and non-technical stakeholders	<ul style="list-style-type: none"> • Assignments 2 • Quiz • Assignment 3 • Assignment and Practical 1 • Final Exam
CLO5 : Understand how engineering construction has effects on communities beyond that of the technical achievements	<ul style="list-style-type: none"> • Assignment 3 • Assignment and Practical 1 • Final Exam

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

This course will be taught through different methods involving lectures, tutorials, and fieldwork sessions. Active participation in classes as well as in fieldwork sessions (in group), solving tutorial and assigned problems are important aspects of the learning. For submitting tutorial and assignment, following things needs to be considered:

A4 or A3 paper is to be used for tutorials with solutions written neatly in ink.

The survey assignments are to be handed in by the end of the Tutorial Session that they are programmed for. The field notes for each survey field practical are to be placed to the corresponding tutor's office no later than 72 hours after the end of the practical class. Assignment solutions for the two other components of the course are to be handed to the lecturer on the due date, as agreed with the students. All submissions are to have a signed Cover Sheet.

Word processing and other computer generated mathematical solutions are not to be used,

unless the lecturer has agreed to this. For each tutorial, emphasis will be on accuracy, neatness and clarity of presentation. Numerical values must include units and reflect a sensible number of significant figures.

The intensity of this course is such that time management will be essential to ensure due dates are met. Students having difficulty with tutorials or any aspect of the course should contact the lecturer when the difficulty arises.

Every attempt will be made to return tutorials and field exercise sheets within three weeks of submission.

The Learning Management System

Moodle is the Learning Management System used at UNSW Canberra. All courses have a Moodle site which will become available to students at least one week before the start of semester. Please find all help and documentation (including Blackboard Collaborate) at the [Moodle Support page](#).

UNSW Moodle supports the following web browsers:

- » Google Chrome 50+
 - » Safari 10+
 - ** Internet Explorer is not recommended
- ** Addons and Toolbars can affect any browser's performance.

Operating systems recommended are:

Windows 7, 10, Mac OSX Sierra, iPad IOS10

For further details about system requirements click [here](#).

Log in to Moodle [here](#).

If you need further assistance with Moodle:

For enrolment and login issues please contact:

IT Service Centre

Email: itservicecentre@unsw.edu.au

Phone: (02) 9385-1333

International: +61 2 9385 1333

For all other Moodle issues please contact:

External TELT Support

Email: externalteltsupport@unsw.edu.au

Phone: (02) 9385-3331

International: +61 2 938 53331

Opening hours:

Monday – Friday 7:30am – 9:30 pm

Saturday & Sunday 8:30 am – 4:30pm

Additional Course Information

Academic Integrity and Plagiarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW staff and students have a responsibility to adhere to this principle of academic integrity. All students are expected to adhere to UNSW's Student Code of Conduct

<https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf>

Plagiarism undermines academic integrity and is not tolerated at UNSW. *It is defined as using the words or ideas of others and passing them off as your own, and can take many forms, from deliberate cheating to accidental copying from a source without acknowledgement.*

For more information, please refer to the following:

<https://student.unsw.edu.au/plagiarism>

Referencing

In this course, students are required to reference following the APA 7 referencing style.

Information about referencing styles is available at: <https://guides.lib.unsw.adfa.edu.au/c.php?g=472948&p=3246720>

Study at UNSW Canberra

<https://www.unsw.adfa.edu.au/study>

Study at UNSW Canberra has lots of useful information regarding:

- Where to get help
- Administrative matters
- Getting your passwords set up
- How to log on to Moodle
- Accessing the Library and other areas.

Additional Information as required

CRICOS Provider no. 00098G

The University of New South Wales Canberra.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates	Engineers Australia - Professional Engineer (Stage 1)
Assignment and Practical 1 Assessment Format: Individual	10%	Start Date: Not Applicable Due Date: 26/03/2024 06:00 PM	<ul style="list-style-type: none">• PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline• PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain• PEE2.2 : Fluent application of engineering techniques, tools and resources
Assignments 2 Assessment Format: Individual	10%	Start Date: Not Applicable Due Date: 21/05/2024 05:30 PM	<ul style="list-style-type: none">• PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline• PEE2.2 : Fluent application of engineering techniques, tools and resources• PEE2.3 : Application of systematic engineering synthesis and design processes• PEE3.3 : Creative, innovative and pro-active demeanour
Quiz Assessment Format: Individual	20%	Start Date: 03/04/2024 02:15 PM Due Date: 03/04/2024 03:15 PM	<ul style="list-style-type: none">• PEE1.5 : Knowledge of engineering design practice and contextual factors impacting the engineering discipline• PEE2.2 : Fluent application of engineering techniques, tools and resources• PEE2.3 : Application of systematic engineering synthesis and design processes• PEE3.4 : Professional use and management of information

Assignment 3 Assessment Format: Individual	20%	Start Date: Not Applicable Due Date: 05/06/2024 05:00 PM	<ul style="list-style-type: none"> • PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE2.3 : Application of systematic engineering synthesis and design processes • PEE3.3 : Creative, innovative and pro-active demeanour • PEE3.4 : Professional use and management of information • PEE3.2 : Effective oral and written communication in professional and lay domains • PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain
Final Exam Assessment Format: Individual	40%	Start Date: Not Applicable Due Date: Not Applicable	<ul style="list-style-type: none"> • PEE1.5 : Knowledge of engineering design practice and contextual factors impacting the engineering discipline • PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE2.3 : Application of systematic engineering synthesis and design processes • PEE3.2 : Effective oral and written communication in professional and lay domains • PEE3.3 : Creative, innovative and pro-active demeanour

			<ul style="list-style-type: none"> • PEE3.4 : Professional use and management of information
--	--	--	---

Assessment Details

Assignment and Practical 1

Assessment Overview

Assessment on Basic levelling in Surveying. Feedback will be provided with the assessed assignment

Course Learning Outcomes

- CLO1 : Apply engineering principles to assess the factors controlling the design and construction of a project
- CLO2 : Investigate, analyse, design and report on a residential building project.
- CLO3 : Apply a disciplined, holistic approach that incorporates all aspects of a basic design situation
- CLO4 : Develop skills to effectively communicate the intents of an engineering project to technical and non-technical stakeholders
- CLO5 : Understand how engineering construction has effects on communities beyond that of the technical achievements

Detailed Assessment Description

Students needs to complete the Practical and the related calculations

Assignment submission Turnitin type

Not Applicable

Assignments 2

Assessment Overview

Assessment on Setting up a house. Feedback will be provided with the assessed assignment

Course Learning Outcomes

- CLO2 : Investigate, analyse, design and report on a residential building project.
- CLO4 : Develop skills to effectively communicate the intents of an engineering project to technical and non-technical stakeholders

Detailed Assessment Description

Students are required to complete the Practical for House setting and related calculation

Assignment submission Turnitin type

This is not a Turnitin assignment

Quiz

Assessment Overview

Quiz on understanding of basic 2D drawing (Plan and elevation). Feedback will be provided with the assessed exam

Course Learning Outcomes

- CLO1 : Apply engineering principles to assess the factors controlling the design and construction of a project
- CLO2 : Investigate, analyse, design and report on a residential building project.
- CLO4 : Develop skills to effectively communicate the intents of an engineering project to technical and non-technical stakeholders

Detailed Assessment Description

Students have to produce 2D scaled drawings of a residential house in PDF using AAutoCAD

Assessment Length

1 hour

Assignment submission Turnitin type

This is not a Turnitin assignment

Assignment 3

Assessment Overview

Designing a residential house. Feedback will be provided with the assessed assignment

Course Learning Outcomes

- CLO1 : Apply engineering principles to assess the factors controlling the design and construction of a project
- CLO3 : Apply a disciplined, holistic approach that incorporates all aspects of a basic design situation
- CLO4 : Develop skills to effectively communicate the intents of an engineering project to technical and non-technical stakeholders
- CLO5 : Understand how engineering construction has effects on communities beyond that of the technical achievements

Detailed Assessment Description

Students needs to produce the drawings of a residential house and related calculations

Assignment submission Turnitin type

Not Applicable

Final Exam

Assessment Overview

Final Exam

Course Learning Outcomes

- CLO1 : Apply engineering principles to assess the factors controlling the design and construction of a project
- CLO2 : Investigate, analyse, design and report on a residential building project.
- CLO3 : Apply a disciplined, holistic approach that incorporates all aspects of a basic design situation
- CLO4 : Develop skills to effectively communicate the intents of an engineering project to technical and non-technical stakeholders
- CLO5 : Understand how engineering construction has effects on communities beyond that of the technical achievements

Detailed Assessment Description

The Final exam takes place at the exam week. All the topics covered in the course will be examable

Assessment Length

3 hours

Assignment submission Turnitin type

Not Applicable

Hurdle rules

Students must achieve a minimum of 50% in the final exam to pass the course.

General Assessment Information

Diagnostic Test will be held in week 1, feedback, grades and worked solutions will be given to students during week 3

Assessment Requirements

All marks obtained for assessment items during the session are provisional. The final mark as published by the university following the assessment review group meeting is the **only official mark**.

Late Submission of Assessment

Unless prior arrangement is made with the lecturer or a formal application for special consideration is submitted, a penalty of 5% of the total available mark for the assessment will apply for each day that an assessment item is late up to a maximum of 5 days (120 hours) after which an assessment can no longer be submitted and a grade of 0 will be applied.

Use of Generative AI in Assessments

NO ASSISTANCE

It is prohibited to use any software or service to search for or generate information or answers. If its use is detected, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

Grading Basis

Standard

Requirements to pass course

Assessment Criteria: Students must achieve a minimum of 50% in the final exam to pass the course. If you do not, the maximum mark for the course will be a grade of 46%.

Note that the field notes for the Survey practicals form part of the assessment for the Survey component of the course as part of the first Survey assignments.

In order to obtain a Satisfactory grade in this course, the students must be able to demonstrate achievement of each of the LOs at least once

Course Schedule

Teaching Week/Module	Activity Type	Content			
Week 1 : 26 February - 1 March	Lecture	Date 27-Feb	Time 3-6 pm	Lecture topic Introduction to the course	Lecturer Safat Al-Deen
	Lecture	Date 28-Feb	Time 2-5 pm	Lecture topic Diagnostic Test 1hr, Introduction to civil engineering drawing and AutoCAD	Lecturer Safat Al-Deen
Week 2 : 4 March - 8 March	Lecture	Date 5-Mar	Time 3-6 pm	Lecture topic Introduction to Surveying and mapping, Beljanski surveying datums, vectors & coordinates	Lecturer Steve
	Lecture	Date 6-Mar	Time 2-5 pm	Lecture topic Developing Basic Drafting skills -1 Issue Assignment 3	Lecturer Safat Al-Deen
Week 3 : 11 March - 15 March	Lecture	Date 12-Mar	Time 3-6 pm	Lecture topic Introduction to Site Levelling Beljanski & Basic measuring techniques, Issue Assignment 1	Lecturer Steve
	Lecture	Date 13-Mar	Time 2-5 pm	Lecture topic Developing Basic Drafting skills -2	Lecturer Safat Al-Deen
Week 4 : 18 March - 22 March	Fieldwork	Date 19-Mar	Time 3-6 pm	Lecture topic Levelling Practical Beljanski	Lecturer Steve
	Lecture	Date 20-Mar	Time 2-5 pm	Lecture topic Developing Basic Drafting skills -3	Lecturer Safat Al-Deen
Week 5 : 25 March - 29 March	Lecture	Date 26-Mar	Time 3-6 pm	Lecture topic Site Mapping, Contouring, Interpolation-Modelling Beljanski Submit Assignment 1	Lecturer Steve
	Lecture	Date 27-Mar	Time 2-5 pm	Lecture topic Developing Basic Drafting skills -4	Lecturer Safat Al-Deen
Week 6 : 1 April - 5 April	Lecture	Date 2-Apr	Time 3-6 pm	Lecture topic Basics of Total Stn observation, booking techniques, Beljanski reductions & calculation of 3D coords Issue Assignment 2	Lecturer Steve
	Assessment	Date 3-Apr	Time 2-5 pm	Lecture topic QUIZ 1	Lecturer Safat Al-Deen
Week 7 : 22 April - 26 April	Lecture	Date 23-Apr	Time 3-6 pm	Lecture topic Legal Cadaster & surveying set out for construction Beljanski	Lecturer Steve
	Lecture	Date 24-Apr	Time 2-5 pm	Lecture topic Military training Day	Lecturer No Class
Week 8 : 29 April - 3 May	Lecture	Date 30-Apr	Time 3-6 pm	Lecture topic Lecturer Steve Beljanski Interpretation of Architectural, Engineering & other plans REVIEW PRAC 1	
	Lecture	Date 1-May	Time 2-5 pm	Lecture topic Calculation of earthwork	Lecturer Safat Al-Deen
Week 9 : 6 May - 10 May	Lecture	Date 7-May	Time 3-6 pm	Lecture topic Lecturer Steve Beljanski Revision of levelling field techniques, booking methods & level reductions.	
	Tutorial	Date	Time	Lecture topic	Lecturer

		8-May 2-5 pm Assignment 3 stage 2 tutorial tutorial Al-Deen	Safat
Week 10 : 13 May - 17 May	Fieldwork	Date Time Lecture topic Lecturer 14-May 3-6 pm Survey Practical -Building set out Steve Beljanski	
	Lecture	Date Time Lecture topic 15-May 2-5 pm Basic foundation design of single residential building Safat Al-Deen	Lecturer Safat
Week 11 : 20 May - 24 May	Lecture	Date Time Lecture topic Lecturer 21-May 3-6 pm Two point Resection theory Steve Beljanski Submit Assignment 2	
	Lecture	Date Time Lecture topic 22-May 2-5 pm Safety in construction site-1 Al-Deen	Lecturer Safat
Week 12 : 27 May - 31 May	Lecture	Date Time Lecture topic Lecturer 28-May 3-6 pm Monday timetable CLass	No
	Lecture	Date Time Lecture topic 29-May 2-5 pm Safety in construction site-2 Al-Deen	Lecturer Safat
Week 13 : 3 June - 7 June	Lecture	Date Time Lecture topic Lecturer 4-Jun 3-6 pm General Survey Revision Beljanski	Steve
	Lecture	Date Time Lecture topic 5-Jun 2-5 pm Course revision, submit Assignment 3 Al-Deen	Lecturer Safat

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

General Schedule Information

No Class on 24th April due to Military Training Day

No Class on 28th May as Monday timetable will be implemented on that day

Course Resources

Prescribed Resources

Students are not required to purchase a text book but you will be provided with a set of course notes. The School has several text books which will be referred to and are available to students for short term loan. However, students are encouraged to use the Academy Library. References will be advised with each project.

You will need to purchase the following and bring them to each survey lecture, field activity and drawing lecture:

- Scientific/engineering calculator such as the Casio fx-82AU
- Protractor (circular type 0 to 360 degrees)
- Scale rule (1:100, 1:200, 1:250, 1:500)
- A4 clipboard and folder, with paper.
- Pencils, pens and erasers

Course Evaluation and Development

One of the key priorities in the 2025 Strategy for UNSW is a drive for academic excellence in education. One of the ways of determining how well UNSW is progressing towards this goal is by listening to our own students. Students will be asked to complete the myExperience survey towards the end of this course.

Students can also provide feedback during the semester via: direct contact with the lecturer, the “On-going Student Feedback” link in Moodle, Student-Staff Liaison Committee meetings in schools, informal feedback conducted by staff, and focus groups. Student opinions really do make a difference. Refer to the Moodle site for this course to see how the feedback from previous students has contributed to the course development.

Important note: Students are reminded that any feedback provided should be constructive and professional and that they are bound by the Student Code of Conduct Policy

<https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf>

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Safat Al-Deen		B20 R126	0251145113	from 1:00pm to 2:00 pm on Wednesdays at his office for a consultation	No	Yes
Lecturer	Steven Be Ijanski		only in the university during lecture hours	may provide during lecture	by appointments	No	No

Other Useful Information

Academic Information

Course Evaluation and Development

One of the key priorities in the 2025 Strategy for UNSW is a drive for academic excellence in

education. One of the ways of determining how well UNSW is progressing towards this goal is by listening to our own students. Students will be asked to complete the myExperience survey towards the end of each course.

Students can also provide feedback during the semester via: direct contact with the lecturer, the “On-going Student Feedback” link in Moodle, Student-Staff Liaison Committee meetings in schools, informal feedback conducted by staff, and focus groups (where applicable). Student opinions really do make a difference. Refer to the Moodle site for your course to see how the feedback from previous students has contributed to the course development.

Important note: Students are reminded that any feedback provided should be constructive and professional and that they are bound by the Student Code of Conduct.

<https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf>

Equitable Learning Services (ELS)

Students living with neurodivergent, physical and/or mental health conditions or caring for someone with these conditions may be eligible for support through the Equitable Learning Services team. Equitable Learning Services is a free and confidential service that provides practical support to ensure your mental or physical health conditions do not adversely affect your studies.

Our team of dedicated **Equitable Learning Facilitators (ELFs)** are here to assist you through this process. We offer a number of services to make your education at UNSW easier and more equitable.

Further information about ELS for currently enrolled students can be found at: <https://www.student.unsw.edu.au/equitable-learning>

Academic Honesty and Plagiarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW staff and students have a responsibility to adhere to this principle of academic integrity. All students are expected to adhere to UNSW’s Student Code of Conduct.

Find relevant information at: [Student Code of Conduct \(unsw.edu.au\)](https://www.unsw.edu.au/students/student-code-conduct)

Plagiarism undermines academic integrity and is not tolerated at UNSW. It is defined as using

the words or ideas of others and passing them off as your own, and can take many forms, from deliberate cheating to accidental copying from a source without acknowledgement.

For more information, please refer to the following:

<https://student.unsw.edu.au/plagiarism>

Submission of Assessment Tasks

Special Consideration

Special Consideration is the process for assessing and addressing the impact on students of short-term events, that are beyond the control of the student, and that affect performance in a specific assessment task or tasks.

Applications for Special Consideration will be accepted in the following circumstances only:

- Where academic work has been hampered to a substantial degree by illness or other cause;
- The circumstances are unexpected and beyond the student's control;
- The circumstances could not have reasonably been anticipated, avoided or guarded against by the student; and either:
 - (i) they occurred during a critical study period and was 3 consecutive days or more duration, or a total of 5 days within the critical study period; or
 - (ii) they prevented the ability to complete, attend or submit an assessment task for a specific date (e.g. final exam, in class test/quiz, in class presentation)

Applications for Special Consideration must be made as soon as practicable after the problem occurs and at the latest within three working days of the assessment or the period covered by the supporting documentation.

By sitting or submitting the assessment task the student is declaring that they are fit to do so and cannot later apply for Special Consideration (UNSW 'fit to sit or submit' requirement).

Sitting, accessing or submitting an assessment task on the scheduled assessment date, after applying for special consideration, renders the special consideration application void.

Find more information about special consideration at: <https://www.student.unsw.edu.au/special-consideration/guide>

Or apply for special consideration through your [MyUNSW portal](#).

Late Submission of assessment tasks (other than examinations)

UNSW has a standard late submission penalty of:

- 5% per day,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Electronic submission of assessment

Except where the nature of an assessment task precludes its electronic submission, all assessments must be submitted to an electronic repository, approved by UNSW or the Faculty, for archiving and subsequent marking and analysis.

Release of final mark

All marks obtained for assessment items during the session are provisional. The final mark as published by the university following the assessment review group meeting is the only official mark.