

SURV2210: Engineering Surveying

Callaghan

Semester 1 - 2024



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

OVERVIEW

Course Description	This course introduces students to elementary field and office surveying theory and practice especially in relation to engineering surveying works. It covers topics including areas and volumes, horizontal circular and transition curves and vertical curves, long sections and cross sections, and traverse calculation.
Academic Progress Requirements	Nil
Requisites	This course replaces SURV1120. If you have successfully completed SURV1120 you cannot enrol in this course.
Assumed Knowledge	SURV1200 Introduction to Surveying
Contact Hours	<p>Callaghan</p> <p>Computer Lab Face to Face On Campus 2 hour(s) per week(s) for 13 week(s) starting Week 1</p> <p>Field Study Face to Face On Campus 3 hour(s) per week(s) for 11 week(s) The above distribution of contact hours may alter on a weekly basis and will be confirmed by communications via Canvas. A preliminary timetable will be provided during the lectures or on the course Canvas site.</p> <p>Lecture Face to Face On Campus 2 hour(s) per week(s) for 13 week(s) starting Week 1</p>
Unit Weighting Workload	10 Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

COURSE OUTLINE

CONTACTS

Course Coordinator	Callaghan Dr Mehdi Khaki Mehdi.Khaki@newcastle.edu.au (02) 4921 6626 Consultation: EA128
Teaching Staff	Other teaching staff will be advised on the course Canvas site.
School Office	School of Engineering EAG02 EA Building Callaghan Seng-admin@newcastle.edu.au 9.00am-1.00pm and 2.00pm-5.00pm (Monday to Friday)

SYLLABUS

Course Content	<ul style="list-style-type: none">• Levelling• Distance and Angular Measurement• Use of Total Station• Construction Surveying• Traversing and Calculations• Missing Data in Traverses• Areas and Volumes• Contouring• Long Sections and Cross Sections• Detail Surveys/Route Surveys/Underground Surveying• Circular Curves• Transition Curves• Vertical Curves
Course Learning Outcomes	<p>On successful completion of this course, students will be able to:</p> <ol style="list-style-type: none">1. Apply the fundamental concepts used for the surveying of sites for road and/or rail curves.2. Execute the calculations to permit the setting out of circular and transition horizontal and parabolic vertical road or rail curves.3. Produce surveys and drawings for long sections and cross sections which allow for the calculation of areas and volumes for earthworks for road and rail curves.4. Implement the concepts and practicalities of traversing, especially for control relating to the above matters.
Course Materials	<p>Lecture Materials:</p> <ul style="list-style-type: none">- Course notes are available for downloading from Canvas (https://uonline.newcastle.edu.au/webapps/login/) <p>Other Resources:</p> <ul style="list-style-type: none">- Guide to Road Design Part 3: Geometric Design by Austroads- Guideline for Control Surveys by Differential Levelling by Intergovernmental Committee on Surveying and Mapping (ICSM)- Guideline for Conventional Traverse Surveys by ICSM <p>Recommended Text:</p> <ul style="list-style-type: none">- John Uren and Bill Price, (2010), Surveying for Engineers, 5th edition, Palgrave MacMillan

ASSESSMENTS

This course has 6 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Construction Survey	As notified on the course Canvas site - subject to weather delays in completing the fieldwork components.	Individual	15%	1, 2, 3, 4
2	Traverse Control Survey	As notified on the course Canvas site - subject to weather delays in completing the fieldwork components.	Individual	15%	1, 4
3	In Class Quiz	Week 8	Individual	10%	1, 2, 4
4	Road Design	As notified on the course Canvas site - subject to weather delays in completing the fieldwork components.	Individual	20%	1, 2, 3
5	Set Out	As notified on the course Canvas site - subject to weather delays in completing the fieldwork components.	Group	10%	1, 2, 3
6	Formal Examination	As notified by Examinations section.	Individual	30%	1, 2, 3, 4

Late Submissions The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Construction Survey

Assessment Type Written Assignment
Description Individual Assessment
Weighting 15%
Due Date As notified on the course Canvas site - subject to weather delays in completing the fieldwork components.
Submission Method Online
Assessment Criteria
Return Method
Feedback Provided Online - .

Assessment 2 - Traverse Control Survey

Assessment Type Written Assignment
Description Individual Assessment
Weighting 15%
Due Date As notified on the course Canvas site - subject to weather delays in completing the fieldwork components.
Submission Method Online
Assessment Criteria
Return Method
Feedback Provided Online - .

Assessment 3 - In Class Quiz

Assessment Type Quiz
Description Individual Assessment
Weighting 10%
Due Date Week 8
Submission Method In Class

Assessment Criteria

Return Method

Feedback Provided Online - .

Assessment 4 - Road Design

Assessment Type

Written Assignment

Description

Individual Assessment

Weighting

20%

Due Date

As notified on the course Canvas site - subject to weather delays in completing the fieldwork components.

Submission Method

Online

Assessment Criteria

Return Method

Feedback Provided Online - .

Assessment 5 - Set Out

Assessment Type

Written Assignment

Description

Group Assessment

Weighting

10%

Due Date

As notified on the course Canvas site - subject to weather delays in completing the fieldwork components.

Submission Method

Specific Location

Assessment Criteria

Field Check of Set Out Geometry. Details will be provided on course Canvas site.

Return Method

Feedback Provided Online - .

Assessment 6 - Formal Examination

Assessment Type

Formal Examination

Description

Individual Assessment

Weighting

30%

Due Date

As notified by Examinations section.

Submission Method

Formal Exam

Assessment Criteria

Return Method

Feedback Provided

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.

0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.
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*Skills are those identified for the purposes of assessment task(s).

Communication Methods

Communication methods used in this course include:

- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.

Course Evaluation

Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.

Oral Interviews (Vivas)

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the [Oral Examination \(viva\) Procedure](#). In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the [Student Conduct Rule](#).

Academic Misconduct

All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to <https://policies.newcastle.edu.au/document/view-current.php?id=35>.

Adverse Circumstances

The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:

1. the assessment item is a major assessment item; or
2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system;
3. you are requesting a change of placement; or
4. the course has a compulsory attendance requirement.

Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at:

<https://policies.newcastle.edu.au/document/view-current.php?id=236>

Important Policy Information

The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at <https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures> that support a safe and respectful environment at the University.

This course outline was approved by the Head of School on the 29/01/2024. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.

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