



# GMAT3150

## Surveying Field Projects

Term One // 2021

## Course Overview

### Staff Contact Details

#### Convenors

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#### Lecturers

Name	Email	Availability	Location	Phone
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#### Lab Staff

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### School Contact Information

[Engineering Student Support Services](#) – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

[Engineering Industrial Training](#) – Industrial training questions

[UNSW Study Abroad](#) – study abroad student enquiries (for inbound students)

[UNSW Exchange](#) – student exchange enquiries (for inbound students)

[UNSW Future Students](#) – potential student enquiries e.g. admissions, fees, programs, credit transfer

#### Phone

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)

## **Course Details**

### **Credit Points 6**

### **Summary of the Course**

An off-campus survey camp, where survey projects of substantial extent are carried out involving control survey design and implementation, detail surveys, contour surveys, the design and setting-out of a rural road, and other selected projects. The processing of the field data and the preparation of plans and reports is done during session. Students are required to attend a 4-day residential survey camp at the start of Term 1 equivalent to three contact hours per week, followed by two hours per week project data processing during session.

### **Course Aims**

To broaden and deepen the knowledge of surveying instrumentation, field methods, and surveying software, by students conducting their own field survey over a 4-day intensive period at a site remote from UNSW campus. The aim is to involve students in measurement, survey design, and analysis, and to give them confidence in their ability to carry out field surveys.

### **Course Learning Outcomes**

1. Gain experience with hand held and RTK-GNSS, road surveys, detail surveys, engineering surveys, and close range photogrammetry
2. Gain considerable experience at managing a small group

### **Teaching Strategies**

The field surveys will be conducted as group work. It is not possible for one person to do most of the work and "carry" the others in the group. Following the 4-day intensive camp, on campus processing of the field data, including plan production and reports, as individuals will be required. An extra exercise will be carried out on campus after the camp. There are no lectures in this course. However, there are briefing and debriefing sessions at the field/camp site and training sessions. This course has been very successfully conducted at another site (Morpeth) since 1976 and Berry since 2008, with continual modifications to the exercises as instrument and software have developed. In 2021, for the first time, we will move the camp to the Cataract Scout Park. We will shorten the camp by one day, modify some of the previous exercises accordingly and introduce some new on-campus exercises to be conducted after the camp week. Each year we make improvements to the survey exercises and requirements.

There are a set of back-up exercises that can be carried out if there is heavy rain and flooding that prevents students from conducting the planned fieldwork.

### **Additional Course Information**

Students are expected to have completed GMAT1110, GMAT2500 and GAMA2550 as pre-requisite to this course. GMAT2700 and GMAT2120 are highly recommended to have completed as well. Please discuss with the course coordinator prior to enrolling if unsure.

# Assessment

## Assessment Tasks

Assessment task	Weight	Due Date	Student Learning Outcomes Assessed
Control Survey Report	21%	19/03/2021 04:00 PM	1, 2
Detail Survey Project	28%	09/04/2021 04:00 PM	1, 2
Road Survey Project	36%	23/04/2021 04:00 PM	1, 2
Other survey	15%	23/04/2021 04:00 PM	1, 2

## Assessment Details

### Assessment 1: Control Survey Report

**Start date:** 02/03/2021 10:00 AM

#### Details:

Students do a control survey as a group of 3. This includes testing of hand held GPS and its use for finding survey marks; control survey fieldwork and recovery sketches and analysis and report of the control survey. Design and measure as a group, then analysis and report as individuals. Students are given feedback in the field after they design their network and before measurements. More feedback is given during the off campus data analysis. After marking of their reports students are invited to individual feedback from the lecturer.

Late submissions will be penalised at the rate of 10% per day after the due time and date have expired

### Assessment 2: Detail Survey Project

**Start date:** 02/03/2021 10:00 AM

#### Details:

Students do a detail topographic and contour survey of part of the site as a group of 3. This project builds on the output of the control survey project. Design and measure as a group, then analysis, plans and report as individuals. Students are given feedback in the field after they design their network and before measurements. More feedback is given during the off campus data analysis. After marking of their reports students are invited to request individual feedback from the lecturer.

Late submissions will be penalised at the rate of 10% per day after the due time and date have expired

### Assessment 3: Road Survey Project

**Start date:** 02/03/2021 10:00 AM

**Details:**

Surveying students do a rural road design and set-out survey as a group of 3. Design and measure as a group. Group submission of plans, individual report submission. Students are given feedback in the field after they design their network and before measurements. More feedback is given during the off campus data analysis. After marking of their reports students are invited to individual feedback from the lecturer.

Late submissions will be penalised at the rate of 10% per day after the due time and date have expired

**Assessment 4: Other survey**

**Start date:** 02/03/2021 10:00 AM

**Details:**

Several smaller assessment tasks are included in this category. Survey students undertake a tunnel survey on UNSW campus; a close range photogrammetry survey; and a survey of a 300m catenary cable and subsequent least squares curve fit analysis. Individual reports are submitted.

Late submissions will be penalised at the rate of 10% per day after the due time and date have expired

**Additional details:**

The various exercises will have different due dates depending on circumstances. The lecturer will keep students informed during term.

## Attendance Requirements

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

## Course Schedule

[View class timetable](#)

### Timetable

Date	Type	Content
O Week: 8 February - 12 February		
Week 1: 15 February - 19 February	Tut-Lab	<p>Class scheduled in CE201 - lab. This is a compulsory briefing class giving information about the Survey camp which will be held this year at the Cataract Scout Park in week3.</p> <p>Administrative issues such as payments and forms will need to be finalised by the end of this session.</p> <p>This class will also be presented live online using BBCU.</p> <p>After the briefing and questions, students will then practice upload/download of Sokkia instruments in preparation for the camp.</p> <p>Road calculations can also be performed at this time.</p>
Week 2: 22 February - 26 February	Tut-Lab	<p>Continue to practice using equipment in preparation for field camp.</p> <p>Finalise documentation.</p> <p>Complete road calculations.</p>
Week 3: 1 March - 5 March	Fieldwork	Field camp at Cataract Scout Park from Tuesday 2 March - Friday 5 March.
Week 4: 8 March - 12 March	Tut-Lab	Work on activities completed at field camp in groups. Student groups are encouraged to go to the CE201 lab where they will receive supervision and guidance from their supervisors.
Week 5: 15 March - 19 March	Tut-Lab	Deadline for Control Survey report. Continue working on Detail project.
Week 6: 22 March - 26 March	Fieldwork	<p>Tunnel survey at local park or on-campus TBD.</p> <p>Close range photogrammetry (if not completed at Survey camp).</p> <p>Roundhouse fit project (if flying fox not completed</p>

		or not suitable at Survey Camp).
Week 7: 29 March - 2 April	Tut-Lab	Deadline for detail survey plan. Continue to work on combined survey plan.
Week 8: 5 April - 9 April	Tut-Lab	Deadline for combined area detail survey. Continue to work on Close range photogrammetry report and the road design.
Week 9: 12 April - 16 April	Tut-Lab	Close range photogrammetry report due. Continue to work on road design.
Week 10: 19 April - 23 April	Tut-Lab	Deadline for Road Design report. Continue to work on flying fox (or Roundhouse fit) project (deadline week 11).

## **Resources**

### **Prescribed Resources**

Students should refer to the documents made available on the Moodle site. Students should also refer to lecture notes from previous courses especially GMAT2500 and GMAT2550.

### **Recommended Resources**

#### **Course Evaluation and Development**

This course has evolved over many years. It is an intensive field camp experience and has been previously conducted in Morpeth and Berry. This is the first time it will take place at Cataract Scout Park. Week 1 will provide a compulsory student briefing. This will also be recorded. Students will be expected to practice using equipment (eg uploading and downloading from total station, using RTK etc) in week 1 & 2 in preparation for the survey camp.

During the survey camp there will be an initial WHS briefing and orientation before commencing survey tasks. There will be briefing sessions before each task and/or each night. This is a valuable time where students can ask questions in a relaxed environment and learn from each other as well as receiving guidance from the lecturers.

After camp, a series of tasks with staggered deadlines will be conducted in the lab with assistance from the lecturers.

#### **Laboratory Workshop Information**

Lab and workshop information will be provided on Moodle. Lecturers will be available during the timetabled lab sessions to answer questions and provide assistance.



## **Submission of Assessment Tasks**

Please refer to the Moodle page of the course for further guidance on assessment submission.

## Academic Honesty and Plagiarism

Beware! An assignment that includes plagiarised material will receive a 0% Fail, and students who plagiarise may fail the course. Students who plagiarise are also liable to disciplinary action, including exclusion from enrolment.

Plagiarism is the use of another person's work or ideas as if they were your own. When it is necessary or desirable to use other people's material you should adequately acknowledge whose words or ideas they are and where you found them (giving the complete reference details, including page number(s)). The Learning Centre provides further information on what constitutes Plagiarism at:

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

## Academic Information

[Key UNSW Dates](#) - eg. Census Date, exam dates, last day to drop a course without academic/financial liability etc.

### Final Examinations:

Final exams in Term 1 will be held online between 30th April - 13th May inclusive. You are required to be available on these dates. Please do not to make any personal or travel arrangements during this period.

### Supplementary Examinations:

Supplementary Examinations for Term 1 2021 will be held on 24th - 28th May inclusive should you be required to sit one. You are required to be available on these dates. Please do not to make any personal or travel arrangements during this period.

## ACADEMIC ADVICE

For information about:

- Notes on assessments and plagiarism;
- Special Considerations: [student.unsw.edu.au/special-consideration](https://student.unsw.edu.au/special-consideration);
- General and Program-specific questions: [The Nucleus: Student Hub](#)
- Year Managers and Grievance Officer of Teaching and Learning Committee, and
- CEVSOC/SURVSOC/CEPCA

Refer to Academic Advice on the School website available at:

<https://www.engineering.unsw.edu.au/civil-engineering/student-resources/policies-procedures-and-forms/academic-advice>

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## CRICOS

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## Acknowledgement of Country

We acknowledge the Bedegal people who are the traditional custodians of the lands on which UNSW Kensington campus is located.