

GMAT3420

Cadastral Surveying and Land Law

Term 3, 2022

Week	Tuesday 2 - 4 pm Lec Ainsworth 202 and BBCU	Wednesday 11am – 1pm Lec Ainsworth 202 and BBCU	Wednesday 2 - 4 pm CE201 Lab
1 13-14 Sep	Introduction to Course. Interpreting a Cadastral Plan of Survey (DP) BRH	Intro to Cadastral Surveying and the Legal System of NSW. Preparation of manual & electronic field notes for Cadastral Surveys. CM	Reading a Plan of Survey. BRH
2 20-21 Sep	Torrens and Old System Land Titles in NSW. Estates in land. Joint ownership CM	Investigating Titles and Organising Search. CM	Computer lab exercises CM
3 27-28 Sep	Boundaries - General and Fixed, Urban Boundaries. Monuments and occupations CM	Boundary Re-location & Identification Surveys. Identification Reports and Calculations SH	Ident Survey ass ^l searching and preparation BRH
4 4-5 Oct	Natural Boundaries, Rural surveys, and Related Survey Practice. SH	Prac: Boundary Location in the Field BRH	Mid-term test BRH
5 11-12 Oct	Interests in land: Easements & Restrictions. Preparation of Draft Documents - Sec 88b, Covenants and OS Descriptions. CM	Cadastral Problems. Practical analysis of Cadastral Problems. Urban Surveys SH	Lab exercises BRH
6	<i>No class. Ident Survey fieldwork</i>	<i>No class. Ident Survey fieldwork</i>	<i>No class. Ident Survey fieldwork</i>
7 25-26 Oct	Road & Railways. Calculation of impact of road repositioning on Boundaries. SH	Leases of Land, PCA Surveys. CM	LandXML Computer lab exercises BRH
8 1-2 Nov	Strata and Community Titles. Preparation & Calculation of Strata Plan (part 1). AB	Strata and Community Titles. Preparation and Calculation of Strata Plan (part 2). AB	Strata Lab and assignment AB
9 8-9 Nov	Cadastral Coordinates and LandXML BRH	Case Study – complex boundary definition. BRH	Student presentations BRH
10 15-16 Nov	Student presentations BRH	Discussions, Ethics & Revision BRH	Computer lab exercises BRH

Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Bruce Harvey	B.Harvey@unsw.edu.au	No appointment needed. Walk in or email.	CE 207	02 9385 4178

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

Units of Credit 6

Summary of the Course

Introduction to the legal system in Australia and NSW. The nature of land law, including land tenure, estates in land, and interests in land. Land title systems, and especially land administration in Australia and NSW. Study of appropriate statutes and regulations. Boundary surveying principles and cadastral mapping in NSW. Survey investigation for both artificial and natural boundaries; survey and title searching; field note preparation for cadastral surveying; survey marking and preparation of plans of survey; cadastral survey techniques for urban and rural properties; the status of roads in NSW; strata plan surveys; identification surveys; consents for MHWM, railways, rivers, kerbs in Sydney; and the role of coordinates in cadastral surveying.

Course Aims

The aims of the course are to introduce the principles of land law and cadastral surveying. In particular to assist students to learn factors that lead to the redefinition of boundaries in NSW and to guide students on the educational requirements that meet the registration requirements of the Board of Surveying & Spatial Information (BOSSI) for registration as a Cadastral Surveyor in NSW.

Course Learning Outcomes

After successfully completing this course, you should be able to:

Learning Outcome	EA Stage 1 Competencies
1. Understand the legal and practical principles that assist in the shaping of the cadastre, original definition and relocation of various land title boundaries in NSW, and understand the impact of such decisions on society	PE1.1, PE1.3
2. Develop an understanding of professional and ethical responsibilities, and demonstrate a commitment to uphold them	PE3.1, PE3.3
3. Have the ability to function effectively as an individual and in multidisciplinary and multicultural teams, as a team leader or manager as well as an effective team member	PE2.4, PE3.2, PE3.5, PE3.6

Teaching Strategies

Lectures, both in the class and field, will be combined with tutorials based on problems that are encountered in the surveying profession.

A team of three industry based experts teach this course with one UNSW academic.

Assessment

Assessment task	Weight	Due Date	Course Learning Outcomes Assessed
1. Final Exam	40%	Not Applicable	1, 2, 3
2. Computer lab exercises and quizzes	30%	Not Applicable	1, 2, 3
3. Assignment: Identification Survey	15%	01/11/2022 10:00 AM	1, 2, 3
4. Assignment: Strata Plan	15%	16/11/2022 10:00 AM	1, 2, 3

Assessment 1: Final Exam

Marks returned: Via formal UNSW course results

The Final exam will be in the UNSW exam period. Past papers will be supplied.

Assessment criteria

Exam will be marked by course convenor. Exam paper and marking scheme will be reviewed by another academic.

Assessment 2: Computer lab exercises and quizzes

Marks returned: Moodle quiz questions give feedback and marks as soon as the work is submitted.

There will be a variety of lab tasks in GMAT3420. The computer lab tasks will be delivered, managed and assessed via Moodle quizzes and auditing. Using Moodle to administer the tasks will enable students to see their progress and to work on the tasks at a pace that suits them. The requirements for lab work are given in the Moodle quizzes and assistance is available in the textbook files. Students will also be required to demonstrate their knowledge in a seminar presentation to the class and in a small test in the computer lab.

Additional details

The marks for each task are included in the quiz questions.

There are a few types of lab tasks in this course. The Computer lab quizzes will include a presentation by each student (5% of course mark), and a larger quiz before the census date (15% of course mark). These will be marked by the supervisor in the usual way and with marking schemes provided separately.

The other 10 marks will be formed by the online weekly Moodle quiz questions. Each question will include how many marks are available for that question. Students are allowed multiple attempts at these questions. The mark for each individual question is shown in the question. They are mostly multiple choice answer style, with some T/F questions.

Students will be treated in this assessment component like professional surveyors. You will record

whether you have completed the task yourself or not, and you may have multiple attempts at a task until you have mastered it. So that component depends on your honesty. However, as with surveyors you will be required to undergo random audits where you show or demonstrate evidence of your work to the supervisor. The lab work will be audited in the student's presence by viewing the students' notes or computer screens and immediate feedback will be given. There is no need to rewrite the work or to submit formal well written reports. Generally the work will not be collected or be examined in detail unless a student has had difficulties getting correct or good quality output. Generally, lab marks will be assigned using a mastery scheme, i.e. if the work is acceptable it will get full marks if it is not acceptable it will get zero marks, students can resubmit in this case.

Assessment 3: Assignment: Identification Survey

Due date: 01/11/2022 10:00 AM

Marks returned: Usually within 1 week of submission.

The assignment is designed to give students experience with real cadastral surveys. Group work, usually groups of 2 or 3 students. Students will be required to complete a field survey of a selected urban property that is to be approved by the course coordinator. This assignment will be completed outside of the time allocated for classes and students must obtain their own title and plan searches. The quality of these searches will be assessed and graded. Access is available to a limited range of the School's surveying instruments and equipment for these exercises and is subject to the approval of the lecturer-in-charge of the course.

Assessment criteria

Marks are assigned for the quality of each of the following components: Quality of search; Letter to client; Plan to client; Report quality; a Plan showing lines measured, e.g. traverse and radiations; Survey checks and redundancy described; Site photos and or Aerial photos (not essential, but useful); PO comparisons; Quality of survey e.g. design, closes; Field notes included and quality; Job costing (hours spent); and DP and title in appendix to report. There should also be some discussion of the learning outcomes achieved in this assignment. Spelling mistakes in the letter to client or poor grammar will detract from a student's mark.

Assessment 4: Assignment: Strata Plan

Due date: 16/11/2022 10:00 AM

Marks returned: Before the final exam

The assignment is designed to give students experience with real cadastral surveys. Group work, usually groups of 2 or 3 students. The strata survey uses architectural plans provided. Students will be required to prepare a Strata Plan to standards required by NSW Legislation.

Assessment criteria

Marks are assigned for the quality of each of the following components:

Location plan and **floor plan** to be drawn on plan form 1.

Floors, ceilings and the external walls of the building to form part of common property.

Check against the requirements for plan preparation to make sure all necessary line work, offsets and

statements appear on the plan. Any dimensions not shown on the architectural plans can be scaled or guessed.

The plan must be in a registrable form. The location plan and floor plan sheets must state the reduction ratio and have a north point directed upwards.

Details of Plan Preparation for the **Location Plan**: The external boundaries of the land being subdivided and their lengths; The external limits of the building and any other structures used to define the lots on the floor plan; The identity of the building by indicating the street number, the number of levels and the materials of its external construction; The boundaries of any lots not within the building (these should not be dimensioned); When a building containing lots within 2 metres of a parcel boundary, connections must be provided from the building to the parcel boundary; When a lot external to a building is within 2 metres of a parcel boundary, connections must be provided from the structural feature used to define the lot to the parcel boundary. These connections should correspond to those used on the floor plan to define the lots. The connections must be sufficient to establish that any lot boundaries are along or within the parcel boundaries. Connections are not required on the location plan if the lot boundaries are coincident with the parcel boundary. In this instance a note should be added to the relevant boundary; All connections must be perpendicular from specific points on a structure or prolongations of the face of the structure; The identity of any other structural feature used on the floor plan to define lots by reference to its nature and material of its construction; The identities of the adjoining lands; If an encroachment exists sufficient information to indicate the extent and nature of the encroachment.

Details of Plan Preparation for the **Floor Plan**: Stratum statements for those parts of the lots which do not have structural cover and or a structural base to define their horizontal boundaries (ie upper and lower limits); The lot number for each lot or part lot. Part lots must be identified as such. Lot numbering must be consecutive and commence with lot 1; An area for each lot or part lot. Part lot areas should be shown in brackets and a total area must be shown within or relevant to the most significant part of the lot. Thick lines for structural boundaries. Thin lines with sufficient connections from walls and other structural features to define those lines. The plan may include a statement indicating the areas are approximate.; The site and description of all easements which affect the lots and are to be created upon registration of the plan; Separate floors of the building must be shown from the lowest level to the highest level; notations to clearly identify any encroachment that is designated for use with a lot; Show all structures on a lot that are outside a building and within 1 metre of the boundary of the lot and include notations to clearly identify whether each such structure is common property or part of the lot. This is not required for fencing within the meaning of the Dividing Fences Act 1991; Any other notes which indicate items which are within the air space of a lot are to form common property and not part of the lot. For example "The hot water service within the courtyard of lot 1 is common property and not part of the lot." See Lodgement Rules Schedules 10 to 14 for full requirements.

Attendance Requirements

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

Course Schedule

See page 1 and our class Moodle.

[View class timetable](#)

Timetable

Date	Type	Content
Week 8: 31 October - 4 November	Assessment	Assignment: Identification Survey
Week 10: 14 November - 18 November	Assessment	Assignment: Strata Plan

Resources

Recommended Resources

- Lists of reading material will be made available together with handouts on the class Moodle site, related to specific topics in relevant weeks. Students should read the relevant material prior to the lecture and should then be in a position to ask questions to clarify and ensure their understanding of each topic.
- Additional materials will be provided on Moodle.

Course Evaluation and Development

This will be discussed in class.

Submission of Assessment Tasks

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

UNSW has a standard late submission penalty of:

- 5% per day, for all assessments where a penalty applies, capped at five days (120 hours), after which a student cannot submit an assessment, and no permitted variation.

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

Final Examinations:

Final exams in T3 2022 will be held online between 25th November - 8th December 2022 inclusive, and supplementary exams between 9th - 13th January 2023 inclusive. You are required to be available on these dates. Please do not to make any personal or travel arrangements during this period.

ACADEMIC ADVICE

- Key Staff to Contact for Academic Advice (log in with your zID and password): <https://intranet.civeng.unsw.edu.au/key-staff-to-contact-during-your-studies-at-unsw>
- [Key UNSW Dates](#) - eg. Census Date, exam dates, last day to drop a course without academic/financial liability etc.
- CVEN Student Intranet (log in with your zID and password): <https://intranet.civeng.unsw.edu.au/student-intranet>
- Student Life at CVEN, including Student Societies: <https://www.unsw.edu.au/engineering/civil-and-environmental-engineering/student-life>
- Special Consideration: <https://student.unsw.edu.au/special-consideration>
- General and Program-Specific Questions: [The Nucleus: Student Hub](#)
- Book an Academic Advising session: <https://app.acuityscheduling.com/schedule.php?owner=19024765>

Disclaimer

This course outline sets out description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle should be consulted for the up to date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline (as updated in Moodle), the description in the Course Outline/Moodle applies.

Image Credit

Cover image created by Bruce Harvey. Thank you for thoroughly reading this course outline. The first student to go to CE207 might get a small reward.

CRICOS

CRICOS Provider Code: 00098G

Acknowledgement of Country

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

Appendix: Engineers Australia (EA) Professional Engineer Competency Standard

Program Intended Learning Outcomes	
Knowledge and skill base	
PE1.1 Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline	✓
PE1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline	
PE1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline	✓
PE1.4 Discernment of knowledge development and research directions within the engineering discipline	
PE1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline	
PE1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline	
Engineering application ability	
PE2.1 Application of established engineering methods to complex engineering problem solving	
PE2.2 Fluent application of engineering techniques, tools and resources	
PE2.3 Application of systematic engineering synthesis and design processes	
PE2.4 Application of systematic approaches to the conduct and management of engineering projects	✓
Professional and personal attributes	
PE3.1 Ethical conduct and professional accountability	✓
PE3.2 Effective oral and written communication in professional and lay domains	✓
PE3.3 Creative, innovative and pro-active demeanour	✓
PE3.4 Professional use and management of information	
PE3.5 Orderly management of self, and professional conduct	✓
PE3.6 Effective team membership and team leadership	✓