



UNSW Course Outline

ELEC9765 Space Law and Radio Regulations - 2024

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General Course Information

Course Code : ELEC9765

Year : 2024

Term : Term 3

Teaching Period : T3

Is a multi-term course? : No

Faculty : Faculty of Engineering

Academic Unit : School of Electrical Engineering & Telecommunications

Delivery Mode : In Person

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Postgraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

Space is a realm for humankind and human space activities transcend national boundaries. Hence there is a need for space regulation to be implemented at both international and national levels. This exciting course gives engineering students seeking a future in the space industry a

solid grounding in space law and radio regulations.

The course starts with an introduction to legal frameworks and the formulation of laws. It then covers the international treaties that comprise the international regulatory framework for space activities, leading to the study of national legislative systems with a focus on the 1988 Australian Space Activities Act. The various engineering, environment, and regulatory implications of these legal systems will also be discussed. The course will then discuss the interaction between Space Law and developments in space technology as well as the impact of Space Legislation on Engineering decisions.

Course Aims

This course is a core course in the Space Systems Engineering stream in the Master of Engineering Science degree ELECTS8338. In this course students will:

- Learn about the fundamental legal frameworks and how they are developed.
- Learn about the historical context of space law and the International Space Treaties governing human space activities.
- Describe the specific 'hard' and 'soft' law principles that have been developed for the regulation of activities in outer space, as well as the unique complexities inherent in designing regulatory principles and guidelines for the space environment.
- Learn about national space legislations and in particular the Australian Space Activities Act 1998.
- Learn about the radio regulations frameworks and their application to space systems.
- Learn about the environmental aspects of space law (e.g. space debris).
- Learn about the implications of space law to a number of applications of satellites and spacecraft.
- Take a look at the future of Space from a legislative perspective (e.g., cubesats, space tourism...).

Relationship to Other Courses

This is a core course of the ELECTS8338 Space Systems Engineering masters program.

Course Learning Outcomes

Course Learning Outcomes
CL01 : Describe the legal systems governing space activities.
CL02 : Describe the treaties on the use of outer space and their implications for the nations that are signatory to them.
CL03 : Explain the need for national space legislation and describe the Australian Space Activities Act.
CL04 : Describe the various uses of outer space, the engineering decisions involved, and the legal principles that govern them.

Course Learning Outcomes	Assessment Item
CLO1 : Describe the legal systems governing space activities.	<ul style="list-style-type: none"> • Final Exam • Module Exercises
CLO2 : Describe the treaties on the use of outer space and their implications for the nations that are signatory to them.	<ul style="list-style-type: none"> • Assignment • Final Exam • Module Exercises
CLO3 : Explain the need for national space legislation and describe the Australian Space Activities Act.	<ul style="list-style-type: none"> • Assignment • Final Exam • Module Exercises
CLO4 : Describe the various uses of outer space, the engineering decisions involved, and the legal principles that govern them.	<ul style="list-style-type: none"> • Final Exam • Module Exercises

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

The course principally undertaken by students in self-directed and self-paced mode. The

Other Professional Outcomes

Relationship to Engineers Australia Stage 1 competencies:

The Course Learning Outcomes (LOs) contribute to the Engineers Australia (National Accreditation Body) Stage I competencies as outlined below

Engineers Australia (EA), Professional Engineer Stage 1 Competencies

PE1: Knowledge and Skill Base:

PE1.1 Comprehensive, theory-based **understanding of underpinning fundamentals**: NA

PE1.2 Conceptual understanding of underpinning maths, **analysis**, statistics, **computing**: NA

PE1.3 In-depth understanding of specialist bodies of **knowledge**: LO 1, 2, 3

PE1.4 Discernment of knowledge development and research directions: 4

PE1.5 Knowledge of **engineering design** practice: LO 1,2 3

PE1.6 Understanding of scope, principles, norms, accountabilities of sustainable engineering practice: NA

PE2: Engineering Application Ability:

PE2.1 Application of established engineering methods to **complex problem solving**: NA

PE2.2 Fluent **application of engineering techniques**, tools and resources: NA

PE2.3 Application of systematic engineering synthesis and design processes: LO 3,4

PE2.4 Application of systematic approaches to the conduct and management of engineering projects: NA

PE3: Professional and Personal Attributes:

PE3.1 Ethical conduct and professional accountability: LO 3,4

PE3.2 Effective **oral and written communication** (professional and lay domains): NA

PE3.3 **Creative, innovative** and pro-active demeanour: NA

PE3.4 Professional use and management of information: LO 1,3

PE3.5 Orderly management of **self, and professional conduct**: LO 1,3

PE3.6 Effective team membership and team leadership: NA

This course is also designed to provide the course learning outcomes which arise from targeted graduate capabilities. The targeted graduate capabilities broadly support the UNSW and Faculty of Engineering graduate capabilities (also listed below).

Targeted Graduate Capabilities

Electrical Engineering and Telecommunications programs are designed to address the following targeted capabilities which were developed by the school in conjunction with the requirements of professional and industry bodies:

- The ability to apply knowledge of basic science and fundamental technologies;
- The skills to communicate effectively, not only with engineers but also with the wider community;
- The capability to undertake challenging analysis and design problems and find optimal solutions;
- Expertise in decomposing a problem into its constituent parts, and in defining the scope of each part;
- A working knowledge of how to locate required information and use information resources to their maximum advantage;
- Proficiency in developing and implementing project plans, investigating alternative solutions, and critically evaluating differing strategies;
- An understanding of the social, cultural and global responsibilities of the professional engineer;
- The ability to work effectively as an individual or in a team;
- An understanding of professional and ethical responsibilities;

- The ability to engage in lifelong independent and reflective learning

UNSW Graduate Capabilities

The course delivery methods and course content directly or indirectly addresses a number of core UNSW graduate capabilities, as follows:

- Developing scholars who have a deep understanding of their discipline, through lectures and solution of analytical problems in tutorials and assessed by assignments and written examinations.
- Developing rigorous analysis, critique, and reflection, and ability to apply knowledge and skills to solving problems. These will be achieved by the laboratory experiments and interactive checkpoint assessments and lab exams during the labs.
- Developing capable independent and collaborative enquiry, through a series of tutorials spanning the duration of the course.
- Developing independent, self-directed professionals who are enterprising, innovative, creative and responsive to change, through challenging design and project tasks.
- Developing citizens who can apply their discipline in other contexts, are culturally aware and environmentally responsible, through interdisciplinary tasks, seminars and group activities

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Final Exam Assessment Format: Individual	40%	Start Date: Not Applicable Due Date: Not Applicable
Assignment Assessment Format: Individual Short Extension: Yes (7 days)	20%	Start Date: Not Applicable Due Date: Not Applicable
Module Exercises Assessment Format: Individual	40%	Start Date: Not Applicable Due Date: Not Applicable

Assessment Details

Final Exam

Assessment Overview

The final end-of-term exam covers all material presented during the term. Marks will be assigned according to the correctness of the responses.

Course Learning Outcomes

- CLO1 : Describe the legal systems governing space activities.
- CLO2 : Describe the treaties on the use of outer space and their implications for the nations that are signatory to them.

- CL03 : Explain the need for national space legislation and describe the Australian Space Activities Act.
- CL04 : Describe the various uses of outer space, the engineering decisions involved, and the legal principles that govern them.

Assessment Length

2 hours

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

Assignment

Assessment Overview

In this assignment students are required to overview and discuss an area of Space Law: e.g., pick two national space legislations and compare and contrast them focusing on their effectiveness in regulating the national space activities of the country they belong to. Feedback on the student's idea through assessment and grading of submission.

Course Learning Outcomes

- CL02 : Describe the treaties on the use of outer space and their implications for the nations that are signatory to them.
- CL03 : Explain the need for national space legislation and describe the Australian Space Activities Act.

Assessment Length

N/A

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are

not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

Module Exercises

Assessment Overview

The course contents are divided into 4 major modules: Introduction to International and Space Law, Applications of Space Law, National Space Legislations, and Interaction between Space Law and Technology. Progress quizzes will be scheduled at the completion of each module to assess your understanding of the course material. Marks will be assigned according to the correctness of the responses and verbal class-wide feedback will be given during lectures.

Course Learning Outcomes

- CL01 : Describe the legal systems governing space activities.
- CL02 : Describe the treaties on the use of outer space and their implications for the nations that are signatory to them.
- CL03 : Explain the need for national space legislation and describe the Australian Space Activities Act.
- CL04 : Describe the various uses of outer space, the engineering decisions involved, and the legal principles that govern them.

Assignment submission Turnitin type

Not Applicable

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

General Assessment Information

Grading Basis

Standard

Requirements to pass course

N/A

Course Schedule

Attendance Requirements

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

General Schedule Information

The course comprises four modules covering the following areas of space law:

1. Introduction to International and Space Law
2. Applications of Space Law
3. National Space Legislations
4. Interaction Between Space Law and Technology

The course schedule will be announced on Moodle.

Course Resources

Prescribed Resources

This course does not have a prescribed textbook and relevant reading from any source is encouraged. However, recommended text include (but are not limited to) the list below.

Additional reference material may be posted on Moodle.

Recommended Resources

1. I.H. Ph.Diederiks-Verscoor and P. Kopal, An Introduction to Space Law, Wolters Kluwer, 2008
2. F. Lyall and P.B. Larsen, Space Law: A Treatise, Ashgate Publishing, 2009
3. R.S. Jakhu, National Regulation of Space Activities, Springer, 2010

Course Evaluation and Development

This course is under constant revision in order to improve the learning outcomes for all students. Please forward any feedback (positive or negative) on the course to the course convener or via the Course and Teaching Evaluation and Improvement Process. You can also provide feedback to ELSOC who will raise your concerns at student focus group meetings. As a result of previous feedback obtained for this course and in our efforts to provide a rich and meaningful learning experience, we have continued to evaluate and modify our delivery and assessment methods.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Elias Aboutanios		G17, Room 445			No	Yes

Other Useful Information

Academic Information

I. Special consideration and supplementary assessment

If you have experienced an illness or misadventure beyond your control that will interfere with your assessment performance, you are eligible to apply for Special Consideration prior to, or within 3 working days of, submitting an assessment or sitting an exam.

Please note that UNSW has a Fit to Sit rule, which means that if you sit an exam, you are declaring yourself fit enough to do so and cannot later apply for Special Consideration.

For details of applying for Special Consideration and conditions for the award of supplementary assessment, please see the information on UNSW's [Special Consideration page](#).

II. Administrative matters and links

All students are expected to read and be familiar with UNSW guidelines and policies. In particular, students should be familiar with the following:

- [Attendance](#)
- [UNSW Email Address](#)
- [Special Consideration](#)
- [Exams](#)
- [Approved Calculators](#)
- [Academic Honesty and Plagiarism](#)
- [Equitable Learning Services](#)

III. Equity and diversity

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convenor prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equitable

Learning Services. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

IV. Professional Outcomes and Program Design

Students are able to review the relevant professional outcomes and program designs for their streams by going to the following link: <https://www.unsw.edu.au/engineering/student-life/student-resources/program-design>.

Note: This course outline sets out the 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 or your primary learning management system (LMS) 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/Moodle/LMS, the description in the Course Outline/Moodle/LMS applies.

Academic Honesty and Plagiarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.*

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a website with a wealth of resources to support students to understand and avoid plagiarism, visit: student.unsw.edu.au/plagiarism. The Learning Centre assists students with understanding academic integrity and how not to plagiarise. They also hold workshops and can help students one-on-one.

You are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and the proper referencing of sources in preparing all assessment tasks.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures

can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in an honours thesis or contract cheating) even suspension from the university. The Student Misconduct Procedures are available here:

www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

Submission of Assessment Tasks

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of five percent (5%) of the maximum mark possible for that assessment item, per calendar day.

The late penalty is applied per calendar day (including weekends and public holidays) that the assessment is overdue. There is no pro-rata of the late penalty for submissions made part way through a day. This is for all assessments where a penalty applies.

Work submitted after five days (120 hours) will not be accepted and a mark of zero will be awarded for that assessment item.

For some assessment items, a late penalty may not be appropriate. These will be clearly indicated in the course outline, and such assessments will receive a mark of zero if not completed by the specified date. Examples include:

- Weekly online tests or laboratory work worth a small proportion of the subject mark;
- Exams, peer feedback and team evaluation surveys;
- Online quizzes where answers are released to students on completion;
- Professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date; and,
- Pass/Fail assessment tasks.

Faculty-specific 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)

School-specific Information

General Conduct and Behaviour

Consideration and respect for the needs of your fellow students and teaching staff is an expectation. Conduct which unduly disrupts or interferes with a class is not acceptable and students may be asked to leave the class.

Use of AI for assessments

Your work must be your own. If you use AI in the writing of your assessment, you must acknowledge this and your submission must be substantially your own work. More information can be found on this [website](#).

Workplace Health & Safety (WHS)

WHS for students and staff is of utmost priority. Most courses involve laboratory work. You must follow the [rules about conduct in the laboratory](#). About COVID-19, advice can be found on this [website](#).

School Contact Information

Consultations: Lecturer consultation times will be advised during the first lecture. You are welcome to email the tutor or laboratory demonstrator, who can answer your questions on this course and can also provide you with consultation times. ALL email enquiries should be made from your student email address with ELEC/TELExxxx in the subject line; otherwise they will not be answered.

Keeping Informed: Announcements may be made during classes, via email (to your student email address) and/or via online learning and teaching platforms – in this course, we will use Moodle <https://moodle.telt.unsw.edu.au/login/index.php>. Please note that you will be deemed to have received this information, so you should take careful note of all announcements.

Student Support Enquiries

[For enrolment and progression enquiries please contact Student Services](#)

Web

[Electrical Engineering Homepage](#)