

ELEC9765

Space Law and Radio Regulations

Term 3, 2022



Course Overview

Staff Contact Details

Convenors

| Name | Email | Availability | Location | Phone |
|------------------|--|--------------|----------|----------------|
| Elias Aboutanios | elias@unsw.edu.au | | EEB 445 | 61 2 9385 5010 |

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](#)

[Engineering Student Support Services](#)

[Engineering Industrial Training](#)

[UNSW Study Abroad and Exchange](#) (for inbound students)

[UNSW Future Students](#)

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)

Email

[Engineering Student Support Services](#) – current student enquiries

- e.g. enrolment, progression, 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

Course Details

Units of Credit 6

Summary of the Course

This course covers, in detail, space law and radio regulations. 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. Space is a realm for humankind and human space activities transcend national boundaries.

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Course Aims

This course belongs to the Masters Program: ELECOS8338 - Masters of Engineering Science Extension in Satellite Systems Engineering.

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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...).

Course Learning Outcomes

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

| Learning Outcome | EA Stage 1 Competencies |
|---|--|
| 1. Describe the legal systems governing space activities. | PE1.3, PE1.5, PE3.4, PE3.5 |
| 2. Describe the treaties on the use of outer space and their implications for the nations that are signatory to them. | PE1.3, PE1.5 |
| 3. Explain the need for national space legislation and describe the Australian Space Activities Act. | PE1.3, PE1.5, PE2.3, PE3.1, PE3.4, PE3.5 |
| 4. Describe the various uses of outer space, the engineering decisions involved, and the legal principles that govern them. | PE1.4, PE2.3, PE3.1 |

Teaching Strategies

The course delivery is principally built on the lectures. Beside the regular lecture format, some lectures involve student participation by giving them topics to research and present. The lectures are supported by an assignment and a seminar.

Additional Course Information

This is a masters course that forms part of the ELECTS8338 Satellite Systems Engineering Stream. It is also available to Undergraduate students as a substitution for an L4 elective (subject to approval by the Course and Program Authorities).

Assessment

| Assessment task | Weight | Due Date | Course Learning Outcomes Assessed |
|---------------------|--------|---------------------|-----------------------------------|
| 1. Module Exercises | 40% | Not Applicable | 1, 2, 3, 4 |
| 2. Assignment | 20% | 15/11/2022 12:00 AM | 2, 3 |
| 3. Final Exam | 40% | Not Applicable | 1, 2, 3, 4 |

Assessment 1: Module Exercises

Progress quizzes at end of each module

Assessment 2: Assignment

Start date: 04/10/2022 12:00 AM

Due date: 15/11/2022 12:00 AM

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.

This is not a Turnitin assignment

Assessment 3: Final Exam

Assessment length: 2 hours

This is the final exam of the course.

Attendance Requirements

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

Course Schedule

| Weeks | Module | Indicative Topic Breakdown |
|-------|--|---|
| 1-3 | Introduction to International and Space Law | <ol style="list-style-type: none"> 1. Introduction to International Law 2. Historical development of space law 3. International legal framework of space |
| 4,5 | Applications of Space Law | <ol style="list-style-type: none"> 1. Space Sustainability: Environmental aspects of space activities 2. Commercial uses of outer space 3. Remote Sensing 4. Navigation 5. Military uses of outer space |
| 6 | Flexibility Week | |
| 7,8 | National Space Legislations | <ol style="list-style-type: none"> 1. Relationship between international and national laws 2. Relationship between international and national space laws 3. History of Australia's space activities 4. Overview of Australia's Space Laws |
| 9,10 | Interaction between Space Law and Technology | <ol style="list-style-type: none"> 1. The Impact of Space Law on Engineering Decisions 2. The impact of Engineering and Technology on Space Law 3. Recent developments and emerging challenges 4. Space Law and the Future |

[View class timetable](#)

Timetable

| Date | Type | Content |
|------------------------------------|------------|------------|
| Week 10: 14 November - 18 November | Assessment | Assignment |

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.

Academic Honesty and Plagiarism

Academic Honesty and Plagiarism

Plagiarism is the unacknowledged use of other people's work, including the copying of assignment works and laboratory results from other students. Plagiarism is considered a form of academic misconduct, and the University has very strict rules that include some severe penalties. For UNSW policies, penalties and information to help you avoid plagiarism, see <https://student.unsw.edu.au/plagiarism>. To find out if you understand plagiarism correctly, try this short quiz: <https://student.unsw.edu.au/plagiarism-quiz>.

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.

Academic Information

COVID19 - Important Health Related Notice

Your health and the health of those in your class is critically important. You must stay at home if you are sick or have been advised to self-isolate by [NSW health](#) or government authorities. Current alerts and a list of hotspots can be found [here](#). **You will not be penalised for missing a face-to-face activity due to illness or a requirement to self-isolate.** We will work with you to ensure continuity of learning during your isolation and have plans in place for you to catch up on any content or learning activities you may miss. Where this might not be possible, an application for fee remission may be discussed.

If you are required to self-isolate and/or need emotional or financial support, please contact the [Nucleus: Student Hub](#). If you are unable to complete an assessment, or attend a class with an attendance or participation requirement, please let your teacher know and apply for [special consideration](#) through the [Special Consideration portal](#). To advise the University of a positive COVID-19 test result or if you suspect you have COVID-19 and are being tested, please fill in this [form](#).

UNSW requires all staff and students to follow NSW Health advice. Any failure to act in accordance with that advice may amount to a breach of the Student Code of Conduct. Please refer to the [Safe Return to Campus](#) guide for students for more information on safe practices.

Dates to note

Important Dates available at: <https://student.unsw.edu.au/dates>

Student Responsibilities and Conduct

Students are expected to be familiar with and adhere to all UNSW policies (see <https://student.unsw.edu.au/policy>), and particular attention is drawn to the following:

Workload

It is expected that you will spend at least **15 hours per week** studying a 6 UoC course, from Week 1 until the final assessment, including both formal classes and *independent, self-directed study*. In periods where you need to complete assignments or prepare for examinations, the workload may be greater. Over-commitment has been a common source of failure for many students. You should take the required workload into account when planning how to balance study with employment and other activities.

Attendance

Regular and punctual attendance at all classes is expected. UNSW regulations state that if students attend less than 80% of scheduled classes they may be refused final assessment.

Work Health and Safety

UNSW policy requires each person to work safely and responsibly, in order to avoid personal injury and to protect the safety of others.

Special Consideration and Supplementary Examinations

You must submit all assignments and attend all examinations scheduled for your course. You can apply for special consideration when illness or other circumstances beyond your control interfere with an assessment performance. If you need to submit an application for special consideration for an exam or assessment, you must submit the application **prior to the start** of the exam or before the assessment is submitted, except where illness or misadventure prevent you from doing so. Be aware of the “fit to sit/submit” rule which means that if you sit an exam or submit an assignment, you are declaring yourself well enough to do so and cannot later apply for Special Consideration. For more information and how to apply, see <https://student.unsw.edu.au/special-consideration>.

Administrative Matters

On issues and procedures regarding such matters as special needs, equity and diversity, occupational health and safety, enrolment, rights, and general expectations of students, please refer to the School and UNSW policies:

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

<https://www.engineering.unsw.edu.au/electrical-engineering/resources>

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

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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 | |