Course Outline

Term 2 2020

AVEN1920

INTRODUCTION TO AIRCRAFT ENGINEERING

Contents

1. Staff contact details

Contact details and consultation times for course convenor

Name: Dr John Olsen
Office location: J17 Ainsworth Building 311/C
Tel: (02) 9385 5217
Email: j.olsen@unsw.edu.au
Moodle: https://moodle.telt.unsw.edu.au/login/index.php

Consultation with me concerning this course will be available at a time to be decided.
Consultation by email should only be used as a very last resort as it is clumsy and inefficient.

Contact details and consultation times for additional lecturers/demonstrators/lab staff

Mechanics will be taught by:

Name: Dr Sangarapillai Kanapathipillai
Office Location: J17 Ainsworth Building 408/J
Tel: +61 2 9385 4251
Fax: (02) 9663 1222
Email: s.kanapathipillai@unsw.edu.au

Please see the course Moodle.

2. Important links

- Moodle
- Lab Access
- Health and Safety
- Computing Facilities
- Student Resources
- Course Outlines
- Engineering Student Support Services Centre
- Makerspace
- UNSW Timetable
- UNSW Handbook
- UNSW Mechanical and Manufacturing Engineering

3. Credit points

Credit points

This is a 6 unit-of-credit (UoC) course and involves 4 hours per week (h/w) of scheduled online contact.

The normal workload expectations of a student are approximately 25 hours per term for each UOC, including class contact hours, other learning activities, preparation and time spent on all assessable work.

You should aim to spend about 6 h/w on this course. The additional time should be spent in making sure that you understand the lecture material, completing the set assignments, further reading, and revising for any examinations.

Contact hours

	Day	**Time**	**Delivery Mode**
Lectures	Wednesday	10:00 – 12:00	Moodle Recorded Lectures
	Thursday	14:00 – 16:00	Moodle Recorded Lectures

All classes in T2 2020 will be online. Please consult this course's Moodle module for details about delivery.

Summary and Aims of the course

Introduction to the course

Students of AVEN1920 are either trainee pilots or people hoping to become administrators in the aviation sector. In this course, I would like you to gain an appreciation of how aerospace engineers manage to keep aircraft in the sky, safely.

Course description as an invitation to learn

If you are a trainee pilot, I would like you to think about how gaining knowledge about the performance of aircraft might enable you to become a better pilot. I hope that this introduction to aerospace engineering might stimulate a life long interest in flight performance.

If you are hoping to become an administrator in the aviation sector, I would like you to think about the role you may play in aircraft safety. I hope that this introduction to aerospace engineering will enable you will glimpse the power of mathematical analysis to describe the behaviour of aircraft, and I hope this remains with you for life. I hope that you really appreciate that what you have is only a glimpse and not the full story. That is the domain of aerospace engineers.

Student learning outcomes

Students will be able to:

- offer a reasonable description of how a wing develops lift and explain why this lift force is associated with various components of drag. Students will be able to extend thee ideas to propellers,

- write mathematical expressions for lift and drag and extend these equations so as to

5.

Week Monday	Wednesday All lectures delivered on-line.	Thursday All lectures delivered on-line.
1 1/6/20	Introduction to flight physics, lift and drag, straight and level flight.	Mechanics (forces)

Assignments

AERO component

All assessment materials can be found on Moodle. Assignment 1 will uploaded to Moodle in Week One, while Assignment 2 will uploaded to Moodle in Week Seven. The length of the assignment solutions will depend on you, but you need to show all working.

You will be assessed by a final examination as well as your continuous participation in completing two assignments. They will involve calculations. The assessments are based to allow you to obtain an understanding of the material being taught and will allow you to apply the concepts learnt in the course. In order to achieve a PASS (PS) in this course, you need to achieve a total mark of at least 50%.

Presentation

All submissions are expected to be neat and clearly set out. Your results are the pinnacle of all your hard work and should be treated with due respect. Presenting results clearly gives the marker the best chance of understanding your method; even if the numerical results are incorrect.

Submission

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of 20 percent (20%) 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.

Work submitted after the ‘deadline for absolute fail’ is not 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 are clearly indicated in the course outline, and such assessments receive a mark of zero if not completed by the specified date. Examples include:

marked according to the marking guidelines provided.

Examinations

You must be available for all quizzes, tests and examinations.

Final examinations for each course are held during the University examination periods: February for Summer Term, May for T1, August for T2, and November/December for T3.

Please visit myUNSW for Provisional Examination timetable publish dates.

For further information on exams, please see the Exams webpage.

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 submitting an assessment or sitting an exam.

Please note that UNSW now has a Fit to Sit / Submit ng

N. Cumpsty & A. Heyes, 2015, *Jet Propulsion. A simple guide to the aerodynamic and thermodynamic design and performance of jet engines*, 3rd edition, Cambridge University Press.

UNSW Library website: https://www.library.unsw.edu.au/

Additional materials provided in Moodle

This course has a website on UNSW Moodle which includes:

- course notes
- assignments
- consultation notes

Moodle: https://moodle.telt.unsw.edu.au/login/index.php

resources, attend the Learning Centre, or sometimes resubmit your work with the problem fixed. However more serious instances in first year, such as stealing another student's work or paying someone to do your work, may be investigated under the Student Misconduct Procedures.

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) even suspension from the university. The Student Misconduct Procedures are available here:
www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

10. Administrative matters and links

All students are expected to read and be familiar with UNSW guidelines and polices. 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

- *Dr John Olsen*
- *19th April, 2020*