Course Outline

Semester 1 2016

Never Stand Still

Engineering | Mechanical and Manufacturing Engineering

AERO4620

Dynamics of Aerospace Vehicles and Systems

1. Staff Contact Details

Contact details and consultation times for course convenor

Dr Zoran Vulovic (course convener)
Room 311

3. Teaching strategies

Lectures in the course are designed to provide the basic theory behind the concepts taught. For most classes PowerPoint slides will be available on-line and beforehand. Students are encouraged to ask questions during the classes.

It is very important for fourth year student to be able to use multiple sources. For that reason there is no single textbook to support this course. Instead, only recommended texts are provided and you will be expected to find other relevant books and make use of them. You are welcome to consult your lecturer on this.

4. Course schedule

Date	Topic	Location	Lecture Content	Demonstration/Lab Content	Suggested Readings
Week 1	Control systems. Hydraulic systems and components.	Ainswth202	Aerodynamic controls, cockpit controls and transmission media. Hydraulic components.	N/A	Class readings
Week 2	Pneumatic systems and components. Fuel systems and components.	Ainswth202	Pneumatic components and comparison with hydraulic counterparts.	N/A	Class readings
Week 3	Cabin environment control	Ainswth202	Cabin pressurisation and cabin temperature control	N/A	Class readings
Week 4	Electrical systems and components. Test.	Ainswth202	DC and AC systems and components	N/A	

6	sensors. Elevator effectiveness. Static margin.		of different aircraft sensors. Analysis of static stability parameters.		readings
Week 7	Navigation systems. Stick-free-case. Handling and flying qualities.	Ainswth202	Dead reckoning and position fixing navigation. Relevance of handling and flying qualities.	N/A	Class readings
Week 8	Automatic flight control. Test.	Ainswth202	Stability augmentation and fly-by-wire.	N/A	Class readings
Week 9	Autopilots. Mathematical model of longitudinal dynamic.	Ainswth202	Classification of autopilots and their modes. 3-DOF linear longitudinal model.	N/A	Class readings
Week 10	Laboratory				

Week 11	Cockpit electronics. Mathematical model of lateral dynamics.	Ainswth202	Displays and communication systems. 3-DOF linear lateral model.	N/A

Final exam	3 hours	46%	1, 2 and 3	All course content from Weeks 4-12 inclusive (Modules B and C).

Special Consideration and Supplementary Assessment

For details of applying for special consideration and conditions for the award of supplementary assessment, see the School intranet, and the information on UNSW's Special Consideration page.

6. Expected Resources for Students

There is no text book for the course. PowerPoint slides will be available on Moodle for Modules A and B lectures but students are expected to use various sources.

Recommended texts:

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: 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.

If plagiarism is found in your work when you are in first year, your lecturer will offer you assistance to improve your academic skills. They may ask you to look at some online 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

Further information on School policy and procedures in the event of plagiarism is available on the intranet.

9. Administrative Matters

All students are expected to read and be familiar with School guidelines and polices, available on the intranet. In particular, students should be familiar with the following:

- Attendance, Participation and Class Etiquette
- UNSW Email Address
- Computing Facilities
- Assessment Matters (including guidelines for assignments, exams and special consideration)
- Academic Honesty and Plagiarism
- Student Equity and Disabilities Unit
- Health and Safety
- Student Support Services

Zoran Vulovic
18 January 2016