

t.FVSY - Flight Vehicle Systems

Person responsible for the course:	Leonardo Manfredi, mani
Credits:	3
Valid for:	2011/2012
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Learning objectives:

The objectives of the three courses FVSY, FPSY and AVSY are the following:

- the students are able to identify the various components and subsystems of the system "aircraft";
 - they understand and can explain their design principles, function and interaction;
 - at the same time, interested students also receive basic knowledge for the ATP theoretical examinations "Aircraft General Knowledge" and "Principles of flight" according to JAR-FCL 1.470.
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Course content:

The subject "Aircraft System" is treated in three complementary courses:

Flight Vehicle Systems (FVSY) introduces the aircraft general design and structure, mechanical systems and electrical systems.

Flight Propulsion Systems (FPSY) deals with piston engines, propellers, gas turbine engines and ancillary systems.

Finally, Avionic Systems (AVSY) concerns instrumentation, avionics and onboard software.

The structure and systems of a modern aircraft are explained on the basis of practical examples. Particular attention is given to basic technical principles, design and the interaction between the various components and systems of an aircraft.

The three courses provide a basic understanding of design methods, technologies, performance and certification requirements and maintenance concepts. It will be shown how every aircraft is the result of compromises between efficiency, safety, comfort, economy and environmental impact.

The following JAR-FCL 1.470 topics are integrated in the FVSY course:

021 00 AIRCRAFT GENERAL KNOWLEDGE
021 01 System design, loads, stresses, maintenance
021 01 Airframe and systems
080 00 PRINCIPLES OF FLIGHT
081 06 Limitations

Previous knowledge:

This course is open to all students who have passed the first year assessment. For external auditors, a basic knowledge of physics (high school level) is necessary to understand the contents.

Since the lectures and the course notes are in English, good comprehension skills of this language are required.

Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	14*2
Tutorial/Practicum	7*2
Group teaching	
Block instruction	
Seminar	

Assessment:

According to the table or as specified in writing by the lecture at the beginning of the semester!

Number	Type	Weighting
1	End of term exam	100%
4	Class exercises	
	Further assessments	

Language of instruction:

English

Instruction material:

Slides and script.

Recommended book:

- Moir and Seabridge, Aircraft Systems - Mechanical, Electrical and Avionics Subsystem Integration, AIAA Education Series

Additional literature:

- Darrol Stinton, The Anatomy of the Airplane, AIAA Library of Flight Series
- Moir and Seabridge, Design and Development of Aircraft Systems, AIAA Education Series
- Klaus Engmann, Technologie des Flugzeuges, Leuchtturm-Verlag
- Airframes & Systems, Nordian ATS
- Electrics, Nordian ATS

The titles from the NORDIAN Aviation Training System series are recommended for those students who intend to take the ATP theoretical knowledge examinations.

Comments:

The course is obligatory for candidates to the ATP licence. Attendance to the course will correspondingly be checked.