

t.AVSY - Avionic Systems

Person responsible for the course:	Leonardo Manfredini, 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 following JAR-FCL 1.470 topics are integrated in the FPSY course:

022 00 AIRCRAFT GENERAL KNOWLEDGE - INSTRUMENTATION

- 022 01 Sensors and instruments
- 022 02 Measurements of air data parameters
- 022 03 Magnetism - Direct reading compass and flux valve
- 022 04 Gyroscopic instruments
- 022 05 Inertial navigation and reference systems
- 022 06 Automatic flight control systems
- 022 08 Trims - Yaw damper - Flight envelope protection
- 022 09 Autothrottle - Automatic thrust control system
- 022 10 Communication systems
- 022 11 Flight Management System (F.M.S.)
- 022 12 Alerting systems, proximity systems
- 022 13 Integrated instruments - Electronic displays
- 022 14 Maintenance, monitoring and recording systems
- 022 15 Digital circuits and computers

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 most 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	
Tutorial/Practicum	
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 / German

Instruction material:

Slides and script.

Recommended book:

- Moir and Seabridge, Civil Avionics Systems, AIAA Education Series

Additional literature:

- Moir and Seabridge, Design and Development of Aircraft Systems, AIAA Education Series

- Instrumentation, 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.