

Brno University of Technology





IAE experience with student mobility exchanges

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Motivation: topic for discussion

How many students are at IAE during a year?

- each year graduated about 40 students
- this year visited IAE 19 students from abroad

<u>Contens</u>

- IAE + education plan
- ERASMUS motilities
- > Double degree with ENSAM





Educational activities

Bachelor graduate studies (Bc.)

- Airline transport pilot school (CAA Czech Republic approval)
- Master graduate studies (Ing.)
 - Aircraft design
 - Air Transport
- Post graduate studies (Ph.D.)

Scientific and research activities

- Aerodynamic analyses
- Stress analyses
- Design and computer modeling of aircraft and aircraft structures
- **Reliability and Maintenance**
- Static and dynamic testing of aircraft structures (CAA Czech Republic approval)



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Bologna agreement





Aircraft Design (MSc)

Description: Graduates in Aircraft Design specialization obtain knowledge of Aerodynamics and Mechanics of Flight, theory of Strength of Aircraft Structure and Aircraft Design. They will be made familiar with structure materials and their processing, and design of weight-saving structure. They will acquire principles of aircraft design from the point of view of technology of production and operating. They will familiarize themselves with basics of theory of aircraft reliability and aircraft structure life.



1. year

Winter semester

Aerodynamics I **Aircraft Propulsion** Aircraft Materials Aircraft Structure I Computer Aided Design and Manufacturing Principles of Space Flight Summer semester

Aerodynamics II Aircraft Design I Aircraft Structure II Flight Mechanics I Semester Project Aircraft Manufacture I Aircraft Composite Structures **English** in Aviation Aeroplane Propellers Helicopters Industrial Project (2325)

2. year

Winter semester

Aeroelaticity Aircraft Design II Flight Mechanics II Aircraft On-Board Systems I Reliability and Maintainability of Aircraft Aircraft Manufacture II **In-Flight Experiments** Aeroacoustics Aircraft Testing **English** in Aviation Summer semester

Diploma Seminar (M2325) Aircraft Design III **Aviation Law and Regulations** Aircraft On-Board Systems II Fatigue of Aircraft Structures Diploma Project (M2325)



Air Transport (MSc)

Description: Graduates in Airport Transport specialization obtain knowledge both technical disciplines (principles of aircraft structure, aircraft reliability, use of aircraft onboard system, maintenance and repair security) and also operation and economic disciplines (air transport, security and transport service of an aircraft company).





1. year

Winter semester

Aircraft Propulsion Aeronautical Meteorology Aircraft Design Management and Marketing Aerodynamics and Flight Mechanics Principles of Space Flight

Summer semester

Commercial Transport Air Traffic Economics and Management Air Navigation Operation and Economy of Air Transport I Communication, Navigation, Surveillance English in Aviation Aeroplane Propellers Helicopters Industrial Project (2325)

2. year *Winter semester*

Airport I Aircraft Maintenance Aircraft On-Board Systems I Operation and Economy of Air Transport II Air Traffic Management Reliability and Maintainability of Aircraft Semester Work In-Flight Experiments Aeroacoustics Selected Chapters English in Aviation

Summer semester

Airport II Aviation Law and Regulations Aircraft On-Board Systems II Diploma Seminar (M2325-03) Fatigue of Aircraft Structures Diploma Project (M2325-03)





Erasmus-Sokrates mobility

student mobility - 1 or 2 semesters
teacher mobility - 1 week

Student motivation

- •international experience
- •other knowledge (exams)
- language training
- vacation





First international contacts





Present international contacts





Number of students exchanges at 2008/2009 year

Partner Univ.	Incoming	Study abroad
University of Glasgow (GB)		1
UWE (Bristol, GB)		
TU Braunschweig (D)		2
TP Tampere (F)	2+2	
ENSAM (Cluny, F)	5+5	
ENSAM (Bordeau, F)		
KHBO (Oostende, B)	-	2
UTAD (Alto Douro, Portugal)	2	
VGTU (Vilnius, Lithuania)		
UPC Barcelona (Sp)	3	





Chosen lectures for 2008/2009 year

Lectures	Semester	No. of students
Aerodynamics I	W	0
Computer Aided Design and Manufacturing	S	б
Aircraft Composite Structure	S	6
Aircraft Design	W / S	9 / 7
Flight Mechanics I	S	11
Semester Project	S	4
Aircraft Manufacture I	S	10
Aircraft testing	S	4
Maintenance and Repair of Aircraft	S	3
Communication, Navigation, Surveillance	S	5
Aerodromes	S	3







ARTS ET MÉTIERS ParisTech (Ecele Nationale Superieure D`ates et Métiers - ENSAM)

- •Centre de Paris
- •Centre de Cluny
- •Centre de Lille
- •Centre de Chalons en Champangne
- •Centre de Metz
- •Centre de Angers
- •Centre de Aix en Provence
- •Centre de Bordeaux-Talence

http:/ensam.fme.vutbr.cz





Steering committee meeting

- validation of pass year
- presentation of new progress





Study plan for DD

Strojírenská technologie – Industrial Engineering"

code	Lecture name	Credits	Lang.	Semestre
HTO-A	Theory of machining	5	А	W
OT1- A	Aircraft manufacture I	4	А	W
OA1-A	Aerodynamics I	5	А	W
FRM-A	Robots and Manipulators	4	А	W
HSP-A	Semester project	5	А	W
HNC-A	CNC Machining	7	А	W
	Total	30		
GVO-A	Manufacturing machines technology	4	А	S
OSZ-A	Aircraft design I	6	А	S
GMV-A	Modelling and Simulation of Production	4	А	S
HC2-A	Application of CAD/CAM in Machining Technology II	5	А	S
OMZ- A	Flight Mechanics I	5	А	S
1CJ	Czech Language	2	А	S
OSP-1	Semester Project	4	А	S
	Total	30		

Study plan for DD

Strojírenská technologie – Industrial Engineering"

Code	Lection name	Credits	Lang.	Semester
IA	Placement as an engineer-assistant	5	А	Z
0D31	Management of the logistics chain Computer-aided decision making and optimization Logistics: control of the flows	3.5	A	Z
7D31	Strategical management	4.5	А	Z
0E310	Expertise Course (27 courses distributed among ENSAM Centres – see below for details) or Master of Research's courses	11	A	Z
0P310 0P320	Expertise Project or Master of Research's thesis	4 30	A	Z, L
7L31x	Foreign language: international dimensions of engineering	2	А	Z
	total	60		

State exam

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4.44

Thank you for your attention.

