

Degree programmes

The department offers three degree programmes at present:

- Automotive Engineering (Bachelor of Engineering)
- Aeronautical Engineering (Bachelor of Engineering)
- Lightweight Aeronautical and Vehicle Structures (Master of Engineering, in English)

Master programmes in Automotive Engineering and Aeronautical Engineering are planned for March 2009.

Aeronautical Engineering (BEng)

The Bachelor programme is made up of seven semesters – six semesters of theory and the final semester in industry, including the completion of a Bachelor thesis. In each semester there are courses equivalent to a total of 30 credits.

The first three semesters focuses on laying the foundations in maths, physics, engineering mechanics, design principles and descriptive geometry:

Foundation Studies

Area of Study	Course	Hours per week	Credits
Semester 1			
Mathematics	Mathematics 1	8	9
Mechanics 1	Statics	6	7
Material Science	Material Science	2	2
Design 1	Free hand drawing	2	3
	Technical Drawing & Intro. to CAD	4	6
	Descriptive Geometry 1	2	3
Semester 2			
Mathematics	Mathematics 2	6	7
Mechanics 1	Strength of Materials	6	8
Physics 1	Electrical Engineering/Measuring Technology/Electronics with Lab.	6	8
Material Science	Material Science	4	4
Design 1	Descriptive Geometry 1	2	3
Semester 3			
Mechanics 2	Dynamics	6	7
Physics 2	Thermodynamics	6	7
	Fluid Mechanics	2	2
Design 1	Descriptive Geometry 2	4	6
	Machine Parts	8	8

In semesters four to six students can choose between two study majors:

Study Major: Design and Lightweight Structures

This study major looks at aircraft design, focusing particularly on the special requirements of design, calculation and the materials used in the manufacture of lightweight structures.

Area of Study	Course	Hours per week	Credits
Semester 4			
Computer Science	Computer Science	4	4
Design 2	Machine Parts Design		5
Aerodynamics	Aerodynamics with Lab.	8	8
Structure Analysis	Strength of Lightweight Structures	4	5
	Finite Elements	4	4
Measurement Engineering	Measurement Engineering with Lab.	4	4
Semester 5			
Structural Design	Structural Design	7	8
	CAD in Aeronautical Engineering	1	2
	Lightweight Structures Lab.	2	2
Flight Mechanics	Flight Mechanics with Lab.	6	8
Aircraft Manufacturing	Aircraft Manufacturing	4	4
Seminar	Seminar	2	2
	Planning & Presentation	2	2
Business	Introduction to Economics	2	2
Semester 6			
Aircraft Propulsion	Aircraft Propulsion	4	4
Aircraft Design	Aircraft Design	4	4
Composite Materials	Composite Materials	4	4
Excursion	Excursion or field trip		2
Business	Introduction to Business	4	4
	Human Resource Management	2	2
Value Engineering	Value Engineering	2	2
Project	Project		8
Semester 7			
Industry	Industrial Placement		20
	Bachelor Thesis		10

Master's programme

This study major can be continued in a Master's programme that will be introduced in March 2009. It will contain the following modules:

Area of Study	Course	Hours per week	Credits
Semester 8 and 9			
Aeronautical Engineering	Vibration Analysis, Optimisation, Computational Fluid Dynamics	12	18
Design and Lightweight Structures	Fatigue, Aeroelasticity, Gasdynamics, Advanced Flight Mechanics, Advanced Aircraft Propulsion	20	30
Business and Management	Systems Engineering, cost calculation and controlling	8	12
Semester 10			
	Master-Thesis		30

Study Major: Cabin and Cabin Systems.

This study major looks at cabin systems, systems design and systems integration and the ergonomics and specifications of cabin design. AIRBUS Germany supports this study major by financing a Chair in Cabins and Cabin Systems in the department.

Area of Study	Course	Hours per week	Credits
Semester 4			
Computer Science	Computer Science	4	4
Design 2	Machine Parts Design		5
Aircraft project	Aircraft project	8	8
Structure Analysis	Strength of Lightweight Structures	4	5
	Finite Elements	4	4
Cabin Architecture	Cabin Architecture	4	4
Semester 5			
Composite Materials	Composite Materials & Sandwich Technology	7	8
	Lightweight Structure Lab Cabin	1	2
Cabin Systems	Cabin Systems	2	2
Cabin Modules	Cabin Modules & Monuments with CAD	6	8
Cabin Manufacturing	Cabin Manufacturing	4	4
Seminar	Seminar	2	2
	Planning & Presentation	2	2
Business	Introduction to Economics	2	2
Semester 6			
Ergonomics & Design	Ergonomics & Design	4	4
Systems	Aircraft System Design	4	4
	Aircraft System Integration	4	4
Excursion	Excursion or field trip		2
Business	Introduction to Business	4	4
	Human Resource Management	2	2
Value Engineering	Value Engineering	2	2
Project	Project		8
Semester 7			
Industry	Industrial Placement		20
	Bachelor Thesis		10

Master's programme

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Area of Study	Course	Hours per week	Credits
Semester 8 and 9			
Aeronautical Engineering	Vibration Analysis, Optimisation, Computational Fluid Dynamics	12	18
Cabin and Cabin Systems	Advanced Mechanical Systems, Advanced Electronical Systems	20	30
Business and Management	Systems Engineering, Cost Calculation and Controlling	8	12
Semester 10			
	Master-Thesis		30