



AIRCRAFT DESIGN

26 – 30 May 2008

LOGOS



HOMEPAGE

<http://www.flugzeugentwurf.de>

AIM

The module gives an insight into the procedures and the multidisciplinary interactions of aircraft conceptual design. The process of iterative synthesis and analysis in aircraft design is illustrated. A software tool for preliminary sizing is demonstrated. Methods and data to enable case studies of subsonic aircraft design are provided.

TARGET DELEGATES

The module is intended for graduated engineers, equivalent professionals and/or managers. It is likewise suitable for specialists in search of a broader perspective as for newcomers to the field.

LEARNING OUTCOMES

On completion of the module, delegates will

- know aircraft design parameters and methods.
- know the fundamental relationship of aircraft design parameters.
- be able to size and design an aircraft to the detail as covered during the module.
- have a capability to structure aircraft design activities systematically and efficiently.

LEARNING ENVIROMENT

The module includes lectures, a tutorial, a multi media presentation, a team assignment, case studies, a company visit and an evening lecture. Speakers are senior experts from industry and academia. A comprehensive set of course notes is provided.

PRE-MODULE STUDY

Delegates are expected to read pre-course material and to consult reference literature.

MODULE CONTENT

Introduction, development process, requirements, certification standards, aircraft configurations, preliminary sizing, fuselage and cabin conceptual design, wing design, empennage design, prediction of mass and CG-location, landing gear design and integration, drag prediction, design evaluation / DOC, special aspects of military aircraft design.



European Postgraduate Master in Aeronautical Engineering

POST-MODULE ASSIGNMENT	Delegates will be offered an assignment that has to be completed after the short course. The assignment typically consists of an aircraft conceptual design study. Successful completion of this task is compulsory for those delegates who are students on the European Postgraduate Master in Aeronautical Engineering (EPMA).
VENUE	Hamburg University of Applied Sciences and Airbus Deutschland GmbH.
MODULE LEADER	Prof. Dr.-Ing. Dieter Scholz, MSME, Department of Automotive and Aeronautical Engineering, Faculty of Engineering and Computer Science, Hamburg University of Applied Sciences, Berliner Tor 9, D-20099 Hamburg, Phone: +49-40-70971646, E-Mail: info@ProfScholz.de , http://www.ProfScholz.de .
LECTURER	Dipl.-Ing. Ole Böttger (Airbus), Dipl.-Ing. Hanspeter Gfell (Fairchild Dornier; retired), Dipl.-Ing. Hannes G. Ross (EADS; retired), Dipl.-Ing. Bernd Trahmer (Airbus)
MODULE PROGRAMME	See last page.
HAW	With over 12000 students Hamburg University of Applied Sciences (Hochschule für Angewandte Wissenschaften Hamburg, HAW) is the second largest institute of higher education in the Hamburg region and one of the largest of its kind (University of Applied Sciences) in Germany. Founded in 1970, HAW's roots go back to the 18 th century. Its practice based teaching developed with industry, guarantees that participants can readily apply their knowledge. HAW aeronautical engineering graduates are well recognized and successfully engaged in all areas of aviation, nationally and internationally. The university has established a research focal point in aeronautical engineering. All research is done in close cooperation with industry. http://www.haw-hamburg.de .
AERO	Aero is the "Aircraft Design and Systems Group" at HAW Hamburg. Aero's aim is to guide research assistants to cooperative dissertations and to conduct funded projects in research, development and teaching (short courses). Aero is organising the "Aircraft Design" short course. http://Aero.ProfScholz.de .
EPMA	European Postgraduate Master in Aeronautical Engineering (EPMA) is a new joint master programme for part time students. EPMA awards a joint/double master degree. Partners in the programme are: Hochschule für Angewandte Wissenschaften Hamburg (HAW), Katholieke Hogeschool Brugge - Oostende (KHBO), Université Bordeaux 1 (UB1) and further associated European universities. If you are interested to pursue a Master Degree, please consult: http://www.EPMA.aero



COST

Module fee: 1200 €(final price, no VAT) includes course notes and the programme as outlined on the last page with coffee, juice and biscuits/cookies and a dinner on HAW campus (transport, accommodation and further meals are not included). Registrants who cancel before 16 May 2008 will receive 25% refund, no refunds given for cancellation after 16 May 2008, but substitution of a registrant is accepted at any time.

Special rates are available for students – please ask!

APPLICATION

Please apply before 25 April 2008.

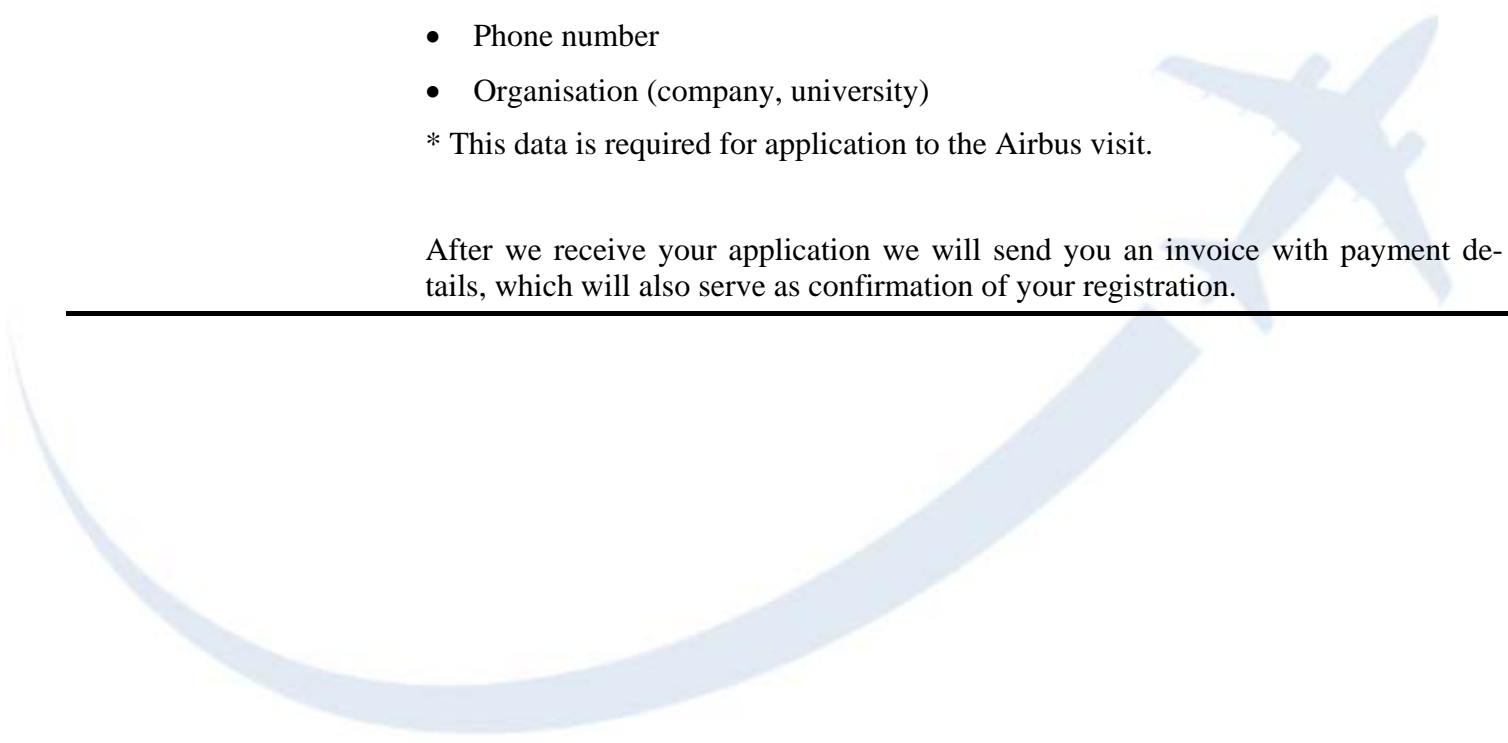
Please send all enquiries and your application to Prof. Dr. Scholz via e-mail (info@ProfScholz.de).

In your application please state:

- Name (first, middle, last)
- Address (street, number, ZIP code, city, state, country)
- Date of birth *
- Place of birth *
- Nationality *
- E-Mail
- Phone number
- Organisation (company, university)

* This data is required for application to the Airbus visit.

After we receive your application we will send you an invoice with payment details, which will also serve as confirmation of your registration.





LECTURER'S BACKGROUND

Prof. Dr.-Ing. Dieter Scholz, MSME

Professor at Hamburg University of Applied Sciences. Teaching and research in the area of Aircraft Design, Flight Mechanics, Aircraft Systems.

Dipl.-Ing. Ole Böttger

Future projects engineer at Airbus Deutschland since 1994. Overall design and follow up on A3XX. A380 competition studies in international project groups. Sketching, sizing, weight, drag and performance estimation. Discussion with component teams. Competition analysis with major focus on Boeing sonic cruiser and 787. Overall design A350 in international project group.

Dipl.-Ing. Hanspeter Gfell

Team leader Future Projects / New Technologies at Dornier/Fairchild Dornier (today retired). VTOL aircraft: Do 131, Do231, Light Attack Aircraft Do P375, A. Lippisch-Aerodyne. Airliner studies within: "Cooperative Airliner Study", "Group of Six", "Regioliner Team", Do 128 Turbo Conversion, Do 228-100/200/212, Do 228 Polar. Amphibious Aircraft: Do 24 Advanced Technology Testbed, Do 24 successor designs, "Fire Fighter" and other special versions. Dornier 328. Fairchild/Dornier 728 JET Family, CRYOPLANE EC-Study.

Dipl.-Ing. Hannes G. Ross

Project Engineer at VFW, MBB, EADS, today: IBR, Aeronautical Consulting. Projects: US-FRG VSTOL Tactical Fighter Study. F-111 Crew Escape Module, F-15 Concept and Definition Phase. Pannap, TKF. Preliminary Design of Eurofighter. Programme Leader X-31 for MBB/Dasa/EADS. Lecturer at Technical University Munich: Design Requirements for Military Aeronautical Engineering.

Dipl.-Ing. Bernd Trahmer

Future projects engineer at Airbus Deutschland since 1991. Overall design and follow up on A3XX / VLCT (Airbus & Boeing). A380 competition studies in international project groups. Sketching, sizing, weight, drag and performance estimation. Discussion with component teams. Team leader of trans-national group "Future Project Concepts".

Short Course: Aircraft Design					
Day:	Monday, 26.05.2008	Tuesday, 27.05.2008	Wednesday, 28.05.2008	Thursday, 29.05.2008	Friday, 30.05.2008
Location:	HAW	Airbus	HAW	HAW	HAW
08:30 - 10:00	SCHOLZ: <ul style="list-style-type: none"> Welcome Assignment / Teamwork Introduction Aircraft Design Sequence Requirements and Certification 	TRAHMER: Fuselage and Cabin Conceptual Design	SCHOLZ: <u>Multi-Media</u> "From Requirements to Configuration"	SCHOLZ: Empennage Sizing	ROSS: Military Aircraft Development: <ul style="list-style-type: none"> Development Scenario and Environment Requirements Design Process and Tools Technologies <ul style="list-style-type: none"> Composites Ejection Systems Unstable Configurations Thrust Vectoring
10:15 - 11:45	SCHOLZ: <ul style="list-style-type: none"> Aircraft Configurations 		SCHOLZ: High Lift	BÖTTGER: Drag Prediction	
12:00 - 12:45	SCHOLZ: Preliminary Sizing (I)	BÖTTGER: Wing Design	SCHOLZ: Empennage General Design	SCHOLZ: Design Evaluation / DOC	
12:45 - 13:45	Lunch (and Library)	Lunch	Lunch (and Library)	Lunch (and Library)	Lunch (and Library)
13:45 - 15:15	SCHOLZ: Preliminary Sizing (II)	BÖTTGER: Wing Design	TRAHMER: Prediction of Mass and CG-Location	GFELL: <u>Case Study</u> Integration of Propellers and Engines – The Dornier 328 and other Regional Turboprops	<ul style="list-style-type: none"> Aircraft Signature Unmanned Systems Future Aspects
15:30 - 17:00	SCHOLZ: <u>Tutorial</u> Preliminary Sizing	Airbus -Visit	TRAHMER: Landing Gear Conceptual Design and Integration	GFELL: <u>Case Study</u> The Fairchild Dornier 728 Programme	SCHOLZ: <ul style="list-style-type: none"> Team-Presentations
17:00 - 18:00	Dinner in Blankenese		Dinner on HAW Campus		<ul style="list-style-type: none"> Test Feedback
18:00 - 19:00				Teamwork Preliminary Sizing	

Location of the Short Course:

HAW: Berliner Tor 5, D-20099 Hamburg (Room 04.12)

Airbus: Nesspriel 5, D-21129 Hamburg (Room 3015)

Coffee, juice and biscuits/cookies are served during the breaks. The dinner on HAW campus is included in the short course fees.

The dinner in Blankenese and lunches (HAW refectory) have to be paid individually by each participant.