
AIRCRAFT DESIGN

11 – 15 June 2007

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 ENVIRONMENT

The module includes lectures, a tutorial, a multi media presentation, case studies 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, engine integration, preliminary sizing, fuselage 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.

POST-MODULE

Delegates will be offered an assignment. The assignment typically consists of an aircraft conceptual design study. Successful completion of the task is compulsory

ASSIGNMENT	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: scholz@fzt.haw-hamburg.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 18th 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>.

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>

TuTech TuTech Innovation GmbH is a company owned jointly by Hamburg University of Technology (TUHH) and the Free and Hanseatic City of Hamburg whose mission is to promote effective transfer and exploitation of scientific and technical knowledge. TuTech manages contract research and technical exploitation projects, provides assistance for young technology orientated start-ups as well as other forms of knowledge transfer such as organisation of conferences, workshops and networking events. <http://www.TuTech.de>

WINQ WINQ e.V. is the continuous education branch of the Hamburg University of Applied Sciences. Since 1995 WINQ offers high-value seminars and courses at low prices. The programme includes short courses as well as and long term development for professionals. <http://www.WINQ.de>

COST

Module fee: 1200 € (+ 19% VAT) inclusive course notes, coffee breaks, lunches, snacks and dinner at HAW (transport, accommodation and further meals are not included). The module may be cancelled if a minimum number of registrants is not reached; all fees will be refunded. Registrants who cancel before 11 May 2007 will receive 25% refund, no refunds given for cancellation after 11 May 2007, but substitution of a registrant is accepted at any time.

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

**Application
&
Enquiry Form**

Name.....
Function.....
Organization.....
Address.....
.....
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Phone..... Fax.....
e-Mail.....

Please forward this slip by 04 Mai 2007 to TuTech - Gerlinde Löbkens, Harburger Schloßstr. 6-12, 21079 Germany, Tel.: +49-40-76629-6551, Fax: +49-40-76629-6559, E-Mail: loebkens@tutech.de, <http://www.tutech.de/veranstaltungen>

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, 11.06.2007	Tuesday, 12.06.2007	Wednesday, 13.06.2007	Thursday, 14.06.2007	Friday, 15.06.2007
Location:	Airbus	Airbus	HAW	HAW	HAW
08:30 - 10:00	SCHOLZ: <ul style="list-style-type: none"> Welcome Introduction Development Process GFELL: <u>Case Study:</u> Development Process at Fairchild Dornier	SCHOLZ: Preliminary Sizing (II)	BÖTTGER: Wing Design	SCHOLZ: Empennage Design (II)	ROSS: Military Aircraft Development: <ul style="list-style-type: none"> Scenario/Environment Requirements Process and Tools Highly Manoeuvrable Aircraft Aircraft Performance Technologies <ul style="list-style-type: none"> Avionics Unstable Aircraft Thrust Vectoring Signature Reduction
10:15 - 11:45	SCHOLZ: <ul style="list-style-type: none"> Requirements Certification Standards 	SCHOLZ: <u>Tutorial</u> Preliminary Sizing		TRAHMER: Landing Gear Design and Integration	
12:00 - 12:45	SCHOLZ: <ul style="list-style-type: none"> Aircraft Configurations Integration of Jet Engines 	SCHOLZ: <u>Multi-Media</u> "From Requirements to Configuration"	SCHOLZ: Wing Design (High Lift)	SCHOLZ: Drag Prediction	
12:45 - 13:45	Lunch	Lunch	Lunch (and Library)	Lunch (and Library)	
13:45 - 15:15	GFELL: <u>Case Study</u> Integration of Propellers and Engines – The Dornier 328 and other Regional Turboprops	TRAHMER: Fuselage Design	SCHOLZ: Empennage Design (I)	SCHOLZ: Design Evaluation / DOC	<ul style="list-style-type: none"> Configuration Evolution Unmanned Systems Future Aspects
15:30 - 17:00	SCHOLZ: Preliminary Sizing (I)		TRAHMER: Prediction of Mass and CG-Location	GFELL: <u>Case Study</u> The Fairchild Dornier 728 Programme	SCHOLZ: <ul style="list-style-type: none"> Test Assignment Feedback
17:00 - 17:30	Dinner in Blankenese	Airbus -Visit	Dinner on HAW Campus	Snack	
17:30 - 19:00			DGLR-Lecture ROSS: Solarangetriebene Flugzeuge		

Location of the Short Course:

HAW: Berliner Tor 5, D-20099 Hamburg

Airbus: Nesspriel 5, D-21129 Hamburg

Coffee, tea, juice and biscuits are served during the breaks.