Aircraft Conceptual Design

Programme course

6 credits

Flygplansprojektering

TMAL51

Valid from: 2017 Spring semester

Determined by
Board of Studies for Mechanical Engineering and Design

Date determined
2017-01-25

Main field of study
Aeronautical Engineering, Mechanical Engineering

Course level
Second cycle

Advancement level
A1X

Course offered for
- Mechanical Engineering, M Sc in Engineering
- Mechanical Engineering, Master's programme

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Aircraft and Vehicle Design, Aerodynamics, Flight Mechanics

Intended learning outcomes
To allow students to bring together their previous studies in aeronautics to a practical aircraft design project and in so doing develop the understanding of the disciplines and interrelationships in aircraft design.

Course content
This course will utilise the skills learnt in previous aeronautical courses to undertake the conceptual design of an aircraft. Scope of the course:

- The design process
- Aircraft configurations, conventional as well as unconventional
- Safety and safety requirements
- How to do fuselage-, wing- and stabiliser layouts
- Weight and balance
- Powerplant and installation
- Landing gear design and installation
- Introducing the design program, how it´s built up and functions

Teaching and working methods
Instruction is carried out in the form of lectures, classes and a major project, made by the help of an in-house produced design program

Examination

UPG1	Project	6 credits	U, 3, 4, 5

Grades
Four-grade scale, LiU, U, 3, 4, 5

Other information
Supplementary courses: Aircraft Design Project

Department
Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent
Peter Hallberg

Examiner
Patrick Berry

Course website and other links

Education components
Preliminary scheduled hours: 48 h
Recommended self-study hours: 112 h

Course literature
Jenkinson, Simpkin, Rhodes: Civil Jet Aircraft Design

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.