Supplementary Course (EVA) in the MSE programme

Title: Aircraft Structural Integrity

Short Code: rEVA_AcStruct

Credits	3
Profile	Aviation (Avi), Mechanical Engineering (ME), Energy and Environment (EnEn)
Responsible Institute /Centre	Centre for Aviation (ZAV)
Responsible lecturer and contact informtion	Michel Guilllaume, guil@zhaw.ch and Markus Gottier (Senior Expert)
Type and duration of examinations	Oral presentation of Case Study
Start date and duration	Semester: Autumn Detail: 8 blocks à 2.5 hours incl. Final presentation
Location	Winterthur
Course type	In pysical presence and self study
Language of instruction	German
Short description (max. 300 characters)	The coal of this supplementary course is to provide practical in depth information of static and fatigue verification procedures including practical case studies. Examples will help to get familiar with the Crack Growth Code AFGROW (standard in Aerospace Industry).
Contents and Learning Objectives	The following questions will be discussed in the course to get more indepth understanding of fatigue in aircraft metal structures: - What is the meaning of fatigue in metallic structures - Which parts of metallic structures are fatigue critical - Which parameters are drivers for fatigue - Which procedures are available to determine fatigue live - Which measurements are necessary to avoid fatigue problems in metallic structures Real case studies will be discussed (e.g. integration of antenna in pressuriezed fuselage of aircraft).
Prerequisites	Aircraft Structures and Testing, Mechanical Enginering
Literature	Fatigue of Structures and Materials, Jaap Schijve, ISBN: 978-1-4020-6808-9, 22 Dec. 2008 Stress Concentration Factors, Peterson Second Edition, ISBN: 0-471-53849-3, 1997

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Special requirements	none			
Offer for profiles	Aviation (Avi)	☒	Business Engineering (BE)	☐
	Computer Science (CS)	☐	Data Science (DS)	☐
	Electrical Engineering (EIE)	☐	Energy & Environment (EnEn)	☒
	Mechanical Engineering (ME)	☒	Mechatronics & Automation (MA	☐
	Medical Engineering (Med)	☐	Photonics (Pho)	☐
	Information and Cyber Security (ICS)	☐	Civil Engineering (CE)	☐