

Composites Structures Analysis by Finite Element Method

Module of Master E.P.M.A
European Postgraduate Master
in Aerospace
will open on september 2008



Objectives

The aim of this module is to provide an overview on Finite Element Structural Analysis for composite parts existing in an aircraft.

On completion of this module, delegates will be able to:

- Understand Finite element sizing principles and tools for composite structures
- Appreciate the dependency between these principles and the requirements and also aircraft design constraints
- Describe and analyze FE simulation for individual system
- Understand the influence of FE analysis on reliability, safety and economics of aircraft operation.

Target Delegates

This module is intended for professionals - engineers or assistant engineers and/or managers- interested in a carrer on aeronautical maintenance engineering.

Number of Delegates

16 maximum

Prerequisite of the module

Basis of theory of finite elements for isotropic materials and Classical Laminate Theory for Composites Materials.

On demand, a ten hour preparatory reading of reference litterature could be send to help the delegate to improve his knowlege on this topics.

Lecturers

Lecturers come from University Bordeaux1, LGM²B and from composites analysis consultant.

The conferences session will be given by industrials partners from aerospace sector.

Learning Methods

Courses: 5H00

Course applications: 5H00

Practical works : 16H00

Conferences : 4H00

Program taught in English.

Learning Tools

- Courses, applications and practical works proceedings will be given in paper and CDROM format.
- Workstations with IDEAS and a dedicated finite element analysis software will be used for applications and practical works.

Dates

From 23th to 27th of June 2008

Duration

5 days

Place

University Bordeaux 1 - IMA
rue Marcel Issartier
33700 Mérignac

Programme

Hours	Monday	Tuesday	Wednesday	Thursday	Friday
8H00-9H00		Course: Post Processing	Application: Study of repaired structures	Application: Dynamics	Application: Non linear Simulation
9H00-10H00	Introduction	Application: Analysis of EF simulation			
Break					
10H15-11H15	Course: Type of elements Discretisation of composites structures		Conference	Conference	Conference
11H15-12H15					
Lunch					
14H00-15H00	Application: Introduction to the use of EF software	Application: Thick structures / Sandwich structures	Application: Buckling and post buckling analysis	Conference	Evaluation
15H00-16H00				Course: Non-linear simulations	Debriefing session 30'
Break					
16H15-17H15					

Theory of finite elements for composites:

- Type of elements; Meshing of composites structure (2H00)
- Post-processing / analysis of results (1H00)

Practical use of composites finite element software:

- Introduction (1H00)
- Analysis of finite element simulation on thin structures (6H00)
- Thick structures and Sandwich structures (3H00)
- Study of repaired structure (3H00)
- Buckling / post Buckling (3H00);
- Dynamics (3H00)

Large displacement; Non linear behavior (2H00 course + 3H00 application)

Industrial conferences (4H00)

Certification of the module

A certificate of training is established, at the end of the module, by the Service Commun de la Formation Continue et de l'Apprentissage of the University Bordeaux 1 for each participant, on the basis of attendance sheet.

Training fees

1 250 € net inclusive of didactical material, coffee-breaks and lunches.

A company group discount is provided.

Responsible of the module

Dr Jean-Christophe WAHL

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Coordination



ENGINEERING

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ENROLMENT BEFORE 6th of June

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