

# Registration form

I authorize the inclusion of my data in your computer files, in compliance with the law on the protection of personal data. I authorize to process my data to send communications on continuing education courses and the development of statistical elaborations. At any time, in accordance with Decreto Legislativo no. 196/03, I will still have access to my data, to request the modification or cancellation.

YES  NO

Name \_\_\_\_\_

Surname \_\_\_\_\_

Date and Place of birth \_\_\_\_\_

Title \_\_\_\_\_

Company/university \_\_\_\_\_

Address \_\_\_\_\_

ZIP \_\_\_\_\_

City \_\_\_\_\_

Nation \_\_\_\_\_

E-mail \_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_

Politecnico di Milano

Dipartimento di  
Scienze e Tecnologie Aerospaziali

## Course director

Prof. Giuseppe Quaranta

## Co-director

Prof. Cesare Cardani

## Dates

From June 3<sup>rd</sup> to June 5<sup>th</sup> 2015

## Venue

Dipartimento di Scienze e Tecnologie  
Aerospaziali, Campus Bovisa, Building B12,  
via La Masa 32, 20156 Milano, Italy

## Registration fee € 450

## Student registration fee € 150

Registration online: [www.eko.polimi.it](http://www.eko.polimi.it)

(The fee is exempt from VAT as per art. 10  
Decreto Presidenziale 633 / 26.10.72 and  
subsequent amendments.)

To receive information about the method of  
payment please contact the secretary of the  
course

## Additional information and registration

Please contact

Dott.ssa Laura Lupano

Ph: +39 02 2399 8339

fax: +39 02 2399 8334

e-mail: [segreteria-daer@polimi.it](mailto:segreteria-daer@polimi.it)

website: [www.aero.polimi.it](http://www.aero.polimi.it)

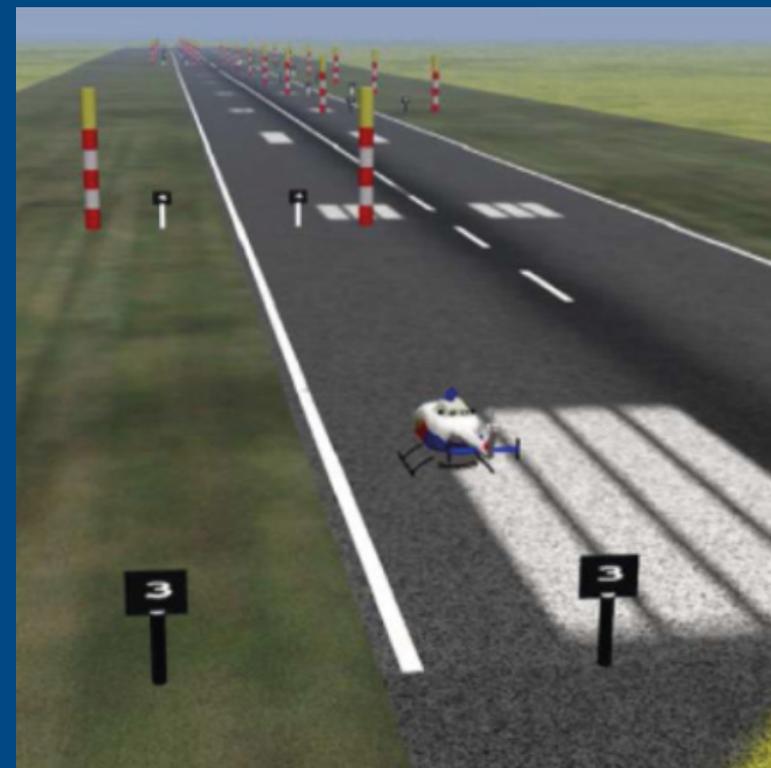
# Corso di formazione permanente Rotorcraft Handling Qualities Engineering

2015 - 1st Edition

POLITECNICO DI MILANO



DIPARTIMENTO DI  
SCIENZE E TECNOLOGIE AEROSPAZIALI



Laura Dalzini - 005/ld 2015

# Introduction

The growth of the handling qualities discipline has brought us to a point where designers have, within their grasp, the performance standards, the criteria and test techniques, the understanding of rotorcraft aeromechanics and control, and the design tools, to ensure that handling qualities deficiencies never again define the boundary of the operational flight envelope. The pilot is a vital component in the rotorcraft system; normally, a nearly perfectly functioning component, but one that can be stressed, fatigued, or overloaded, particularly when dealing with the consequences of handling qualities deficiencies, and when managing high tension between flight performance and safety. This tension is more manageable when an aircraft has good handling qualities throughout all missions, including flight in degraded environments and hazardous operations. This course will show how rotorcraft industry has arrived at this point, how the standards and the enabling technologies have developed, spurred by user needs, and enabled by research.

# Intended audience

The course is intended for engineers working in the flight physics and design department of rotorcraft companies, for graduate and PhD aerospace engineering students who want to deepen their knowledge of helicopter flight mechanics and handling qualities.

The organizers reserve the right not to make the course if the minimum number of 5 participant is not reached.

# Program

June 3<sup>rd</sup>

09:00-10:30	Rotorcraft Handling Qualities Engineering
10:30-11:00	Comfort break and discussion
11:00-12:30	Aeronautical Design Standard-33 Predicted and Assigned Handling Qualities
12:30-13:00	Discussion
13:00-14:00	Lunch break
14:00-15:30	Capturing Requirements for Tilt Rotor Handling Qualities - Case studies in virtual engineering -
15:30-17:00	Comfort break and discussion

June 4<sup>th</sup>

09:00-11:00	Workshop on rotorcraft handling qualities: requirements, design, verification on few classical helicopters
11:00-13:00	Discussion
13:30-14:30	Lunch break
14:30-16:00	The Tau of Flight Control
16:00-17:00	Comfort break and discussion

June 5<sup>th</sup>

09:00-10:30	Aircraft/Rotorcraft - Pilot - Couplings A personal perspective
10:30-11:00	Comfort break and discussion
11:00-13:00	The role of Modelling and Simulation in Aircraft Design, Development, Test and Evaluation with particular regard to fidelity
14:30-16:30	Rotorcraft Pilot Couplings the ARISTOTEL Project experience
16:30-17:30	Discussion

# Structure of the course

The course is composed of seven lectures followed by a discussion, and a short workshop dedicated to the analysis of classical rotorcraft design examples, that will be held during three days from 9:00 am to 5:00 pm (with breaks).

# Lecturers

Prof. Gareth Davies Padfield, Emeritus Professor of Aerospace Engineering, The University of Liverpool.

For the workshop and the lecture on ARISTOTEL project:

Prof. Pierangelo Masarati, Associate Professor  
Prof. Giuseppe Quaranta, Associate Professor