INTRODUCTION TO ROTARY WING STABILITY AND CONTROL

APRIL 13-17
Monday – Friday, 8:00 am – 5:00 pm
UAH Campus, 4.0 CEUs

Experience S&C theory in real world application flying as a rotorcraft flight test engineer. Examine how the stability and control characteristics contribute to the aircraft’s flying qualities, or the ease and accuracy with which the pilot accomplishes maneuvers of the aircraft. Learn the equations of motion and gain an understanding of how the parameters of these equations contribute to the stability and control of the rotorcraft system. Benefit from understanding the theory and practice that matters to the rotorcraft pilot.

This course includes actual in-flight labs.* Although flying is not mandatory, participating in the data acquisition flights helps develop a firm foundation for understanding the theories taught in the classroom.

Presented in partnership with the UAH Rotorcraft Systems Engineering and Simulation Center and Momentum Foundation, Tullahoma, TN.

Limited Seats Available – Register Early
18 maximum participants per course. Attendees are encouraged to bring laptop and scientific calculator. Participants may not cancel after February 27. Substitutions may be made at any time.

* In the event of inclement weather, flights will be simulated.

SESSION NUMBER: C2315014 FEE: $3975

Day One:
- Introduction
- Rotor Systems
- Instrumentation
- Flight / Safety Brief
- Aircraft Familiarization and Instrumentation Brief
- Flight #1: Introduction Flight
- Rotor Systems (continuation)
- Longitudinal Equations of Motion

Day Two:
- Longitudinal Equations of Motion (continuation)
- Stability and Control Derivatives
- Introduction to Handling Qualities Rating (HQR)
- Mechanical Characteristics
- Longitudinal Flight Test Techniques
- Flight / Safety Brief

Day Three:
- Flight #2: Longitudinal Stability Test Flights
- Lateral Directional Equations of Motion
- Lateral Directional Stability and Control Derivatives
- Lateral Directional Stability Flight Test Techniques
- First and Second Order Systems

Day Four:
- Longitudinal Dynamics
- Lateral Directional Dynamics
- Flight #3: Lateral Directional Test Flights and Dynamics Demo
- Workshop - Analysis and Presentation of Flight Test Data

Day Five:
- Aircraft Design Standard (ADS)-33
- Student Team Presentations of Data and Analysis from Test Flights and Briefs
- Guest Speaker - Special Topics in rotary wing flight control technology

For more information:
JoAnn.Jones@uah.edu
256.824.2808
INSTRUCTORS

Robert (Bob) Miller, an Aeronautics Engineer for Wyle Inc. at the US Naval Test Pilot School (USNTPS), instructs Rotary Wing Flying Qualities, Stability and Control, Rotary Wing Flight Mechanics, and Aeronautical Properties. He worked as a Flight Test Engineer and a Simulation and Variable Stability System Engineer in which he conducted research and developed simulation math models. He graduated from USNTPS, West Virginia University (BSME), and Princeton (MS Aerospace and Engineering Sciences) with graduate work in control theory. FAA Certs/Licenses: Commercial Pilot, Instrument Rating, Commercial Sea Plane, and Flight Instructor (SEL, Instruments, and Gliders).

Rodney Allison is president and founder of Momentum Foundation, Inc. and XP Services, Inc. His experience includes US Army Engineering Test Pilot (graduate of USNTPS), Chief Army Test Pilot for the RAH-66 Comanche, Research Professor at the University of Tennessee Space Institute (UTSI), and over 10,000 flight hours, qualified in over 130 different aircraft. Mr. Allison holds current Airline Transport Pilot, Flight Engineer, and Certified Flight Instructor certificates in airplanes and helicopters and is type-rated in the A310, A300, B727, B767, B757, B214ST, B212, B412, BO105, HU369, MD500N, SA365, SD3, and SK76. He graduated from Embry-Riddle (BS, Professional Aeronautics) and UTSI (MS, Aviation Systems).

James Wright is an educator with the Momentum Foundation, as well as Director of Rotary Wing and International Programs for XP Services, Inc. He is a distinguished graduate of the USNTPS with over 8,000 flying hours in over 95 different aircraft. Mr. Wright was the senior experimental test pilot for Attack and Reconnaissance helicopter test programs at the US Army's Aviation Flight Test Directorate. His test experience includes handling qualities and performance tests, structural/flight load testing, engine-airframe compatibility, rotor system development, cockpit operating environment software, electro-optical sensors, and integrated and federated weapon systems.

WAYS TO REGISTER

ONLINE
www.PCS.uah.edu

PHONE
256.824.6010 or 800.448.4031
8:15 am – 5:00 pm (CST)
Monday – Friday

FAX
registration form to 256.824.6760

IN PERSON
UAH Campus
Wilson Hall, Room 103

MAIL
registration form to:
UAH Professional and Continuing Studies
Wilson Hall, Room 103
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UAH Professional and Continuing Studies (PCS) courses meet requirements for providing Continuing Education Units (CEU).

• One CEU = 10 contact hours of instruction
• One PDH, CLP, or CPE = one contact hour of instruction
• One CEU = 10 PDH, CLP, or CPE

Successful course completion requires participants to attend 80% of scheduled class meetings (and complete associated exams or projects, if applicable). Participants receive a certificate indicating the number of CEUs earned.

For a complete list of policies, or a registration form, visit www.PCS.uah.edu.

Customized Corporate Training Available
Team with our expert instructors to provide your organization with courses tailored specifically to your needs. Schedule your training for locations and times that are convenient and cost effective.

Contact Jo Ann Jones for more information.
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