On-Site Training

UCLA Extension also offers customized technology and engineering training that can be offered on-site at your workplace. These fast, flexible, specialized programs can help you achieve your goals, stay up to date on current trends, and learn about cutting-edge technology. Benefits of having UCLA Extension training on-site include:

• Customizable to suit your company’s needs
• Allows for open and confidential discussions among employees
• Flexibility to accommodate a greater number of attendees
• Additional cost savings by eliminating employee travel expenses
• Each attendee receives a record of participation and continuing education units from UCLA Extension

Courses are offered on a variety of technical subjects, including aerospace and mechanical engineering, biomedical engineering, communications and sensors engineering, electronics, leadership and project management, and more.

Visit uclaextension.edu/shortcourses20.
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These things are what makes working in a technical field so exciting and also why continuing education is so important. UCLA Extension short courses give you the tools you need to upgrade your career or take off in an exciting new direction in just 2-5 days. You’ll get intensive training in a variety of cutting-edge technical fields, giving you technical and practical knowledge you can apply immediately. Our short courses are now offered fully online, as well as on campus.

Our world-class instructors are selected from the top ranks of industry and academia, so you get relevant, real-world education from experts in the field. For more than 50 years, UCLA Extension has presented technical and management short courses for engineers, IT professionals, and technical managers seeking to keep abreast of new and rapidly changing technologies.

Enrollment Discounts
Save on enrollment costs when you enroll at least one month prior to the start of a course. UCLA Extension short courses also offer a special Team Advantage discount. For every three members you enroll, you can add a fourth enrollment for free.
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UCLA Extension Short Courses

Structural Integrity of New and Aging Metallic Aircraft

This course presents both fundamental concepts and practical instruction in methods for fatigue, durability, and damage tolerance analysis/testing of metallic aircraft structures. The lectures emphasize the use of modern fatigue and fracture mechanics technology in the design of durable, damage-tolerant aircraft structures and the extended safe use of aging aircraft. The course opens with a discussion of basic fatigue and fracture behavior of structural metallic materials. With this background, the ensuing lectures detail the structural methods used in the aircraft industry to develop fatigue loading spectra, as well as fatigue life, crack growth, and residual strength analyses. The course also explores the application of this technology to verify the structural integrity and longevity of new aircraft, along with life monitoring, maintenance, and life extension of aging aircraft. Remote web access available via Zoom.

Coordinator & Lecturer:
Paul Clark, Principal Engineer, Southwest Research Institute, Hill AFB

Dates: Jan. 28-30, 2020
Course No.: MECH&AE 810.200
Units: 1.2
Fee: $2,295

Composite Airframe Structures

This course introduces participants to practical hands-on information, data, and techniques for designing composite airframe structures with respect to design regulations and specifications. It covers a broad range of aircraft configurations, from transports and fighters to general aviation aircraft. The course provides technical understanding and practical knowledge in advanced composites, emphasizing design and manufacture to achieve a sound airframe structure. All aspects of composite design are discussed in a thorough and rigorous fashion, including guidelines, observations, design factors, pros and cons of design cases, and troubleshooting techniques. The basic theory of composites and practical laminate strength (for stress) analyses are introduced to size airframe composite structures. Homework assignments and quizzes are given every day in class. Remote web access available via Zoom.

Coordinator & Lecturer:
Robert Hanson, MSEE, Consulting Company

Dates: Feb. 18-20, 2020
Course No.: EC ENGR 870.090
Units: 1.8
Fee: $2,295

High Speed Digital Design and PCB Layout

The speed of today’s logic devices mandates that the interconnects on PCBs must meet the high switching rise/fall times of these devices. Switching edges are in the 200ps to 300ps range and some devices have edges that have broken the 50ps barrier. It is the edge rate, not the frequency, which exacerbates this problem. So, even if your design is for moderate frequency, the edge rates can cause these designs to reflect the high-speed effects. This course provides you with the knowledge to do right the first time and provides tools for recognizing the problems with proposed high-speed design. Design rules and processes are taught to ensure the PCB will function properly at the prototype stage. The course emphasizes cost competitive design without sacrificing high-speed integrity. Remote web access available via Zoom.

Coordinator & Lecturer:
San Diego Consulting Company

Dates: March 16-19, 2020
Course No.: MECH&AE 810.40
Units: 1.2
Fee: $3,695

DSP for Communications Systems

This course addresses how to implement engineering functions in a cost-effective way by using computational means instead of analog hardware. Instruction emphasizes communication systems, where traditional applications, such as modulation/demodulation, channelization, channel equalization, synchronization, and frequency synthesis, are now being implemented with new digital signal processing techniques to achieve high performance. The course analyzes these techniques, including multirate filters, I-Q sampling, sigma-delta modulators, and conversion between I-O and real signals. This course focuses on real-world systems using modern DSP methods and illustrates all concepts with MATLAB demonstrations that are distributed to participants. Remote web access available via Zoom.

Coordinator & Lecturer:
Fredric Harris, professor of Electrical and Computer Engineering at University of California San Diego

Dates: March 2-5, 2020
Course No.: EC ENGR 810.70
Units: 2.4
Fee: $3,595

Airframe Stress Analysis and Sizing

Most airframes deal with the sheets or shells that may have buckling and crippling characteristics. This course provides a comprehensive background in metallic airframe sizing that combines input from both material strength analyses and hands-on design experience. Practical airframe design depends extensively on experimental or test data that must be correlated with analytical procedures. Discussion focuses on the selection of structural configurations and materials that combine to produce an economic design, while at the same time taking into account the effects of statics, fatigue, fatigue-related failures, durability, and safety. Structural methods and data for metallic airframe sizing is presented in tables, charts, and/or curves based on past experience and/or test results. The sizing methods presented in this course are also intended for those who need rough estimation techniques to support preliminary structural design. Moreover, these methods can give quick and accurate solutions to design problems simply with the aid of a desktop engineering calculator. Remote web access available via Zoom.

Coordinator & Lecturer:
Michael C. Y. Niu, President, AD Airframe Consulting Company

Dates: March 2-5, 2020
Course No.: MECH&AE 810.70
Units: 2.4
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Save on most courses with code EARLY by enrolling at least 28 days in advance of the course start date. Code is case sensitive.

Discounts cannot be combined. Some limitations apply.
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uclaextension.edu/aerFRAME

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Coordinator & Lecturer: Michael C. Y. Niu, President, AD Airframe Consulting Company
Dates: Feb. 24-27, 2020
Course No.: MECH&AE 810.50
Units: 2.4
Fee: $3,359

High Speed Digital Design and PCB Layout
uclaextension.edu/highspeed

The speed of today’s logic devices mandates that the interconnects on PCBs must meet the high switching rise/fall times of these devices. Switching edges are in the 200ps to 300ps range and some devices have edges that have broken the 50ps barrier. It is the edge rates, not the frequency which exacerbates this problem. So, even if your design is for moderate frequency, the edge rates can cause these designs to reflect the high-speed effects. This course provides you with the knowledge to do it right the first time and provides tools for recognizing the problems with any proposed high-speed design. Design rules and processes are taught to ensure the PCB will function properly at the prototype stage. The course covers high-speed cost competitive design without sacrificing high-speed integrity. Remote web access available via Zoom.

Coordinator & Lecturer: Robert Hanson, MSEE, University of Southern California, BSEE, University of Washington, A & RSBA, University of North Dakota
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Course No.: EC ENGR 870.00
Units: 1.8
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Coordinator & Lecturer: Michael C. Y. Niu, President, AD Airframe Consulting Company
Dates: March 16-19, 2020
Course No.: MECH&AE 810.40
Units: 3.4
Fee: $3,565

DSP for Communications Systems
uclaextension.edu/dsp-communication

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Dates: March 2-5, 2020
Course No.: EC ENGR 830.70
Units: 1.2
Fee: $2,295

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uclaextension.edu/airframe

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Fee: $3,359

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Course No.: EC ENGR 830.70
Units: 1.2
Fee: $2,295
Winter 2020 Public Short Courses

January 28-30
Structural Integrity of New and Aging Metallic Aircraft

February 18-20
High-Speed Digital Design and PCB Layout

February 24-27
Composite Airframe Structures

March 2-3
DSP for Communications Systems

March 16-19
Airframe Stress Analysis and Sizing

To learn more, call (310) 825-3858, email shortcourses@uclaextension.edu, or visit us at uclaextension.edu/shortcourses20.

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Stay on Course at Your Workplace