COMPUTER SCIENCE & INFORMATION SYSTEMS

Public Short Courses

Reach Your Goals in Just 2 to 5 Days

Get the tools you need to upgrade your career. Or take off in an exciting new direction.

UCLA Extension's short courses offer intensive training in a variety of cutting-edge technical fields. Learn technical and practical knowledge you can apply immediately. Plus, our world-class instructors—all from the top ranks of industry and academia—provide relevant, real-world education.

Summer Short Courses:

Agile Project Management

July 7-8

Instructor: **Nathaniel Crews**

FPGAs for DSP and Software Defined Radio

July 19-21

Instructor: **Robert Stewart**

Transitioning from Technical to Managerial Responsibilities

July 25-27

Instructor: **Ron Reed**

Extension also offers on-site customized training at your workplace.

For more information, visit *uclaextension.edu/shortcourses* or contact us at **(310) 825-334** or *shortcourses@uclaextension.edu*.

Announcing!

The Coding Boot Camp at UCLA Extension

Become a Web Developer in 24 Weeks

Class starts June 20th at UCLA Extension

Don't miss out on UCLA Extension's new 6-month Coding Boot Camp. This program is for working professionals interested in web development or who are actively seeking a career change or advancement. Even better, you can work full time while you learn the skills to be a professional web developer.

Did you know that web development is one of the fastest-growing careers in today's economy? The Bureau of Labor Statistics projects that web development will grow 20% by 2022. Web developers can earn a median salary of $63,000 and up to $110,000 per year.

Coding Boot Camp will cover:

- Skills to be a full stack developer, including proficiency in frontend and backend development
- HTML, CSS, JavaScript, jQuery and Node.js, as well as PHP frameworks like Laravel
- Hands-on learning opportunities with employers
- Career coaching, recruitment support, and an active network of hiring partners

For More Information
codingbootcamp@uclaextension.edu | **(310) 955-4093**
uclaextension.edu/codingbootcamp

In collaboration with TES.

Computer Science & Information Systems

Certificates and Courses

Learn emerging technologies in Information Systems that can advance your career.

Key courses and Information Systems Certificates are offered in Westwood or online.

- Applications Programming with Concentration in C# .NET
- Applications Programming
- Database Management
- Database Management with Concentration in Microsoft SQL Server
- Data Science
- Embedded Software
- Information Systems Security
- Java Programming
- Linux/Unix
- Mobile Application Development
- Operating System Administration
- Systems Analysis
- Web Technology

Updated:

X 417.08A Windows Server 2012 Administration

X 418.735A Programming in C# Visual Studio .Net Platform II

X 420.7 Information System Security Regulatory Compliance

X 450.4 Machine Learning Using R

Highlighted:

X 418.694 Microsoft SQL Server Administration

X 418.735 DA Program MS ASP .NET MVC Applications

X 450.3 Hadoop and Managing Big Data

For More Information
et@uclaextension.edu | **(310) 825-4100** | *uclaextension.edu/computers*

Technical Management Program

Sun–Fri, Sep 11-16

In just 5 days:

- Gain leadership and enhance interpersonal skills
- Learn the latest business trends and paradigms
- Obtain a repertoire of methods to solve problems, plan strategies, and motivate colleagues
- Network with attendees from around the world

For Complete Details
uclaextension.edu/tmp

Applications Programming

For a complete certificate description visit uclaextension.edu/computers. For information call (310) 825-4100 or email et@uclaextension.edu.

For online course technical requirements see page 4.

Fundamentals of Software Development

X 414.20 Management 4 units

The course provides a comprehensive introduction to computer programming and software development. It benefits individuals pursuing programming and software development as a career, as well as anyone in the IT field who works with programmers and systems analysts in important areas that precede actual programming, including problem-solving approaches; specifications and requirements; user interface design; and structured program design using such tools as hierarchy, Nassi-Schneiderman, and UML charts. Instruction covers programming concepts common to modern languages, including C, C#, Java, Visual Basic, and shell scripting. In addition to creating procedural programs (using C as the example language) and object-oriented programs (using Visual Basic), students produce small business applications in these two environments plus a commercial-level application by course's end. Instruction presents programming fundamentals including variables and expressions; flow of control, including looping and selection; event-driven programming in the Windows .NET environment; file processing; and modular development. The course also covers the development cycle, including unit test and integration, alpha/beta testing, and software defect tracking and classification, plus examples of C#, Java, and SQL programming. This introductory course requires weekly programming assignments and prepares students for future coursework in C, C++, C#, Java, Visual Basic, or any other high-level language. *Prerequisite:* Required course in the Systems Analysis Certificate. *Enrollment limited. This is not a laboratory course. Requires computer work outside of class.*

Reg# 265339CA
Fee: $950
Westwood: 131 Extension Gayley Center, 1145 Gayley Ave.
Mon 6:30-9:30pm, Jun 20-Sep 19, 12 mtgs (no mtg 7/4 & 9/5)
Keith V. Jefferies, MBA, president, ComputerUp

Fundamentals of Software Development

X 414.20 Management 4 units

Required course in the Systems Analysis Certificate. Enrollment limited. For more information see page 64.

Reg# 265340CA
Fee: $950
Jun 20-Sep 5
Keith V. Jefferies, *for credits see page 64.*

Relational Database Management

X 414.51 Management 4 units

Microsoft Visio Professional available to students.

Understanding client-relational database design is vital to system design and implementation. Learn relational database technology, data modeling, SQL, data normalization, and the translation of logical designs to physical storage structures. Additional topics include indexes, storage management, transactions, database integrity, concurrency control, recovery, client/server relational database management, and introduction to query optimization.*For technical requirements see page 4. Required course in the Systems Analysis certificate. Enrollment limited.*

Reg# 265258CA
Fee: $950
Jun 22-Aug 24
Ronald G. Landers, BS, owner, Right-Click Consulting, LLC.

Using Structured Query Language (SQL) Syntax

X 414.61 Management 4 units

Structured Query Language (SQL) is an American National Standards Institute (ANSI) standard computer language for accessing and manipulating database systems. SQL works with such database programs as Microsoft Access and SQL Server, DB2, Informix, Oracle, and Sybase. Designed for individuals with little or no SQL experience, this hands-on course covers SQL syntax. The course gives students an overview of SQL and how to use SQL statements to retrieve and update data in a database. Students begin by creating basic select statements and progress into the more advanced detailed and complex features of SQL, including using keywords such as SELECT, UPDATE, DELETE, INSERT, WHERE, and others. The course also covers table joins; sub-queries; if and case statements; cast and covert statements; and much more. *Prerequisite:* Basic knowledge of Windows is recommended. *Enrollment limited.*

Reg# 265424CA
Fee: $1,050
Westwood: 203 Extension Lindbrook Center
Tue 6:30-10pm, Jun 21-Aug 23, 10 mtgs
Richard Patlan, DBA/programmer analyst, Capital Programs, UCLA

Using Structured Query Language (SQL) Syntax

X 414.61 Management 4 units

Prerequisite: Basic knowledge of Windows is recommended. *Enrollment limited. For more information see page 64.*

Reg# 265423CA
Fee: $1,050
Jun 20-Aug 22
Richard Patlan, *for credits see page 64.*

Website Construction with Adobe Software: Dreamweaver, Flash, and Photoshop

X 418.102A Management 4 units

Adobe Creative Cloud is used.

This course provides a hands-on introduction to Adobe's trio of web software programs: Dreamweaver, Photoshop, and Flash. These programs have become the choice of many website development professionals and each provides unique tools. Dreamweaver is renowned for its HTML and web page layout capabilities and provides advanced automatic HTML, CSS (Cascading Style Sheets), DHTML, and JavaScript code generation. Flash is the preferred technology for creating web animation and provides multiple options for creating interactivity. Photoshop is an ideal vehicle for generating image files for HTML documents and provides tools for editing both bitmap and vector image files. It also creates and exports HTML and JavaScript code. *Part of Applications Programming certificate. Enrollment limited. Internet access required to retrieve course materials.*

Reg# 265248CA
Fee: $950
Westwood: B06 1010 Westwood Center
Tue 6:30-10pm, Jun 21-Aug 23, 10 mtgs
Dan Hitchcock Vaughan, BA, proprietary software instructor, technical writer, and usability specialist, Rhythm & Hues Studios

Program in C# For Visual Studio .NET Platform I

X 418.735 Computer Science 4 units

Includes instructor's materials and instructions on obtaining DreamSpark access to Microsoft software.

This course provides new developers and application developers unfamiliar with the C# language the knowledge and skills to develop C# applications using the Microsoft .NET platform. Focusing on C# program structure, language syntax, and object-oriented concepts, students build projects using console applications, Windows forms, web forms, and XML web services. Upon completing the course, students should be able to list the major elements of .NET framework; analyze the basic structure of a C# program; and use the IDE to debug, compile, and run simple applications. *Prerequisite:* Experience in other programming languages, such as Visual Basic, C, C++, and Java, is

useful. *Required Course for the Applications Programming Certificate Program. Enrollment limited. Internet access required to retrieve course materials.*

Reg# 264181CA
Fee: $950
Westwood: 215 UCLA Extension Bldg.
Tue 6:30-10pm, Jun 21-Aug 23, 10 mtgs
Mickey Ashishpal, director, Software Development, Korn Ferry International

Programming in C# for Visual Studio .NET Platform I
X 418.735 Management 4.5 units
Includes instructor's materials and instructions on obtaining DreamSpark access to Microsoft software. Prerequisite: Experience in other programming languages, such as Visual Basic, C, C++, and Java, is useful. *Enrollment limited. For more information see page 64.*

Reg# 265544CA
Fee: $950
Jun 22-Aug 24
Fred Savage, MBA, ACE (Authorized Crystal Engineer) MCT, MCSD, consultant

Java Programming I
X 418.85A Computer Science 4 units
Powerful enough to build large N-tiered Internet and intranet applications, Java is a well-designed object-oriented language that allows rapid program development. Due to its simplicity, it also is an excellent first-time programming language to learn. This hands-on course presents the fundamentals of programming using Java and covers object-oriented programming, classes, constructors, flow control statements, data types, methods, inheritance, data hiding, abstraction, and the Java library. Students gain experience through a number of programming projects during the course and instruction stresses practical programming skills to prepare them for follow-on Java courses. *Prerequisite:* Requires computer work outside of class as well as a computer with any operating system that supports Java; familiarity with the operating system; and the ability to create files and folders, use an Internet browser and email, create zipped files to send as email attachments, and download software from the Internet for class and programming assignments. *Enrollment limited.*

Reg# 265548CA
Fee: $950
Westwood: B06 1010 Westwood Center
Wed 6:30-10pm, Jun 22-Aug 24, 10 mtgs
Amir Hallajpour, software consultant, AITech Defense Systems

Reg# 265599CA
Fee: $950
Westwood: 203 Extension Lindbrook Center
Thu 7-10pm, Jun 23-Sep 8, 12 mtgs
Charles Harless, MS, principal software engineer, Sage Software

Java Programming I
X 418.85A Computer Science 4 units
Prerequisite: Requires computer work outside of class as well as a computer with any operating system that supports Java; familiarity with the operating system; and the ability to create files and folders, use an Internet browser and email, create zipped files to send as email attachments, and download software from the Internet for class and programming assignments. *Enrollment limited. For more information see page 65.*

Reg# 265547CA
Fee: $950
Jun 22-Aug 24
Amir Hallajpour, *for credits see page 65.*

Online course
Not available passed/not passed
Text required
Course held during daytime hours

Applications Programming in C# .NET

For a complete certificate description visit uclaextension.edu/computers. For information call (310) 825-4100 or email et@uclaextension.edu.

For online course technical requirements see page 4.

Fundamentals of Software Development
X 414.20 Management 4 units
Prerequisite: Required course in the Systems Analysis Certificate. *Enrollment limited. This is not a laboratory course. Requires computer work outside of class. For more information see page 64.*

Reg# 265339CA
Fee: $950
Westwood: 131 Extension Gayley Center, 1145 Gayley Ave.
Mon 6:30-9:30pm, Jun 20-Sep 19, 12 mtgs (no mtg 7/4 & 9/5)
Keith V. Jefferies, *for credits see page 64.*

Fundamentals of Software Development
X 414.20 Management 4 units
Required course in the Systems Analysis Certificate. Enrollment limited. For more information see page 64.

Reg# 265340CA
Fee: $950
Jun 20-Sep 5
Keith V. Jefferies, *for credits see page 64.*

Relational Database Management
X 414.51 Management 4 units
Microsoft Visio Professional available to students. Required course in the Systems Analysis certificate. Enrollment limited. For more information see page 64.

Reg# 265258CA
Fee: $950
Jun 22-Aug 24
Ronald G. Landers, *for credits see page 64.*

Program in C# For Visual Studio .NET Platform I
X 418.735 Computer Science 4 units
Includes instructor's materials and instructions on obtaining DreamSpark access to Microsoft software. Prerequisite: Experience in other programming languages, such as Visual Basic, C, C++, and Java, is useful. *Required Course for the Applications Programming Certificate Program. Enrollment limited. Internet access required to retrieve course materials. For more information see page 64.*

Reg# 264181CA
Fee: $950
Westwood: 215 UCLA Extension Bldg.
Tue 6:30-10pm, Jun 21-Aug 23, 10 mtgs
Mickey Ashishpal, *for credits see page 64.*

Programming in C# for Visual Studio .NET Platform I
X 418.735 Management 4.5 units
Includes instructor's materials and instructions on obtaining DreamSpark access to Microsoft software. Prerequisite: Experience in other programming languages, such as Visual Basic, C, C++, and Java, is useful. *Enrollment limited. For more information see page 64.*

Reg# 265544CA
Fee: $950
Jun 22-Aug 24
Fred Savage, MBA, ACE (Authorized Crystal Engineer) MCT, MCSD, consultant

Programming in C# Developing Web Applications Platform II
X 418.735D Management 4 units
Includes instructor's materials and instructions on obtaining Dream Spark access to Microsoft software. Benefiting intermediate C# developers, this course provides the knowledge and skills to develop web applications using ASP.NET and XML web services. Using Visual Studio .NET, students learn how to create web forms, use server controls effectively in an ASP.NET web form, validate web form controls, use ADO.NET to access data, call an XML web service from a web application, and configure and deploy web applications. Upon completing the course, students know the Microsoft .NET framework libraries needed for web application development, how to effectively create and use web forms, data access techniques using ADO.NET, and methods to call web services. *Prerequisite:* X 418.735 Programming in C# Fundamentals for Visual Studio .NET Platform I or previous experience in using C#. Some knowledge of HTML and database concepts is extremely useful. *Required course in the Applications Programming with Concentration in C# .NET certificate program. Enrollment limited.*

Reg# 265601CA
Fee: $950
Westwood: 213 UCLA Extension Bldg.
Sat 9:30am-4:30pm, Jun 25-Jul 30, 6 mtgs
David Henson, BA, Microsoft-Certified Trainer and System Engineer, Certified Networks, Inc.; recipient, UCLA Extension Distinguished Instructor Award, 2010.

Database Management

For a complete certificate description visit uclaextension.edu/computers. For information call (310) 825-4100 or email et@uclaextension.edu.

For online course technical requirements see page 4.

Relational Database Management
X 414.51 Management 4 units
Microsoft Visio Professional available to students. Required course in the Systems Analysis certificate. Enrollment limited. For more information see page 64.

Reg# 265258CA
Fee: $950
Jun 22-Aug 24
Ronald G. Landers, *for credits see page 64.*

Network Communications with TCP/IP
X 417.96 Management 4 units
Learn network communications, from the basics of network topologies, OSI layering, and Ethernet to networking hardware and packet-switching fundamentals. The course focuses on TCP/IP and its plethora of protocols and services. Topics also include IP addressing, routing, switching, reliable data transfer, and congestion management. Students study many TCP/IP services, including DNS, DHCP, and VPN. Instruction also reviews network security as well as application layer protocols (such as HTTP, FTP, and email) and client/server network applications. The course provides hands-on examples using Windows, Linux, and Solaris. Students also learn how networks and TCP/IP work, and how to work TCP/IP. *Prerequisite:* While no experience in data communications is needed, students should have a good background in computing with experience installing and operating Microsoft Windows or Unix (such as Solaris or Linux). *Required course in the Systems Analysis certificate. Enrollment limited. Internet access required to retrieve course materials.*

Reg# 265272CA
Fee: $950
Westwood: 215 UCLA Extension Bldg.
Thu 6:30-10pm, Jun 23-Aug 25, 10 mtgs
Fred M. Zerez, MS, MCSE, MCT; IT manager, Athene Asset Management LLC.

Network Communications with TCP/IP
X 417.96 Management 4 units
Prerequisite: While no experience in data communications is needed, students should have a good background in computing with experience installing and operating Microsoft Windows or Unix (such as Solaris or Linux). *Enrollment limited. For more information see page 65.*

Reg# 265566CA
Fee: $950
Jun 20-Sep 5
Irfan Ahmed, global cyber security consultant, HP

Microsoft SQL Server Administration (Using MS SQL Server 2012)
X 418.694 Management 2.4 units
Includes instructor's materials and instructions on obtaining Microsoft DreamSpark access.
Intended for anyone implementing or administering Microsoft SQL Server 2012, this comprehensive workshop covers SQL server database administration tasks, including routine maintenance, backup and recovery, website integration, job scheduling, and data transfer through SSIS. *Prerequisite:* Familiarity with SQL. *Required course in the Operating Systems Administration certificate program. Enrollment limited; enrollment prior to the first class required.*

Reg# 265602CA
Fee: $950
Westwood: 213 UCLA Extension Bldg.
Sat 9:30am-4:30pm, Aug 6-Sep 10, 6 mtgs
David Henson, *for credits see page 65.*

Data Science

For information call (310) 825-4100 or email et@uclaextension.edu.

For online course technical requirements see page 4.

Introduction to Data Science
X 450.1 Computer Science 4 units
This course introduces students to the evolving domain of data science and to the food chain of knowledge domains involved in its application. Students learn a wide range of challenges, questions, and problems that data science helps address in different domains, including social sciences, finance, health and fitness, and entertainment. The course addresses the key knowledge domains in data science, including data development and management; machine learning and natural language processing; statistical analysis; data visualization and inference. The course also provides an exposure to some of the technologies involved in application of data science, including Hadoop, NoSQL, and R programming language. The course includes two case studies that would require students to work on real-life data science problems. *For technical requirements see page 4. Prerequisite:* There is no prerequisite for this course although students should be comfortable using computer software programs. Prior training/experience in mathematics and statistics is helpful. Similarly, knowledge of programming and of a programming language is beneficial. Thinking out of the box and a curious mind are the key traits of a successful data scientist. *Enrollment limited.*

Reg# 265420CA
Fee: $950
Westwood: 111 Extension Gayley Center, 1145 Gayley Ave.
Sat 9am-4pm, Jul 9-Aug 6, 5 mtgs
Rashed Iqbal, PhD, principal Agile coach, Western Digital Corporation

New

Data Science Series

Data Science, also known as Big Data, is a rapidly growing field. Enormous amounts of data are created to track the online behavior of social media users, patient data, purchasing habits of shoppers, or financial statistics, among others. Data Scientists play a key role in crunching the data, using mathematical algorithms to analyze and visualize the data, and making decisions.

Data Science courses address the key knowledge domains in Big Data, including data exploration, machine learning, predictive analytics, prediction, and visualization. You'll learn languages and tools such as Hadoop, NoSQL and R, and Tableau.

+ X 450.1 Introduction to Data Science
- X 450.2 Exploratory Data Analysis and Visualization
+ X 450.3 Hadoop and Managing Big Data
+ X 450.4 Machine Learning Using R
- X450.5 Big Data Analytics Information Management
- 450.6 Data Governance

+ Offered this quarter

For More Information
et@uclaextension.edu
(310) 825-4100
uclaextension.edu/computers

Hadoop and Managing Big Data
X 450.3 Computer Science 4 units
The extent of data being produced and stored by organizations is increasing In fact, IDC has projected to reach 40 zetta bytes by 2020. Organizations understand that being able to extract and leverage value and to gain actionable insights from this big data can give them a tremendous competitive advantaage. In this course, you learn all about Hadoop—from its evolution a framework consisting of tools for distributed storage and data processing, to an open-source framework. This course addresses distributed storage and large data set processing focusing on architectures and technologies, specifically Hadoop. Additionally, students learn about other elements in the Hadoop ecosystem, NoSQL databases, and competing technologies. Students also install, setup, and use Hadoop on a single node. *For technical requirements see page 4. Prerequisite:* X420.1 Introduction to Data Science, or prior knowledge in R and Python recommended; or consent of instructor *Enrollment limited.*

Reg# 265274CA
Fee: $950
Jun 20-Aug 22
Connie K. Fan, MS, data solution architect, Microsoft

Machine Learning Using R
X 450.4 Computer Science 4 units
This course focuses on machine learning which is concerned with algorithms that transform information into actionable intelligence. This field is made possible due to the rapid and simultaneous evolution of available data, statistical methods and computing power. The machine learning language, R, is a cross-platform, zero-cost statistical programming environment, which offers a powerful but easy-to-learn set of tools that can assist students with finding data insights. Students learn the origins and practical applications of machine learning, how knowledge is defined and represented by computers, and the basic concepts that differentiate machine learning approaches. Machine learning algorithms can be divided into two main groups: supervised learners that are used to construct predictive models, and unsupervised learners that are used to build descriptive models. Students learn the classification, numeric predictor, pattern detection and clustering algorithms. Students learn to train a model, evaluate its performance and improve its performance. Algorithm uses are illustrated with real world cases such as breast cancer diagnosis, spam filtering, identifying bank loan risk, predicting medical expenses, estimating wine quality, identifying groceries frequently purchased together and finding teen market segments. *For technical requirements see page 4. Prerequisite:* Prior knowledge in R, X450.1 Introduction to Data Science, or consent of instructor. *Enrollment limited.*

Reg# 265262CA
Fee: $950
Jun 21-Aug 23
Craig Aitken, MS, director of Program Management, Teledyne Controls

Also of Interest

◇ Introduction to Geographic Information Systems (GIS)
XL 7 Geography 5 units
The purpose of this course is to introduce students to fundamental principles and concepts behind the use and application of geographic information systems (GIS). Students will learn how to think spatially, become familiar with information technology, produce maps, communicate effectively using spatial information, and conduct data analysis with GIS. Instruction is techniques-oriented, focusing heavily on practical applications of GIS methods and practices using the industry-standard ArcGIS software platform. All course exercises situate GIS within both its practical and economic context. Key concepts and ideas are reinforced through practical assignments and activities with GIS. *Technical requirements:* Students are responsible for providing a personal computer with at least 2GB of RAM that runs Windows 7 or better. Macs can be used provided that Windows is installed either using Boot Camp or virtualization (VirtualBox, Parallels, etc.) with at least 2GB of RAM allocated to Windows. Students will be provided with a student license for ArcGIS as long as they are enrolled in program courses. *Required course for the GIS and Geospatial Technology Certificate. Enrollment limited to 50 students. Midterm and final exams are proctored online; additional requirements include microphone, headphones/speakers, and webcam.*

Reg# 266936CA
Fee: $1,875
Jun 27
Jul 3-Sep 4
Nick Burkhart, CPhil, academic coordinator, UCLA

◇ Cartography
XL 167 Geography 4 units
This is an accelarated course; 10 weeks of coursework will be completed in this six-week course.
This course introduces the methods, techniques, and considerations behind cartographic design geographic data visualization. The first part of the course covers the basic concepts and techniques involved in cartographic design including symbology, typography, and map projections. The second part of the course focuses on data science and the cartographic process, and in particular, considerations surrounding data literacy and interpretation, data visualization strategies, and web- based mapping technologies. The third part of the course concentrates on visualization design and web mapping frameworks, with a focus on ArcGIS online. Practical applications are provided throughout the course. *Technical requirements:* Students are responsible for providing a personal computer with at least 2GB of RAM that runs Windows 7 or better. Macs can be used provided that Windows is installed either using Boot Camp or virtualization (VirtualBox, Parallels, etc.) with at least 2GB of RAM allocated to Windows. Students will be provided with a student license for ArcGIS as long as they are enrolled in program courses. *Third course in the GIS & Geospatial Technology Certificate Enrollment limited to 50 students. Midterm and final exams are proctored online; additional requirements include microphone, headphones/speakers, and webcam.*

Reg# 263331CA
Fee: $1,500
Jun 20
Jun 26-Jul 31
Nick Burkhart, CPhil, academic coordinator, UCLA

◇ GIS Programming
XL 173 Geography 4 units
This is an accelarated course; 10 weeks of coursework will be completed in this six-week course.
This course introduces the theory, techniques, and logic behind GIS programming and its application to interactive web-based mapping technologies. Methods for processing, analyzing, and visualizing geographic data will be introduced through the use of common programming languages (JavaScript, Python), markup languages (HTML, CSS), and a number of industry-standard open source software platforms (QGIS, GDAL) and web mapping tools (Leaflet). The course's focus on GIS-specific programming and mapping techniques is situated within a curriculum that introduces essential components of the theoretical context of computer science and software development. *Technical requirements:* Students are responsible for providing a personal computer with at least 2GB of RAM that runs Windows 7 or better. Macs can be used provided that Windows is installed either using Boot Camp or virtualization (VirtualBox, Parallels, etc.) with at least 2GB of RAM allocated to Windows. Students will be provided with a student license for ArcGIS as long as they are enrolled in program courses. *This is the fourth course in the GIS & Geospatial Technology Certificate Enrollment limited; no enrollment at the door. Midterm and final exams are proctored online; additional requirements include microphone, headphones/speakers, and webcam.*

Reg# 263332CA
Fee: $1,500
Aug 1
Aug 7-Sep 11
Nick Burkhart, CPhil, academic coordinator, UCLA

Information Systems Security

For a complete certificate description visit uclaextension.edu/computers. For information call (310) 825-4100 or email et@uclaextension.edu.

For online course technical requirements see page 4.

Fundamentals of Information Systems Security
X 420.1 Computer Science 4 units
Replaces X 417.71 Introduction to Information Security Concepts.
This course combines theoretical security models with practical state-of-the-art examples for a comprehensive and useful introduction to this field. The course should benefit auditors, system administrators, or anyone else with a basic understanding of information technology. Topics include security policies, risk analysis, cryptography, and network security. Course material is consistent with relevant portions of the Certified Information System Security Professional (CISSP) certification exam's Common Body of Knowledge (CBK). *For technical requirements see page 4. Required course in the Information Systems Security and Systems Analysis certificate programs. Enrollment limited.*

Reg# 265565CA
Fee: $950
Jun 20-Sep 5
Irfan Ahmed, global cyber security consultant, HP

Reg# 265338CA
Fee: $950
Jun 21-Aug 23
Vincent LeVeque, MS, business information security officer, AIG

Information System Security Regulatory Compliance
X 420.7 Computer Science 4 units
This course covers general (SOX) and industry-specific (HIPAA, GLBA) regulations, federal and state laws (AB 1950 and SB 1386). Effective information security programs built around security control frameworks may be measured through compliance audits. This course presents and addresses information security management with common industry, government, and commercial compliance requirements such as FFIEC, GLBA, HIPAA, Sarbanes Oxley, and PCI. *For technical requirements see page 4. Prerequisite:* CMPSCI X420.1 Fundamentals of Information Systems Security certificate program. *Defined elective in the Information Systems Security certificate program. Enrollment limited.*

Reg# 265605CA
Fee: $950
Jun 20-Sep 5
Instructor to be announced

Information System Security Lab (Defensive Tools)
X 420.9 Computer Science 4 units
This hands-on course introduces defensive methodology and tools. Defensive security practices require a strong understanding of current risks and exploits. Leveraging the knowledge acquired from the Information System Security Lab (offensive tools), this course builds on the remediation strategies for thwarting off active offensive attacks. This course introduces core defensive strategies for various environment types, and provides hands-on experiences of security defensive tools. *For technical requirements see page 4. Prerequisite:* X420.8 Information System Security Lab (Offensive Tools) is recommended. *Elective course in Information Systems Security Certificate. Enrollment limited.*

Reg# 265343CA
Fee: $950
Jun 20-Sep 5
Kevin Cardwell, president, CESI

Information Systems Security

Understand the broad spectrum of information systems security and cybersecurity. Our specialized courses cover network security, cryptography, database and network risk management, and regulatory policies. Theoretical security models, combined with state-of-the-art examples, give you a comprehensive overview of the field in this 6-course (24-unit) certificate.

Required Courses

+ X 420.1 Fundamentals of Information Systems Security
X 420.2 Information Systems Security Risk Management
X 420.3 Information Systems Infrastructure Security Management
X 420.5 Network Operating System and Database Security

In addition, choose 8 units of electives.

Defined Elective Courses (Select 2 Courses)

+ X 420.7 Information System Security Regulatory Compliance
X 420.8 Information System Security Lab (Offensive Tools)
+ X 420.9 Information System Security Lab (Defensive Tools)
X 420.11 Malware and Rootkits

+ Offered this quarter.

For More Information
et@uclaextension.edu | **(310) 825-4100** | *uclaextension.edu/computers*

Java Programming Series

Learn to use Java to develop software for web services, mobile applications, and distributed enterprise systems in this new 3-course (12-unit) sequential program.

+ X 418.85A Java Programming I
+ X 418.100 Java Programming II
+ X 418.104F Google Android Development

+ Also offered online this quarter.

For More Information
et@uclaextension.edu | **(310) 825-4100** | *uclaextension.edu/computers*

Linux/Unix Certificate

System users and designers learn the Linux/Unix operating system in this 20-unit certificate.

Required Courses

+ X 417.31 Introduction to Linux/Unix
X 417.31A Linux/Unix System Administration
X 417.39A Linux/Unix Shell Scripting

In addition, choose 8 units of electives.

+ Offered this quarter.

For Complete Details
et@uclaextension.edu | **(310) 825-4100** | *uclaextension.edu/et*

Java Programming

For a complete certificate description visit uclaextension.edu/computers. For information call (310) 825-4100 or email et@uclaextension.edu.

Java Programming I

X 418.85A Computer Science 4 units
Prerequisite: Requires computer work outside of class as well as a computer with any operating system that supports Java; familiarity with the operating system; and the ability to create files and folders, use an Internet browser and email, create zipped files to send as email attachments, and download software from the Internet for class and programming assignments. *Enrollment limited. For more information see page 65.*

Reg# 265548CA
Fee: $950
Westwood: B06 1010 Westwood Center
Wed 6:30-10pm, Jun 22-Aug 24, 10 mtgs
Amir Hallajpour, *for credits see page 65.*

Reg# 265599CA
Fee: $950
Westwood: 203 Extension Lindbrook Center
Thu 7-10pm, Jun 23-Sep 8, 12 mtgs
Charles Harless, *for credits see page 65.*

Java Programming I

X 418.85A Computer Science 4 units
Prerequisite: Requires computer work outside of class as well as a computer with any operating system that supports Java; familiarity with the operating system; and the ability to create files and folders, use an Internet browser and email, create zipped files to send as email attachments, and download software from the Internet for class and programming assignments. *Enrollment limited. For more information see page 65.*

Reg# 265547CA
Fee: $950
Jun 22-Aug 24
Amir Hallajpour, *for credits see page 65.*

Java Programming II

X 418.100 Computer Science 4 units
Java Programming II examines more advanced object-oriented programming; collections and generics; graphical user interface design; threading and asynchronous processing; and files, streams, database usage, and object serialization. Students learn to develop platform/framework neutral applications for desktop, web, and mobile situations. On course completion, students are able to choose the appropriate Java technology to solve their business problem; develop complex GUI interfaces using Swing; connect to a database and execute SQL queries; and write efficient and maintainable Java code. *For technical requirements see page 4. Prerequisite:* X418.85A Java Programming I *Required course in the Java Programming Series. Enrollment limited.*

Reg# 265541CA
Fee: $950
Westwood: 219 UCLA Extension Bldg.
Wed 6:30-10pm, Jun 22-Aug 24, 10 mtgs
Tam Nguyen, MS, senior software engineer, Trinet

Java Programming II

X 418.100 Computer Science 4 units
Prerequisite: X418.85A Java Programming I *Enrollment limited. For more information see page 67.*

Reg# 265543CA
Fee: $950
Jun 22-Aug 24
Fred Savage, *for credits see page 67.*

Google Android Development

X 418.104F Computer Science 4 units
Android is a software platform for mobile devices widely used in smart phones and tablets. Android is based on the Linux kernel and currently developed by Google. This course is a hands-on introduction to writing applications for Android smart phones and tablets. The course provides developers unfamiliar with the Android application development environment the knowledge and skills to develop Android applications using the Android SDK and Android Studio development platform. The course will focus on basic Android program structure, language syntax, and object-oriented concepts. Students will build Android applications, learning how to create user interfaces, handle data, use Android library code, and debug programs. *For technical requirements see page 4. Prerequisite:* Experience in Java programming and the use of Android Studio; or consent of instructor. *Required course of the Mobile Applications Development Series. Enrollment limited.*

Reg# 265341CA
Fee: $950
Jun 22-Aug 24
Laurie Lasslo, PhD, Genetics; MS, Computer Science; senior software engineer, Hewlett-Packard.

Course Icons Provide Information At-a-Glance

- Online course
- Textbook required
- UC credit; may be transferable to other colleges and universities
- Meets during daytime hours
- ◇ Credit course may not be taken passed/not passed

Linux/Unix

For a complete certificate description visit uclaextension.edu/computers. For information call (310) 825-4100 or email et@uclaextension.edu.

For online course technical requirements see page 4.

Introduction to Linux/Unix

X 417.31 Management 4 units

This hands-on laboratory course covers a rich mix of Linux and Unix distributions and features. The Red Hat Linux family is the centerpiece. Both its source-compatible enterprise-class CentOS cousin and the upstream Fedora feeder project are natively installed on classroom workstations. In addition, so are several Linux versions as virtual machines, and Ubuntu Linux and FreeBSD Unix are used remotely. Apple OS X is demonstrated for comparison. A from-scratch installation showcases the operating system's role in the context of firmware, bootloader, system programs, and application programs. We study Linux's multiple character and graphical user interface offerings, with deep emphasis on the bash shell and the X window system. Under bash, we learn the mainstream commands and the built-in shell script programming language. The course also runs two different window managers (GUIs). We learn the fork/exec process spawning mechanism by writing a minimalistic shell. Students study the Linux-default ext filesystem in detail, plus the standard file hierarchy built upon it. Plus, they learn to compile simple programs as a method to install open-source applications, as well as high-level, package-based remote installs. This course prepares students for separate specialized follow-on courses in Linux/Unix system administration, networking, and shell scripting. *Prerequisite:* Basic computer experience on any system. Programming experience is helpful, but not required. *Required course in the Linux/Unix Certificate Program Enrollment limited. Internet access required to retrieve course materials.*

Reg# 265416CA
Fee: $950
Westwood: 219 UCLA Extension Bldg.
Wed 6:30-10pm, Jun 22-Aug 24, 10 mtgs
David B. Morgan, MBA, principal, Skydesign Tech Service

Mobile Application Development

For a complete certificate description visit uclaextension.edu/computers. For information call (310) 825-4100 or email et@uclaextension.edu.

iPhone and iPad Application Programming

X 418.104D Management 4 units

iPhones and iPads are everywhere. Learn the fundamentals for developing on this popular platform. Instruction provides an overview of the Objective-C language and progresses into the details of the UIKit, as well as several other frameworks essential for development on the iPhone and iPad platforms. Beginning with fundamental objects, such as buttons and text fields, students then learn about views, view controllers, navigation controllers, and other complex subjects. Students also learn about quartz graphics, multimedia, mapping, and GPS functionality, as well as using the accelerometer. The course also introduces the newest APIs from the latest production SDK from Apple. *Prerequisite:* Knowledge of at least one object-oriented programming language: C/C++, C#, Java, or Objective-C. *Enrollment limited. All assignments require an Apple Macintosh computer. Students may wish to bring a laptop to class.*

Reg# 265600CA
Fee: $950
Westwood: 214 Extension Lindbrook Center
Wed 6:30-10pm, Jun 22-Aug 24, 10 mtgs
David Henson, *for credits see page 65.*

Google Android Development

X 418.104F Computer Science 4 units

Prerequisite: Experience in Java programming and the use of Android Studio; or consent of instructor. *Required course of the Mobile Applications Development Series. Enrollment limited. For more information see page 67.*

Reg# 265341CA
Fee: $950
Jun 22-Aug 24
Laurie Lasslo, *for credits see page 67.*

Intermediate Google Android Development

X 418.104G Computer Science 4 units

The Intermediate Android course continues the Google Android Development (Introduction to Android). This course will cover developing Android User Interfaces using Android Fragments, multiple techniques for retrieving and handling information from the web in android apps, background threading techniques, notifications, broadcast receivers and long running services. Students will be asked to develop a project that uses the concepts examined in the course. *For technical requirements see page 4. Prerequisite:* X 418.104 Google Android Development and understanding of Java, or consent on instructor. *Required course in the Mobile Applications Development Series. Enrollment limited.*

Reg# 265342CA
Fee: $950
Jun 23-Aug 25
Laurie Lasslo, *for credits see page 67.*

Operating System Administration

For a complete certificate description visit uclaextension.edu/computers. For information call (310) 825-4100 or email et@uclaextension.edu.

For online course technical requirements see page 4.

Introduction to Linux/Unix

X 417.31 Management 4 units

Prerequisite: Basic computer experience on any system. Programming experience is helpful, but not required. *Required course in the Linux/Unix Certificate Program Enrollment limited. Internet access required to retrieve course materials. For more information see page 68.*

Reg# 265416CA
Fee: $950
Westwood: 219 UCLA Extension Bldg.
Wed 6:30-10pm, Jun 22-Aug 24, 10 mtgs
David B. Morgan, *for credits see page 68.*

Network Communications with TCP/IP

X 417.96 Management 4 units

Prerequisite: While no experience in data communications is needed, students should have a good background in computing with experience installing and operating Microsoft Windows or Unix (such as Solaris or Linux). *Required course in the Systems Analysis certificate. Enrollment limited. Internet access required to retrieve course materials. For more information see page 65.*

Reg# 265272CA
Fee: $950
Westwood: 215 UCLA Extension Bldg.
Thu 6:30-10pm, Jun 23-Aug 25, 10 mtgs
Fred M. Zerez, *for credits see page 65.*

Network Communications with TCP/IP

X 417.96 Management 4 units

Prerequisite: While no experience in data communications is needed, students should have a good background in computing with experience installing and operating Microsoft Windows or Unix (such as Solaris or Linux). *Enrollment limited. For more information see page 65.*

Reg# 265566CA
Fee: $950
Jun 20-Sep 5
Irfan Ahmed, global cyber security consultant, HP

Microsoft SQL Server Administration (Using MS SQL Server 2012)

X 418.694 Management 2.4 units

Includes instructor's materials and instructions on obtaining Microsoft DreamSpark access.
Prerequisite: Familiarity with SQL. *Required course in the Operating Systems Administration certificate program. Enrollment limited; enrollment prior to the first class required. For more information see page 65.*

Reg# 265602CA
Fee: $950
Westwood: 213 UCLA Extension Bldg.
Sat 9:30am-4:30pm, Aug 6-Sep 10, 6 mtgs
David Henson, *for credits see page 65.*

Fundamentals of Information Systems Security

X 420.1 Computer Science 4 units

Replaces X 417.71 Introduction to Information Security Concepts.
Required course in the Information Systems Security and Systems Analysis certificate programs. Enrollment limited. For more information see page 66.

Reg# 265565CA
Fee: $950
Jun 20-Sep 5
Irfan Ahmed, global cyber security consultant, HP

Reg# 265338CA
Fee: $950
Jun 21-Aug 23
Vincent LeVeque, *for credits see page 66.*

Systems Analysis

For a complete certificate description visit uclaextension.edu/computers. For information call (310) 825-4100 or email et@uclaextension.edu.

For online course technical requirements see page 4.

Fundamentals of Software Development

X 414.20 Management 4 units

Prerequisite: Required course in the Systems Analysis Certificate. *Enrollment limited. This is not a laboratory course. Requires computer work outside of class. For more information see page 64.*

Reg# 265339CA
Fee: $950
Westwood: 131 Extension Gayley Center, 1145 Gayley Ave.
Mon 6:30-9:30pm, Jun 20-Sep 19, 12 mtgs (no mtg 7/4 & 9/5)
Keith V. Jefferies, *for credits see page 64.*

Fundamentals of Software Development

X 414.20 Management 4 units

Required course in the Systems Analysis Certificate. Enrollment limited. For more information see page 64.

Reg# 265340CA
Fee: $950
Jun 20-Sep 5
Keith V. Jefferies, *for credits see page 64.*

Relational Database Management

X 414.51 Management 4 units

Microsoft Visio Professional available to students.
Required course in the Systems Analysis Certificate. Enrollment limited. For more information see page 64.

Reg# 265258CA
Fee: $950
Jun 22-Aug 24
Ronald G. Landers, *for credits see page 64.*

Using Structured Query Language (SQL) Syntax

X 414.61 Management 4 units

Prerequisite: Basic knowledge of Windows is recommended. *Enrollment limited. For more information see page 64.*

Reg# 265424CA

Fee: $1,050

Westwood: 203 Extension Lindbrook Center

Tue 6:30-10pm, Jun 21-Aug 23, 10 mtgs

***Richard Patlan**, for credits see page 64.*

Using Structured Query Language (SQL) Syntax

X 414.61 Management 4 units

Prerequisite: Basic knowledge of Windows is recommended. *Enrollment limited. For more information see page 64.*

Reg# 265423CA

Fee: $1,050

Jun 20-Aug 22

***Richard Patlan**, for credits see page 64.*

Network Communications with TCP/IP

X 417.96 Management 4 units

Prerequisite: While no experience in data communications is needed, students should have a good background in computing with experience installing and operating Microsoft Windows or Unix (such as Solaris or Linux). *Required course in the Systems Analysis certificate. Enrollment limited. Internet access required to retrieve course materials. For more information see page 65.*

Reg# 265272CA

Fee: $950

Westwood: 215 UCLA Extension Bldg.

Thu 6:30-10pm, Jun 23-Aug 25, 10 mtgs

***Fred M. Zerez**, for credits see page 65.*

Network Communications with TCP/IP

X 417.96 Management 4 units

Prerequisite: While no experience in data communications is needed, students should have a good background in computing with experience installing and operating Microsoft Windows or Unix (such as Solaris or Linux). *Enrollment limited. For more information see page 65.*

Reg# 265566CA

Fee: $950

Jun 20-Sep 5

***Irfan Ahmed**, global cyber security consultant, HP*

Java Programming I

X 418.85A Computer Science 4 units

Prerequisite: Requires computer work outside of class as well as a computer with any operating system that supports Java; familiarity with the operating system; and the ability to create files and folders, use an Internet browser and email, create zipped files to send as email attachments, and download software from the Internet for class and programming assignments. *Enrollment limited. For more information see page 65.*

Reg# 265548CA

Fee: $950

Westwood: B06 1010 Westwood Center

Wed 6:30-10pm, Jun 22-Aug 24, 10 mtgs

***Amir Hallajpour**, for credits see page 65.*

Reg# 265599CA

Fee: $950

Westwood: 203 Extension Lindbrook Center

Thu 7-10pm, Jun 23-Sep 8, 12 mtgs

***Charles Harless**, for credits see page 65.*

Java Programming I

X 418.85A Computer Science 4 units

Prerequisite: Requires computer work outside of class as well as a computer with any operating system that supports Java; familiarity with the operating system; and the ability to create files and folders, use an Internet browser and email, create zipped files to send as email attachments, and download software from the Internet for class and programming assignments. *Enrollment limited. For more information see pag 65.*

Reg# 265547CA

Fee: $950

Jun 22-Aug 24

***Amir Hallajpour**, for credits see page 65.*

Fundamentals of Information Systems Security

X 420.1 Computer Science 4 units

Replaces X 417.71 Introduction to Information Security Concepts.

Required course in the Information Systems Security and Systems Analysis Certificate. Enrollment limited. For more information see page 66.

Reg# 265565CA

Fee: $950

Jun 20-Sep 5

***Irfan Ahmed**, global cyber security consultant, HP*

Reg# 265338CA

Fee: $950

Jun 21-Aug 23

***Vincent LeVeque**, for credits see page 66.*

Web Technology

For a complete certificate description visit uclaextension.edu/computers. For information call (310) 825-4100 or email et@uclaextension.edu.

For online course technical requirements see page 4.

HTML and CSS

X 418.102AB Management 4 units

Anyone who does web work needs to understand HTML (HyperText Markup Language), its close cousin XHTML (Extensible HyperText Markup Language), and CSS (Cascading Style Sheets). They provide the foundation on which most web pages are built. HTML labels kinds of information and CSS specifies how that information will look. Using step-by-step code-writing exercises, students learn how HTML and CSS work together and create web pages in the process, starting with the very basics up to an intermediate level. Topics include tags, links, forms, color, inserting images and Flash; lists; and tags; how CSS is applied to HTML; using them together for styling appearance and page layout; text styling; IDs; classes and pseudo-classes; the box model; the emergence of HTML 5; and much more. No software is needed for the course and there are no prerequisites, other than knowing the basics of how to use a computer and having a connection to the web. *For technical requirements see page 4. Enrollment limited.*

Reg# 265249CA

Fee: $950

Jun 21-Aug 23

***Dan Hitchcock Vaughan**, for credits see page 64.*

Website Construction with Adobe Software: Dreamweaver, Flash, and Photoshop

X 418.102A Management 4 units

Adobe Creative Cloud is used.

Part of Applications Programming certificate. Enrollment limited. Internet access required to retrieve course materials. For more information see page 64.

Reg# 265248CA

Fee: $950

Westwood: B06 1010 Westwood Center

Tue 6:30-10pm, Jun 21-Aug 23, 10 mtgs

***Dan Hitchcock Vaughan**, for credits see page 64.*

Mobile Application Development Series

Learn how to program applications for mobile devices, including Apple iPad and iPhone, and Google Android systems in our new 3-course (12-unit) sequential program.

+ X 418.104D iPhone and iPad Application Programming
+ X 418.104F Google Android Development
+ X 418.104G Intermediate Google Android Development

+ Offered this quarter.

For More Information

et@uclaextension.edu | **(310) 825-4100** | *uclaextension.edu/computers*

Introduction to Adobe Dreamweaver

X 418.62A Management 4 units

Adobe Creative Cloud Software will be used.

Dreamweaver is a powerful website design and production package and the leading software for creating and managing web pages and websites. In this hands-on course, students construct, modify, and upload simple websites as they learn methods for web page composition and formatting using cascading style sheets (CSS). Instruction also covers how to insert graphics, video, Flash, links, JavaScript, and Spry widgets and effects. Other topics include asset management, templates, library items, pop-up menus, Flash rollovers, framesets, forms, and tables. *Prerequisite:* Students must have a solid understanding of Windows. No prior knowledge of Dreamweaver or HTML is required. Owning the software is not necessary to take the course. *Required course in the Web Technology Series. Enrollment limited. Internet access required to retrieve course materials.*

Reg# 265250CA

Fee: $950

Westwood: B06 1010 Westwood Center

Thu 6:30-10pm, Jun 23-Aug 25, 10 mtgs

***Dan Hitchcock Vaughan**, for credits see page 64.*

Enroll Early & Save

Use discount code **S2016** at checkout to save 10% on most courses.

It's that simple. But hurry, the discount ends May 20.

uclaextension.edu/discounts

Early enrollment discount cannot be combined with other discounts; code is case sensitive.

Electives

For information email et@uclaextension.edu or call (310) 825-4100.

The following courses may qualify as electives for any of the certificates and sequential programs in computer science and information systems upon approval by the department.

For online course technical requirements see page 4.

Advanced Structured Query Language (SQL) Syntax

X 414.65 Management 4 units

Structured Query Language (SQL) is an American National Standards Institute (ANSI) computer language for accessing and manipulating database systems. It works with such database programs as MS Access, DB2, Informix, MS SQL Server, Oracle, and Sybase. Designed for those with some knowledge of SQL, this hands-on course covers advanced SQL statements used in inserting, retrieving, and updating data in a database. Students learn how to use advanced features of SQL commands, including operators such as IN, AND, OR, BETWEEN, LIKE, DISTINCT, AGGREGATE, CONCAT, SUBSTRING, HAVING and others. In addition, instruction covers advanced usage of table joins; subqueries; if and case statements; and cast and convert statements, as well as stored procedures, triggers, functions, and cursors. You also learn how to stream text into a field, retrieve and send results in email, create search functions using full text index, and create pivot tables with hyperlinks. *Prerequisite:* X 414.61 Using Structured Query Language (SQL) Syntax; some experience in SQL; or consent of instructor. *Enrollment limited.*

Reg# 265422CA

Fee: $1,050

Jun 22-Aug 24

***Richard Patlan**, for credits see page 64.*

Map Out a Better Future

With UCLA Extension's GIS & Geospatial Technology Certificate Program

As location-aware technologies become more prevalent, the need for employees with an in-depth understanding of geographic information systems (GIS) is growing along with it.

Created in collaboration with the UCLA Department of Geography, this **1-year online program** will give you the conceptual and practical knowledge to apply GIS and mapping in the workplace.

Required Courses

+ GEOG XL 7: Introduction to GIS
- GEOG XL 168: Intermediate GIS
- GEOG XL 170: Advanced GIS
+ GEOG XL 167: Cartography
+ GEOG XL 173: GIS Programming

Who Should Apply?

No prior GIS experience is required. The certificate program is ideal for both early-career and mid-career professionals. Courses will equip students with the ability to leverage the power of GIS and geospatial technology in the workplace.

Example of electoral map.

+ Offered this quarter.

For more information, visit *uclaextension.edu/GIS*; or contact us at *geospatial@ucla.edu* or **(310) 818-3671**.

Agile Project Management I (Hybrid)

X 418.31C Management 4 units

This course is first in a series of two courses that provide thorough exposure to Agile and Lean methods in software, product development, and other high-tech projects. The series is invaluable for those transitioning from traditional to Agile and Lean methods or are interested in bringing continuous improvement culture in existing Agile/Lean implementations. This course covers SCRUM and Kanban, two key Agile/Lean methods popular today for enabling fast iterative delivery, teamwork, collaboration, and continuous improvement. Explore how Agile and Lean methods are different than traditional techniques of managing projects. Through a real and intensive class project, you also explore Agile methods hands-on while learning virtual team collaboration and an online tool for leading Agile projects. *For technical requirements see page 4. Enrollment limited. Internet access required to retrieve course materials.*

Reg# 265421CA
Fee: $950
Classroom meetings:
Westwood: 213 Extension Lindbrook Center
Wed 6:30-10pm, Jun 22; Jul 6 & 20; Aug 3 & 17
Online sessions:
Wed Jun 29; Jul 13 & 27; Aug 10 & 24

Rashed Iqbal, *for credits see page 65.*

Agile Project Management I

X 418.31C Management 4 units

Enrollment limited to 25 students. For more information see page 70.

Reg# 265273CA
Fee: $950
Jun 25-Aug 27

Sajid Ali, MS, PMI-ACP, senior product manager, CoreLogic

Python Programming I

X 418.104 Computer Science 4 units

Python is a high-level, dynamically typed, and portable programming language that excels when the cost of software development outweighs performance considerations. Python covers similar territory as Perl and is similarly an open-source product, but it is considered easier to learn, write, and maintain. NASA, Industrial Light and Magic (ILM), Honeywell, and many other companies all use Python to handle jobs for which classical programming languages are not well-suited. This course introduces Python and its libraries as a general programming environment, then applies Python to real-world problems, such as website development, database access, text processing, XML editing, GUI development, and system administration. *For technical requirements see page 4. Prerequisite:* Programming Experience or consent of instructor. *Enrollment limited.*

Reg# 265546CA
Fee: $950
Jun 22-Aug 24

Amir Hallajpour, *for credits see page 65.*

Programming Microsoft ASP.NET MVC Applications

X 418.735DA Management 4 units

DreamSpark access is available.

The Model-View-Controller (MVC) architectural pattern separates an application into three main components: the model, the view, and the controller. The ASP.NET MVC framework provides an alternative to the ASP.NET Web Forms pattern for creating MVC-based web applications. The ASP.NET MVC framework is a lightweight, highly testable presentation framework that (as with Web Forms-based applications) is integrated with existing ASP.NET features, such as master pages and membership-based authentication. This online course is designed to teach existing ASP.NET Web Forms developers how to expand their skills into the ASP.NET MVC model environment. All key aspects of the ASP.NET MVC environment are covered. The course begins by covering the underlying architecture and runtime environment, as well as the MVC pattern of an ASP.NET MVC application. The material then builds to include all key aspects, such as Controllers (in-depth), Views (in-depth), Models (in-depth), Routing, Error Handling, Data Entry and Data Validation, AJAX, Testability and Unit Testing, and Customizing ASP.NET MVC environment. *For technical requirements see page 4. Prerequisite:* MGMNT X 418.735D Programming in C# Developing Web Applications Platform II, or prior ASP.NET programming experience *Enrollment limited to 25 students. All development is done using Visual Studio and the .NET framework, and either C# or Visual Basic .NET.*

Reg# 265260CA
Fee: $950
Jun 22-Aug 24

Ronald G. Landers, *for credits see page 64.*

C++ Fundamentals for Visual Studio .NET

X 418.735B Management 4 units

(Includes instructor's materials and instructions on obtaining Windows 7 operating system.)

This course provides new developers, as well as application developers unfamiliar with the C++ language, with the knowledge and skills to develop C++ applications using the Microsoft .NET platform. Focusing on C++ program structure, language syntax, and object-oriented concepts, students build projects using console applications, Windows forms, dialog boxes, controls, and various graphical output techniques. Upon completing the course, students should be able to list the major elements of .NET framework; analyze the basic structure of a C++ program; and use the IDE to debug, compile, and run simple applications. Beyond user-friendly design, this course introduces field-tested, programmer-friendly, and customer-friendly techniques. *For technical requirements see page 4. Enrollment limited.*

Reg# 265271CA
Fee: $950
Jul 6-Aug 31

Prentiss H. Knowlton, PhD, senior systems engineer, QSS

JavaScript

X 418.88B Management 4 units

Web users today expect sites to provide dynamic user interfaces, fast response times, and advanced features. JavaScript delivers that, which is why JavaScript has become such an important programming language for web developers. This course benefits anyone who is involved with web development, including server-side programmers who use ASP, JSP, PHP, or other languages, and web designers who use XHTML and CSS and would like to build rich Internet applications (RIAs) with JavaScript and DOM scripting. Students learn XHTML and CSS (Cascading Style Sheets) skills and learn how to use Firefox and its free Firebug extension to debug JavaScript applications. Additionally, students learn how to use arrays, functions, regular expressions, exception handling, libraries, and user-defined objects. The course provides an introduction to closures, recursion, prototype-based inheritance, extension of built-in JavaScript objects, and an object-oriented approach to data validation that students can use as a model for their own applications. Students also learn how to use DOM Scripting to build applications that run slide shows, do image rollovers, use dropdown menus, rotate headlines, sort the data in tables, and provide animation. The course also covers how to use the objects, methods, and properties of a web browser and how to use third-party libraries, such as jQuery and Dojo. *For technical requirements see page 4. Prerequisite:* Basic knowledge of HTML, or consent of instructor. *Enrollment limited.*

Reg# 265269CA
Fee: $950
Jul 6-Aug 31

Prentiss H. Knowlton, PhD, senior systems engineer, QSS

Introduction to PHP with MySQL

X 419.39 Management 4 units

This course provides an introduction to the fundamentals of the PHP scripting language that dynamically controls the presentation of web pages based on user input and data stored on a server. Students learn the basics of SQL using the MySQL database; how to create, access, and manipulate MySQL data from within a PHP program; and how to set up and use HTML forms to gather input from a web page user. Special topics include file handling, how to handle data in a grid-like (spreadsheet) format in a web page, PHP security, and a brief overview of using AJAX with PHP. *For technical requirements see page 4. Prerequisite:* Basic knowledge of HTML, or consent of instructor. *Enrollment limited. Students must upload web pages to the provided PHP server, as well as use a plain-text editor.*

Reg# 265270CA
Fee: $950
Jul 6-Aug 31

Prentiss H. Knowlton, PhD, senior systems engineer, QSS

Course Icons Provide Information At-a-Glance

- Online course
- Textbook required
- Meets during daytime hours
- ◇ Credit course may not be taken passed/not passed