

# Computers & Information Systems

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For courses in

Computers in Architecture and Interior Design

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Print and Graphic Communication Design

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Motion Graphics and Interdisciplinary Design

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Computers in Education

See **EDUCATION**, page 67.

For short courses in

Engineering and Technical Management

See **ENGINEERING & TECHNICAL MANAGEMENT**, page 79.

## On-Site Courses and Programs



This on-site option provides your organization with many benefits, including custom-tailored curricula to suit your specific needs, access to our pool of high-quality instructors, and convenient training for your employees that is more cost-effective than sending them to courses off-site.

To discuss the possibility of an on-site offering contact:

**Frank E. Burris**, Director,  
Department of Engineering,  
Information Systems and  
Technical Management  
UCLA Extension  
10995 Le Conte Ave., Suite 540  
Los Angeles, CA 90024-1333  
**(310) 206-1543**

Fax **(310) 206-2815**

Email [fburris@uclaextension.edu](mailto:fburris@uclaextension.edu)

Almost all of the courses—as well as sequential and certificate programs—offered by the Department of Engineering, Information Systems and Technical Management can be brought to your workplace on a contract basis.

## Foundation Courses

If you are a new student hoping to build your computer and information systems expertise, we recommend these five foundation courses as starting points.

### **X 418.60 Introduction to Client/Server Computing**

This course provides an introduction to client/server computing as well as the benefits and advantages client/server computing offers over time-sharing and networked PCs.

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### **X 414.20 Business Programming and Software Development**

This comprehensive course helps students to build proficiency in computer programming and software development for business.

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### **X 418.85A Fundamentals of Programming Using Java: Hands-On**

This hands-on course stresses practical Java programming skills and prepares students for follow-on Java courses.

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### **X 414.51 Relational Database Management**

This course provides an overview of relational database technology, data modeling, SQL, data normalization, and the translation of logical designs to physical storage structures.

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### **X 417.10 Introduction to Data Communications**

This course examines the evolution of the data communications discipline as well as applications areas and basic networking techniques.

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For more information about these courses call **(310) 825-4100**.

# Certificate and Sequential Programs



UCLA Extension organizes a certificate program when a comprehensive, integrated, and sequential set of courses combines to provide education in a specialized field or technology.

A certificate program is a sequence of courses within a specialized field leading to the attainment of a specified set of competencies or learning objectives. It meets guidelines developed by the Academic Senate of the University of California. Certificate programs in the University of California system require a minimum of 140 hours of coursework.

Most individuals who are interested in our certificate programs are motivated by a desire for career advancement. Others simply wish to gain or enhance their technical competency in a particular area.

These students might be interested in advanced degrees, if available, although the focus of some certificate programs may be too narrow or too new for degree status. Many employers, however, recognize the value of specialized certificate programs to their corporate goals and encourage employee participation.

In addition to formal certificate programs that undergo rigorous academic approval, sequential programs are developed and administered to provide meaningful sequences of study in response to the marketplace. Typically, a sequential program is shorter than a certificate program and adds competencies in a new or emerging technology to already existing skills.

## PROGRAM REQUIREMENTS

Most certificate programs typically are structured into:

Required courses that provide the student with “core” fundamental concepts and techniques associated with a chosen specialization

Elective courses that best match students’ needs for applying the fundamentals to their specific situations

Successful completion of a certificate program requires a grade of “C” or better in each required and elective course.

In addition to the required courses and electives, certificate programs often include prerequisites. These courses address the needs of those who might be missing critical skills necessary to embark on a certificate program.

Qualified individuals, such as those with at least a bachelor’s degree or equivalent experience in appropriate disciplines, can skip the prerequisites. The goal is to allow individuals with varying educational backgrounds to be able to successfully complete the program.

In recent years, changes in information technology have occurred at a pace that dictates considerable flexibility in the allowed elective courses for different certificate programs. Descriptions of our programs include recommended electives; however, students may substitute electives to suit their specific educational needs and objectives after obtaining permission of the department (see below).

## CURRENT OFFERINGS

An application for candidacy (with a \$125 application fee) must be submitted prior to completing the third course in the following programs:

### Professional Designation in Systems Analysis

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### Professional Designation in Applications Programming: C# .NET Specialization

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### Professional Designation in Applications Programming: Java Specialization

Page 52.

### Professional Designation in Database Management: Microsoft SQL Server, Microsoft Access, or Oracle Specializations

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### Professional Designation in Data Communications

Page 57.

### Professional Designation in Operating System Administration

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An application for candidacy (with a \$75 application fee) must be submitted prior to completing the second course of the following programs:

### Certificate Program in C/Unix

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### Sequential Program in Information Security

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### Sequential Program in Cisco

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### Sequential Program in Web Technology: Client-Side Applications or Server-Side Development Specializations

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For more information call (310) 825-4100 or visit [uclaextension.edu](http://uclaextension.edu).

# Alternate Electives

## For Certificate and Sequential Programs

Although not part of the certificate or sequential programs listed above, the following courses may be substituted as electives for certain programs if approved by a departmental advisor.

### OFFERED THIS QUARTER

#### X 418.01 Managing Knowledge within Your Organization

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#### X 418.02 Fundamentals of Business Intelligence

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#### X 418.145 Introduction to the Deployment of RFID Technology

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#### X 418.108 Cell Phone Game Programming in C/C++ with BREW

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#### X 418.737A Object-Oriented Programming for the Visual Studio .NET Platform

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#### X 418.737B Special Topics in the Visual Studio .NET Platform (The Base Class Library in .NET)

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#### X 418.104 Introduction to PERL with Applications to CGI Programming

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#### X 417.49 Wireless Technology and Application for the Office

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#### X 417.92 Cisco Firewall and IPSec Boot Camp

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#### X 417.91A CompTIA Network+ Boot Camp

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#### X 417.95D Implementing and Managing Exchange 2003

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#### X 417.29E The Open Source Commercial Webserver: LAMP Setup and Configuration

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#### X 418.102E CSS (Cascading Style Sheets): Mastering a New Level of Page Layout

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#### X 418.102D Introduction to Flash Actionscript 2.0/3.0

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#### X 418.24 Information Technology Management I

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# Information Systems and Management

For more information call (310) 825-4100.  
To enroll call (310) 825-9971 or (818) 784-7006.

## Professional Designation in Systems Analysis

A systems analyst evaluates and solves business and information systems problems by collecting data, designing solutions, and coordinating the implementation and installation of systems.

This 32-unit program consists of courses in requirements analysis, design, development, installation, and operation, as well as online systems, data communications, testing, and documentation.

### Required Courses (24 units):

X 414.20*+	Business Programming and Software Development (4 units)
X 417.10*	Introduction to Data Communications (4 units)
X 414.51*	Relational Database Management (4 units)
X 417.71*	Introduction to Information Security (4 units)
X 418.33*	Data Modeling and Analysis (4 units)
X 418.60*	Introduction to Client/Server Computing (4 units)

### Recommended Electives (minimum of 8 units):

X 417.96	Network Communications with TCP/IP (4 units)
X 414.56	Advanced Database Management (4 units)
X 418.30	Tools and Techniques of Information Systems Analysis and Design (4 units)
X 418.31*	Software Project Management (2 units)
X 418.74*	Object-Oriented Analysis Methods and the Unified Modeling Language (UML) (3 units)

\* Offered this quarter.

+Offered online this quarter.

For more information or to substitute electives call (310) 825-4100.

### NEW COURSE

#### ◇ Managing Knowledge within Your Organization

X 418.01 Management 4 units \$525  
Most organizational knowledge is stored in unstructured data files, such as documents, spreadsheets, pictures, videos, audios, etc. However, most decision makers in organizations do not have access to such information and spend time either searching for it or duplicating it. IBM estimates that 85 percent of data in organizations is unstructured, out of which 50 percent is duplicated. While search engines, such as Yahoo and Google, allow their users to search for any information globally, decision makers cannot search for information within their own organizations. This course provides insight into cataloging and storing such data types into content management systems, capturing associated metadata, and utilizing appropriate search engines to sift through the information and retrieve the right content based on the search criteria. Tool selection is covered, including content management, search engines, database management systems, and portals. The course also focuses on how to perform business intelligence and rule-based analytics across structured and unstructured data types.

### Reg# S7942B

UCLA: 5128 Math Sciences  
Wednesday, 6:30-10pm,  
January 10-March 14, 10 mtgs.

Majid Abai, BS, Database Architect, Magisoft, Inc.

### NEW COURSE

#### ◇ Fundamentals of Business Intelligence

X 418.02 Management 2 units \$525  
Business intelligence (BI) has become a key component of our business world. By extracting valuable data, analyzing business trends, and making accurate forecasts, business intelligence enables organizations to make well-informed decisions. This course provides an

introduction to BI, from project planning to solution implementation. Designed for those with a need to understand and experience business intelligence, it helps students master the concepts of BI, explains how to successfully implement BI, and offers a true hands-on experience with BI software. Topics include BI overview, project planning and development, business data modeling, data warehouse design and tuning, BI software review, OLAP technology, and metadata concepts and creation. The course also includes an interactive project creation using MicroStrategy software and a workshop in which students can experience BI hands-on. Anyone with a need to understand and implement BI solutions can benefit from this course, including executives (such as IT managers, CIOs, CFOs, actuaries, and business analysts) and IT developers (such as architects, DBAs, and programmers). *Enrollment limited; enrollment prior to the first class required.*

### Reg# S7944B

UCLA: A1-241 School of Public Health  
Monday, 6:30-10pm,  
March 5-April 2, 5 mtgs.

Raffi Sarafian, MS, Senior Consultant, MicroStrategy

### NEW COURSE

#### ◇ Software Engineering and Application Development Internship

X 418.14A Management 4 units \$475  
The purpose of this internship is to provide real-world experience to those who have taken programming courses yet have not worked in the IT industry. The interns, along with local or remote team members, work on actual client-provided comprehensive software projects similar to such world-class websites and distributed applications as eBay, MySpace, and other commercial sites. Work is done on-site, remotely, or in combination. Although every attempt is made to work around each intern's schedule, a minimum commitment of 30 hours a week is required. Each student is evaluated on a biweekly basis and his/her progress reported to UCLA Extension. A letter grade and credit are awarded at the conclusion of the internship. *Prerequisite:* Programming experience or consent of instructor. *Enrollment limited.*

### Reg# S8149B

Los Angeles: Location to be announced  
For dates call Terry Werner at (310) 825-4100  
or email [twerner@uclaextension.edu](mailto:twerner@uclaextension.edu).

Khosrow (Koz) Khosravani, MA, Instructor, Next-Generation Mobile Training

#### ◇ Software Project Management

X 418.31 Management 2 units \$400  
Software project managers and team members are critical to the success of today's organizations. The primary objective of this course is to help software project managers (and other project team members) successfully meet goals in software-intensive organizations. The secondary objective is to help organizations improve their software development process. Topics in this interactive course are correlated to both the capability maturity model (CMM) and PMI's project management body of knowledge (PMBOK). Topics include the software development process, organizational and individual communications, team leadership, project schedule planning, project tracking, software configuration management (SCM), software quality assurance (SQA), software scope management (SSM), priority management, software testing, CASE tools, post-project review, and software process improvement. Students are encouraged to apply the skills presented in this course to the project of their choice; teams from the same organization are encouraged to work together. While this is a non-lab-based course, Microsoft Project software is utilized for demonstrations and presentations. *Enrollment limited; enrollment prior to the first class required.*

### Reg# S5448B

UCLA: 5127 Math Sciences  
\* Saturday, 9am-5pm,  
January 13 & 20, 2 mtgs.

Khosrow (Koz) Khosravani, MA, Instructor, Next-Generation Mobile Training

#### ◇ Data Modeling and Analysis

X 418.33 Management 4 units \$525

This course provides a strategy for optimizing the implementation of business process reengineering, information management, and hardware/software technology. Concepts and techniques for building logical and physical information models are presented. Students are shown how an enterprise information model, when encapsulated within a four-to-six-month rapid and joint applications development (RAD/JAD) iteration cycle, can be used to design and build database applications that are extensive and integratable with the rest of the enterprise; implement product date/information management (PDM/PIM) and warehousing solutions, which are driven from a set of global and consistent information organization structures (IOSs) that define the business's objects, attributes, rules, and relationships; and define strategic directions that pertain to integrating existing databases, developing new applications, and re-hosting existing applications and databases. The semantics for relational as well as object-oriented information analysis are described, and students can pick their own language syntax to maximize use and adaptability within their own organization. Upon completion of the course, students should understand logical information model development, the ANSI/X3/SPARC three-schema concept, object analysis, data integrity, relational attribute migration and normalization, data modeling methodologies, computer system integration, data dictionaries, modeling tools, building and tuning a database, and U.S. and international data exchange standards.

### Reg# S4931B

UCLA: 5118 Math Sciences  
Tuesday, 6-9:30pm,  
January 9-March 13, 10 mtgs.

Harold Plain, PhD, consultant, MIS Consulting and Training

#### ◇ Using Microsoft Excel

X 418.37 Management 2 units \$425

Designed for those with little or no previous experience with PC-based spreadsheets, this course provides an introduction to the Microsoft Excel spreadsheet with an emphasis on solving business problems. Students experience all the major functions of this Windows-based tool, learn shortcuts and ways to accomplish the most common tasks in Excel, and build typical business-oriented spreadsheet applications. Topics include Excel basics, how to dress up your work, using interactive data to make your worksheet come alive, advanced Excel techniques, creating and using databases in Excel, and using Excel at the office and on the Internet/Intranet. *Prerequisite:* A solid understanding of PC compatibles and Windows operating systems. *Enrollment limited; enrollment prior to the first class required. Course materials are available both in class and via Internet.*

### Reg# S8137B

UCLA: 3260/3351 Franz Hall  
\* Saturday, 9am-5:30pm,  
January 13 & 20, 2 mtgs.

Arthur F. Schaak, BA, network consultant and author

#### ◇ Managing Data with Microsoft Excel

X 418.39 Management 2 units \$425

Even experienced Excel users may not have learned how to manage data efficiently and there are few courses to train those who use Excel to do their jobs more effectively. Within Excel, efficient management includes designing the layout of data on the worksheet and knowing which functions to use to take advantage of that layout. When users need data that is maintained elsewhere (e.g., a database with G/L information or HR management software), they frequently resort to copying from the source and pasting into an Excel worksheet. There are more effective ways to move data. This course provides advice on using Excel's data management to get your desired results. Topics include pitfalls in data management, managing data inside Excel, managing external data from inside Excel, and managing databases from inside Excel. *Prerequisite:* A basic understanding of Excel spreadsheet creation and use as the course significantly expands on this knowledge. *Enrollment limited; enrollment prior to the first class required. Course materials available via the Internet and in class.*

### Reg# S8138B

UCLA: 3260/3351 Franz Hall  
\* Saturday, 9am-5:30pm,  
January 27; February 3, 2 mtgs.

Arthur F. Schaak, BA, network consultant and author

#### ◇ Object-Oriented Analysis Methods and the Unified Modeling Language (UML)

X 418.74 Management 3 units \$525

This course provides an introduction to object-oriented analysis and its impact on software engineering, with emphasis on the emerging unified modeling language (UML). Object-oriented concepts are presented in a formal way, showing how those concepts are represented within the UML. Classes, objects, attributes, associations, generalization/specialization, and aggregation are examined, as well as how UML can be used to describe them. Constraints and their central role in UML are explained, along with business rules and their elucidation within UML. Techniques for dynamic modeling, including state transition diagrams and various kinds of interaction diagrams, such as sequence diagrams, collaboration diagrams, activity diagrams, etc., are discussed and illustrated with examples. The central role of use, case scenarios, and activity diagrams also are discussed, along with such various process hints as recursive software development and class/responsibility/collaboration cards. The course features many examples and the use of a commercial CASE tool. *Prerequisite:* No programming experience is assumed, although it is helpful to have worked on software engineering problems in real-world projects. *Enrollment limited; enrollment prior to the first class required.*

### Reg# S4932B

UCLA: 5117 Math Sciences  
\* Saturday, 9am-5pm,  
February 3, 10, 17 & 24, 4 mtgs.

Krishnamurthy Narayanaswamy, PhD, Principal Scientist, CS<sup>3</sup>

#### ◇ Information Technology Management I

X 418.24 Management 4 units \$525

*Prerequisite:* Background in the IT field or two years of management experience. *Required course in Sequential Program in Information Technology Management. Course materials are available both in class and via Internet. For more information see page 85.*

### Reg# S5446B

Westwood: 210 Extension Lindbrook Center  
Thursday, 6:30-10pm,  
January 11-March 15, 10 mtgs.

Alex Azmi, DPA, PMP, PE, Founder, CITM

## Online Course

For more information about online courses, including technical requirements and important enrollment information, see page 146.

#### ◇ Information Technology Project Management (Online)

X 418.26 Management 4 units \$625

*Prerequisite:* Background in IT field or two years of management experience. Familiarity and access to productivity software, including MS Project, Word, Excel, Powerpoint, and the Internet. *Required course in Sequential Program in Information Technology Management. Enrollment limited to 35 students. Textbooks available from ASUCLA at [www.uclaestore.com/uclagm](http://www.uclaestore.com/uclagm). For more information see page 85.*

### Reg# S5447B

January 10-March 28

Alex Azmi, DPA, PMP, PE, Founder, CITM

COURSES CONTINUE ON THE NEXT PAGE.

◇ This credit course not available on a passed/not passed basis

\* Course held during daytime hours

Use the QUICK ENROLL feature at [uclaextension.edu](http://uclaextension.edu)

TO ENROLL CALL (310) 825-9971  
or (818) 784-7006

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Each year the Department of Engineering, Information Systems, and Technical Management offers more than 200 courses in information

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Los Angeles, CA 90024-1333  
Email [fburriss@uclaextension.edu](mailto:fburriss@uclaextension.edu)

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You may be eligible to receive a 20-percent tax credit for the first \$10,000 of tuition paid for post-secondary academic credit or CEU-bearing course leading to the award of a certificate.

For more information see page 198.

## Client/Server Computing

### ◆ Introduction to Client/Server Computing

X 418.60 Management 4 units \$525  
Today's networks are now recognized as the most important component in information processing. This has led to a style of computing called client/server, where the power of an individual computer is only limited by the network to which it is connected. This course provides an introduction to client/server computing and discusses its benefits as well as the advantages it offers over time-sharing and networked PCs. Topics include the client/server model, standard middleware in client/server computing, remote procedure calls (RPC), security in a client/server model, and integration of existing environments.

#### Reg# S4924B

UCLA: 5117 Math Sciences  
Wednesday, 6:30-9:30pm,  
January 10-March 28, 12 mtgs.

**Douglas W. Caruthers**, Director, Custom Systems Engineering, Citicorp Development, Inc.

## Embedded Systems

### ◆ Introduction to the Deployment of RFID Technology

X 418.145 Management 4 units \$525  
This course presents the emerging technology known as radio frequency identification (RFID) that is being driven by mandates and standards that originated from the business practices of Wal-Mart and the U.S. Department of Defense. This technology is rapidly replacing consumer and business reliance on bar codes as the method of choice for product identification and tracking. The adoption of RFID extends the client-server model by encoding each product/item (client) with a unique Universal Product Code (UPC) that can be identified by a remote server. Within a single Wal-Mart store there may be millions of products with their own unique UPC. Limitations of RFID technology stem from numerous security and privacy issues that must be addressed before the technology becomes the standard for product identification and tracking. In this course, students are exposed to the processes, practices, and unique requirements involved in the global deployment of RFID technology in a diverse set of fields, such as electronic security and authentication, people and environmental monitoring, crowd control, electronic payment systems, industrial automation, and supply chain integration. Topics include the history of RFID and bar code technologies; system requirements for international deployment—software, hardware, and network models; international RFID standards; RFID deployment framework; cost-benefit analysis; mandates and vendor selection; and consumer security and privacy issues.

#### Reg# S4933B

UCLA: 5127 Math Sciences  
Tuesday, 6:30-9:30pm,  
January 9-March 27, 12 mtgs.

**Reginald L. Walker**, PhD, Engineer, Raytheon

## Programming Languages

For more information call (310) 825-4100.  
To enroll call (310) 825-9971 or (818) 784-7006.

### Professional Designation in Applications Programming: C# .NET Specialization

This 32-unit certificate program is designed for applications programmers—individuals who take the specifications provided by the systems analyst and design, test, and debug computer programs as needed to meet user requirements. While the systems analyst defines what needs to be done, the applications programmer decides how to do it.

Working with Microsoft's Visual Studio 2005, participants develop software solutions for Windows and web environments using the .NET framework and C# programming language. With classes taught by working professionals providing in-depth, real-world content, our classes provide the participant with the skills necessary to provide solutions using Microsoft's Visual Studio.

#### Program Prerequisites:

Participants who have no programming experience are required to take X 414.20\* Business Programming and Software Development. Participants who have no database background are required to take X 414.51\* Relational Database Management.

#### Required Courses (22 units):

- X 418.735\* C# Fundamentals for Visual Studio .NET Platform (4.5 units)
  - or
  - X 418.11 C# Programming (Online) (4.5 units)
  - X 418.735A Programming in C# .NET for Visual Studio .NET Platform (4.5 units)
  - X 418.737A\* Object-Oriented Programming for the Visual Studio.NET Platform (4.5 units)
  - X 418.735D\* Developing Web Applications with C# (4.5 units)
  - X 418.694A\* Programming Microsoft SQL Server (Using MS SQL Server 2005) (4 units)
- #### Recommended Electives (10 units):
- X 418.143 Software Engineering and .NET Development (4 units)
  - X 418.695 XML and SQL Server Database (4 units)
  - X 418.697\* C# Programming for the Microsoft SQL Server Database (Using MS SQL Server 2005) (2.4 units)
  - X 418.698 Microsoft SQL Server Reporting Services (2.4 units)
  - X 418.737B\* Special Topics in the Visual Studio .NET Platform (The Base Class Library in .NET) (4.5 units)

\* Offered this quarter.

To substitute electives or for more information, call (310) 825-4100.

### Professional Designation in Applications Programming: Java Specialization

This 32-unit certificate program is designed for applications programmers—individuals who take the specifications provided by the systems analyst and design, test, and debug computer programs as needed to meet user requirements. While the systems analyst defines what needs to be done, the applications programmer decides how to do it.

Using the Java programming language, participants learn how to create object-oriented, web services and embedded systems applications. Our Java classes focus on Internet development and portability, and provide the foundation for large-scale applications development.

#### Program Prerequisite:

Participants who have no database background are required to take X 414.51\* Relational Database Management.

#### Required Courses (20.5 units):

- X 418.85A\* Fundamentals of Programming Using Java: Hands-On (4 units)
- X 418.88A Scripting Languages and Technologies (2.5 units)
- X 418.87\* Introduction to Java Programming (2 units)
- X 418.87A Intermediate Programming in Java Using Swing Part I (2 units)
- X 418.87B\* Intermediate Programming in Java Using Swing: Part II (2 units)
- X 418.100 Developing Enterprise Applications Using Java (4 units)
- X 418.123 Java and XML (2 units)
- X 418.45\* Servlet and Java Server Page Programming (2 units)

#### Recommended Electives (11.5 units):

- X 418.18 Web and Streaming Media Services (1.9 units)
- X 418.55\* J2EE Web Applications: Apache Struts, Architecture, Design Patterns, and Custom Tags (4 units)
- X 418.94 Enterprise JavaBeans (EJB): An Introduction to Developing Middle-ware Components Using Java—Part 1 (2 units)
- X 418.94A\* Enterprise JavaBeans (EJB): An Introduction to Developing Middle-ware Components Using Java—Part 2 (2 units)
- X 418.94B Hibernate: An Introduction to Object/Relational Mapping (2 units)
- X 418.95 Java Web Services Technology for Enterprise-Level Application Integration (4 units)

\* Offered this quarter.

To substitute electives or for more information, call (310) 825-4100.

## Programming Concepts

### ◆ Business Programming and Software Development

X 414.20 Management 4 units \$525  
This comprehensive course introduces students to and builds proficiency in computer programming and software development for business. Both the Visual Basic and C programming languages are used to illustrate concepts common to modern high-level programming languages. Topics include elements of problem-solving, specifications, user interface design, and coding; variables and data structures; modular design; flow of control, including looping and selection; event-driven programming; file processing; and program testing, debugging, and documentation. The course allows students to compare and contrast procedural programming with object-oriented programming. Examples and assignments illustrate typical business applications. Weekly programming assignments are required. As a first course in actual programming, this course prepares students for either the C or Visual Basic series of courses. *This is not a laboratory course. Requires computer work outside of class. Students must have web access to retrieve course materials.*

#### Reg# S4922B

UCLA: 5117 Math Sciences  
Monday, 7-10pm,  
January 8-March 26, 12 mtgs.

(no mtg. 1/15 & 2/19; 2 mtgs. to be arranged)

**Keith V. Jefferies**, MBA, President, ComputerUp

#### NEW COURSE

### ◆ Software Engineering and Application Development Internship

X 418.14A Management 4 units \$475  
*Prerequisite:* Programming experience or consent of instructor. *Enrollment limited. For more information see page 51.*

#### Reg# S8149B

Los Angeles: Location to be announced  
For dates call Terry Werner at (310) 825-4100  
or email [twerner@uclaextension.edu](mailto:twerner@uclaextension.edu).

**Khosrow (Koz) Khosravani**, MA, Instructor, Next-Generation Mobile Training

## Online Courses

For more information about online courses, including technical requirements and important enrollment information, see page 146.

### Business Programming and Software Development (Online)

X 414.20 Management 4 units \$600  
*Enrollment limited. For more information see page 52.*

#### Reg# S4923B

January 10-March 28  
**Keith V. Jefferies**, MBA, President, ComputerUp

## C/C++

### Certificate Program in C/Unix

This 20-unit program offers training in the C programming language and introduces the system user and designer to the Unix operating system.

#### Required Courses (12 units):

X 418.81	Introduction to C Programming Language (4 units)
X 418.81A*	C/C++ Functional and Object-Oriented Programming (4 units)
X 417.31*	Introduction to Unix and Linux (4 units)
X 417.31A	Intermediate Unix and Linux (4 units)

#### Recommended Electives (minimum of 8 units):

X 417.29A*	Linux Networking Tools and Techniques: Setup and Configuration (4 units)
X 417.29B	Linux Networking Tools and Techniques: Analysis and Management (4 units)
X 417.29D	Linux System Administration (4 units)
X 417.36	Introduction to Unix and Linux System Administration (4 units)
X 417.39A*	Unix and Linux Shell Scripting (4 units)
X 418.74*	Object-Oriented Analysis and the Unified Modeling Language (UML) (3 units)
X 418.104*	Introduction to Perl with Applications to CGI Programming (4 units)

For more information or to substitute electives call (310) 825-4100.

\* Offered this quarter.

### Cell Phone Game Programming in C/C++ with BREW

X 418.108 Management 4 units \$625  
*(Includes materials, XP Professional operating system, and Visual Studio academic software. Textbook provided; student must have a laptop computer that can be used in class.)*

This online course teaches the basics of game programming for cell phones in C as well as the basics of Qualcomm's BREW (binary runtime environment for wireless). Students learn by modifying existing code—a tried-and-true method for developing game software. Video is used extensively to present overviews of the code, illustrate code development, pose exercises and assignments, and demonstrate and discuss solutions to exercises. Many of the exercises are completed by the students on their laptops in class. The programming platform is the BREW Software Development Kit with Microsoft Visual Studio C/C++ running on Windows. Topics include an introduction to the BREW SDK; setting up projects; using the BREW Resource Editor, MIF Editor, and Simulator; overview of the programming environment; animation with bitmaps; introduction to the debugger; the animation loop; animation with geometric graphics; user interfaces, including static text, text controls, menus, time and date controls, and dialogs; persistent storage; basic sound and music; coordinating sound and graphics; and creating a working game on the BREW Simulator. *Prerequisite:* Experience or coursework in C programming typical of an introductory programming course. *Students must have web access to retrieve course materials.*

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#### Reg# S4939B

UCLA: 5117 Math Sciences  
Thursday, 6:30-10pm,  
January 11-March 15, 10 mtgs.

**Bob Dietz**, BA, author, consultant, software developer

### C/C++ Functional and Object-Oriented Programming

X 418.81A Management 4 units \$525  
This course covers both the functional C and object-oriented C++ approaches to programming. Beyond the loops, conditional statements, data types, and structures, the implementation of functions and pointers in both environments is examined. In the normal C++ language capability, such topics as "this" pointer, classes, overloaded functions, memory management, name spaces, and operators are discussed in depth. Exceptions, friends, inheritance, and the standard class library also are covered, time permitting. Programming examples are discussed for every topic. The required text examines programming in the Linux/Unix environment and classwork is done using a workbook which utilizes the Microsoft development environment. *Prerequisite:* X 414.20 Business Programming and Software Development or equivalent experience.

#### Reg# S4926B

UCLA: 5127 Math Sciences  
Monday, 6:30-9:30pm,  
January 8-March 26, 12 mtgs.  
(no mtg. 1/15 & 2/19; 2 mtgs. to be arranged)

**Keith Ward**, MS

## Online Course

### C++ Fundamentals for Visual Studio .NET Platform (Online)

X 418.735B Management 4.5 units \$800  
*(Includes materials, XP Professional operating system, and Visual Studio .NET academic software.)*  
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 146. Enrollment limited.*

#### Reg# S4935B

January 10-March 14  
**Prentiss H. Knowlton**, PhD, Senior Systems Engineer, QSS

## Crystal Reports

### Introduction to Crystal Reports

X 418.25 Management 2 units \$600  
*(Includes course materials.)*  
This course is designed for the new Crystal Reports user who needs to learn how to create basic reports with Seagate Crystal Reports. Topics include planning a report, creating a report, sorting records, creating group totals, applying formatting, using formulas, and creating charts. *Prerequisite:* Working knowledge of Windows applications and basic knowledge of database concepts, such as tables, fields, and records; or consent of instructor. *Enrollment limited; enrollment prior to the first class required. Students must have web access to retrieve course materials.*

#### Reg# S5482B

UCLA: 2434 Franz Hall  
\* Saturday & Sunday, 9am-5pm,  
March 24 & 25, 2 mtgs.  
\$30 nonrefundable until March 19;  
\$100 nonrefundable until March 23;  
no refund thereafter.

**Fred Savage**, MBA, ACE (Authorized Crystal Engineer), MCT, MCSD, consultant

### Intermediate Crystal Reports

X 418.25A Management 2 units \$600  
*(Includes course materials.)*

This course is designed for the Crystal Reports user who has acquired some experience with Crystal Reports or who has taken X 418.25 Introduction to Crystal Reports. Instruction focuses on more advanced report-creation techniques, such as conditional reporting, section formatting, distributing reports, advanced formula usage, subreports, and using SQL queries. *Prerequisite:* X 418.25 Introduction to Crystal Reports, or working knowledge of Seagate Crystal Reports features, or consent of instructor. *Enrollment limited; enrollment prior to the first class required. Students must have web access to retrieve course materials.*

#### Reg# S5483B

UCLA: 2434 Franz Hall  
\* Saturday & Sunday, 9am-5pm,  
March 31; April 1, 2 mtgs.  
\$30 nonrefundable until March 26;  
\$100 nonrefundable until March 30;  
no refund thereafter.

**Fred Savage**, MBA, ACE (Authorized Crystal Engineer), MCT, MCSD, consultant

## Java

The Sequential Program in Java has been discontinued. For an alternative program in Application Programming: Java Specialization see page 52.

For more information call (310) 825-4100.

### Servlet and Java Server Page Programming

X 418.45 Management 2 units \$575  
This course covers in depth the programming of servlets and Java server pages (JSP). The J2EE platform is first examined to provide a context for servlets and JSP. The servlet's API, as well as JSP model, is studied and programmed using a web server. Specific servlet areas covered include servlet life cycle, session tracking, processing HTTP requests, servlet mappings to URLs, security issues, accessing the servlet environment using the container interface, using the single thread model servlet, servlet cookie API, servlet-to-servlet communications, and servlet deployment descriptors. JSP, which is built on the servlet model, is then presented. Topics include directives, actions, expressions, scoping issues, JSP objects, tag handler classes, tag libraries, tag library descriptor file, and assignment of attributes to tags. Finally, integrating servlets and JSP into applications, trade-offs, and design patterns is examined. *Prerequisite:* X 418.87 Introduction to Java Programming and a general understanding of client/server technology. *Enrollment limited. Requires computer work outside of class.*

#### Reg# S5492B

UCLA: 2434 Franz Hall  
Tuesday, 6:30-9:30pm,  
February 20-March 27, 6 mtgs.

**Dennis Zottola**, BS, Senior Software Engineer, IXIA Communications

### J2EE Web Applications: Apache Struts, Architecture, Design Patterns, and Custom Tags

X 418.55 Management 4 units \$675  
Knowing Java Servlets and Java Server Page APIs is not enough to put together a web application that is stable, maintainable, and extensible. This course uses the popular Apache Struts web application framework to illustrate how to create well-architected web applications. The Java Enterprise Edition (J2EE) web application architecture is covered and students are taught the basic design patterns used to create a stable, maintainable, and performant system. The primary example application used throughout the course is written using Apache Struts v. 1.1. The use of JSP custom tags to eliminate Java Servlets within the JSP page is discussed and illustrated using the Java standard tag library (JSTL). Setting up the environment in which the application will run and using popular Java development tools, such as Eclipse and Ant, also are covered. Lab work centers around implementing new features and extending an already working Struts application. A demonstration of the new Java Server Faces framework (positioned to be a major platform for the development of Java web applications) is presented, time permitting. *Prerequisite:* X 418.45 Servlet and Java Server Page Programming or equivalent. Students should have

experience writing Java code; experience with web applications is helpful but not assumed. *Enrollment limited. Requires computer work outside of class.*

#### Reg# S5493B

UCLA: 2434 Franz Hall  
Monday, 6:30-10pm,  
January 8-March 26, 10 mtgs.  
(no mtg. 1/15 & 2/19)

**Ray Charles Clough**, MS, Engineering Staff, Patt & Whitney, Rocketdyne

### Fundamentals of Programming Using Java: Hands-On

X 418.85A Management 4 units \$675  
Java is one of today's fastest-growing programming languages. Powerful enough to build large N-tiered Internet and intranet applications, Java is a well-designed object-oriented language that allows rapid development of programs. Due to its simplicity, Java 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 are assigned a number of programming projects during the course and instruction stresses practical programming skills to prepare them for follow-on Java courses. *Enrollment limited. Requires computer work outside of class as well as a computer with any operating system that supports Java; familiarity with that 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.*

#### Reg# S5494B

UCLA: A1-241 School of Public Health  
Wednesday, 6:30-10pm,  
January 10-March 14, 10 mtgs.

**R. Alin Pilkington**, BSEE, Software and Systems Manager, Ai Tech

### Java Programming: Hands-On

X 418.87 Management 2 units \$575  
Java enables programmers to develop robust applications on the Internet; simplify object-oriented programming; and add security, portability, networking, and multithreading power to applications. Designed for those who have some familiarity with programming, this hands-on lab allows students to acquire practical skills and immediately use them in their computing environment. After successfully completing the course, students should know how to develop applications in Java that include mathematical expressions, looping, string and array processing, and user-defined objects. An introduction to programming Java applets also is included. *Prerequisite:* Some familiarity with programming. *Enrollment limited. Requires computer work outside of class as well as a computer with any operating system that supports Java; familiarity with that 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.*

#### Reg# S5495B

UCLA: 2434 Franz Hall  
Tuesday, 6:30-9:30pm,  
January 9-February 13, 6 mtgs.

**Dennis Zottola**, BS, Senior Software Engineer, IXIA Communications

COURSES CONTINUE ON THE NEXT PAGE.

Visit [uclaextension.edu](http://uclaextension.edu)

TO ENROLL CALL (310) 825-9971  
or (818) 784-7006

### ◆ Intermediate GUI Programming in Java Using Swing, Part II

X 418.87B Management 2 units \$575  
User interfaces are no longer viewed as something added onto the side of an application; often, they are now the center from which an application grows. While Java's AWT components can be used to quickly build reasonable user interfaces, they lack the features and display qualities needed to construct sophisticated interfaces. The components of the Swing API were designed to provide an industrial-strength solution to the problem of constructing more demanding user interfaces. Benefits of using the Swing API include the ability to display images instead of or in addition to text on buttons and labels, add or change borders drawn around most Swing components, change the look and feel of an interface, activate various graphic controls by mouse or keyboard, and display context-sensitive help messages. It also provides the widest latitude in allowing the user to interact with lists, drop-down boxes, and advanced data display controls. Students must have a firm understanding of Java's core data structures and AWT; specifically, the delegation event model and the component and container classes upon which all Swing components are based. Topics include the model view controller architecture; icons, tool tips, and borders; keyboard navigation and scrolling; menus and toolbars; standard and custom dialog boxes; pluggable look-and-feel; and an introduction to data display controls. *Prerequisite:* X 418.87 Java Programming and X 418.87A Intermediate GUI Programming in Java Using Swing: Part I or consent of instructor. *Enrollment limited. Requires computer work outside of class.*

#### Reg# S5490B

UCLA: 2434 Franz Hall  
Thursday, 6:30-9:30pm,  
January 11-February 15, 6 mtgs.

**Wesley A. Lee**, BA, Principal, Wesley Lee & Associates; recipient, UCLA Extension Dean's Distinguished Instructor Award, 2006

### ◆ Enterprise Java Beans (EJB): An Introduction to Developing Middleware Components Using Java—Part 2

X 418.94A Management 2 units \$575  
Enterprise JavaBeans (EJB)—the server-side component architecture for the Java 2 Platform, Enterprise Edition (J2EE)—contains many features that can facilitate the development of components used to implement the business logic of multi-tier applications. These features address issues ranging from communicating data between distributed and local objects to defining relationships among entity beans to implementing transaction processing. This course begins with an overview of J2EE and then introduces topics that include dependent value objects, entity bean relationships, EJB QL (EJB query language), JMS (Java messaging service) and message-driven beans, JAAS (Java authentication and authorization service) and bean security, JTA (Java transaction API) and transaction processing, and further discussion of bean management and bean life cycles. *Prerequisite:* X 418.94 Enterprise JavaBeans (EJB): An Introduction to Developing Middleware Components Using Java—Part 1 or consent of instructor. *May be used as an elective course in Professional Designation in Applications Programming: Java Specialization. Enrollment limited. Students must have access to J2EE and an operating system that has been certified by Sun Microsystems. Requires computer work outside of class. Visitors not permitted.*

#### Reg# S5491B

UCLA: 2434 Franz Hall  
Thursday, 6:30-9:30pm,  
February 22-March 29, 6 mtgs.

**Wesley A. Lee**, BA, Principal, Wesley Lee & Associates; recipient, UCLA Extension Dean's Distinguished Instructor Award, 2006

## Online Courses

### ◆ Java Programming (Online)

X 418.86B Management 4 units \$600  
Java enables programmers to develop robust applications on the Internet; simplify object-oriented programming; and add security, portability, networking, and multithreading power to applications. Designed for those who have some familiarity with programming, this online course covers how to develop applications in Java that include mathematical expressions, looping, string and array processing, and user-defined objects. Java applets, abstract classes, and interfaces to build applications are then introduced. Instruction focuses on the Java class library and its application to designing and developing graphic interfaces using Swing for both applications and applets. Topics include GUI containers and layout managers; menus, user interface components, and dialog boxes; images and animation; exception handling; multithreading; and the delegation event model. Upon completing the course, students should acquire practical skills and immediately use them in their computing environment, including how to develop user interfaces and process GUI component events. Beyond user-friendly design, this course provides field-tested, programmer-friendly, and customer-friendly techniques. *For technical requirements see page 146. Enrollment limited. Students must have access to the Java Development Kit (JDK).*

#### Reg# S8283B

January 18-March 22  
**Prentiss H. Knowlton**, PhD, Senior Systems Engineer, QSS

## Visual Studio .NET

### ◆ C# Programming for the Microsoft SQL Server Database (Using MS SQL Server 2005)

X 418.697 Management 2.75 units \$800  
*(Includes course materials.)*  
This course shows users how to access and manipulate data in Microsoft SQL Server using the C# language. Students learn best practices in data access, writing, and using a class library that simplifies data access and makes data access more robust. The ADO.NET framework is covered in detail. Students mainly use the command line compiler. Console applications, Windows applications, and web applications are demonstrated, with emphasis on the classes and techniques that can be used seamlessly in any of these environments. Topics include a quick C# primer and .NET framework primer, error handling and exception handling, namespaces, ADO.NET, compiling and using class libraries, registering assemblies, COM Interop, optimizing applications with stored procedures, and avoiding SQL Injection attacks. *Enrollment limited; enrollment prior to the first class required.*

#### Reg# S8140B

UCLA: 3260/3351 Franz Hall  
\* Friday & Saturday, 9am-5pm,  
March 3, 9 & 10, 3 mtgs.  
\$30 nonrefundable until February 26;  
\$100 nonrefundable until March 2;  
no refund thereafter.

**David Henson**, BA, Microsoft-Certified Trainer and System Engineer, Certified Networks, Inc.

### ◆ C# Fundamentals for Visual Studio .NET Platform

X 418.735 Management 4.5 units \$800  
*(Includes materials, XP Professional Operating System, and instructions on obtaining Visual Studio Academic Software.)*  
This course provides new developers and 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, 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. *Enrollment limited. Students must have web access to retrieve course materials.*

#### Reg# S7843B

UCLA: 3290 Franz Hall  
Monday, 6-10pm,  
January 8-March 26, 10 mtgs.  
(no mtg. 1/15 & 2/19)  
\$30 nonrefundable until January 8;  
\$100 nonrefundable until January 29;  
no refund thereafter.

**Fred Savage**, MBA, ACE (Authorized Crystal Engineer), MCT, MCS, consultant

#### NEW COURSE

### ◆ Object-Oriented Programming for the Visual Studio .NET Platform

X 418.737A Management 4.5 units \$875  
This course is designed to provide the .NET developer with a thorough hands-on grasp of object-oriented programming (OOP) techniques in the Microsoft .NET framework. Many aspects of object-oriented design (OOD) also are studied. The intent of the course is to expose the .NET developer to more advanced application design and architectural techniques that can be applied in real-life settings and that result in a more robust, flexible, and reusable coding model. Examples and exercises involving multi-tier architecture (logical and physical), interface-based component development, distributed systems design and architecture, and design patterns and practices are provided. This course is designed for both Visual C# .NET and Visual Basic .NET developers. Examples and exercises are presented in both languages.

#### Reg# S7961B

UCLA: 3260/3351 Franz Hall  
Thursday, 6-10pm,  
January 11-March 15, 10 mtgs.  
\$30 nonrefundable until January 11;  
\$100 nonrefundable until January 25;  
no refund thereafter.

**Scott Robertson**, MS, Consultant/MCSD, Oak Park Microsystems, Inc.

**Ronald G. Landers**, BS, Owner, Right-Click Consulting, LLC

#### NEW COURSE

### ◆ Special Topics in the Visual Studio .NET Platform (The Base Class Library in .NET)

X 418.737B Management 4.5 units \$875  
This advanced-level lab provides experienced application developers with a deeper understanding of the framework Base Class Library in .NET (BCL). Topics include an in-depth discussion of .NET framework basic types; object lifetime; interfaces; generics, arrays, and collections; regular expressions; files, directories, and streams; assemblies and resources; reflection; custom attributes; threads; object serialization; and PInvoke and COM Interop. Proficiency in .NET programming today requires more than just a basic understanding of language syntax; in fact, proficiency requires a firm grasp of the underlying foundation and mechanisms that comprise the BCL. This course seeks to provide that level of enrichment to experienced programmers. *Prerequisite:* X 418.735 C# Fundamentals for Visual Studio .NET Platform and X 418.735A Programming in C#.NET for Visual Studio .NET Platform, or equivalent intermediate-level C# experience (six months to one year) in the web and Windows environment.

#### Reg# S7964B

UCLA: 3260/3351 Franz Hall  
Tuesday, 6-10pm,  
January 9-March 13, 10 mtgs.  
\$30 nonrefundable until January 9;  
\$100 nonrefundable until January 23;  
no refund thereafter.

**Scott Robertson**, MS, Consultant/MCSD, Oak Park Microsystems, Inc.

### ◆ Developing Web Applications with C#

X 418.735D Management 4.5 units \$800  
Intended for 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 should have knowledge of 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 C# Fundamentals for Visual Studio

.NET Platform or previous experience in using C#. Some knowledge of HTML and database concepts is extremely useful. *Enrollment limited; enrollment prior to the first class required. Students must have web access to retrieve course materials.*

#### Reg# S7844B

UCLA: 3290 Franz Hall  
Wednesday, 6-10pm,  
January 10-March 14, 10 mtgs.  
\$30 nonrefundable until January 10;  
\$100 nonrefundable until January 24;  
no refund thereafter.

**Fred Savage**, MBA, ACE (Authorized Crystal Engineer), MCT, MCS, consultant

### ◆ Introduction to Crystal Reports

X 418.25 Management 2 units \$600  
*(Includes course materials.)*  
*Prerequisite:* Working knowledge of Windows applications and basic knowledge of database concepts, such as tables, fields, and records; or consent of instructor. *Enrollment limited; enrollment prior to the first class required. Students must have web access to retrieve course materials. For more information see page 53.*

#### Reg# S5482B

UCLA: 2434 Franz Hall  
\* Saturday & Sunday, 9am-5pm,  
March 24 & 25, 2 mtgs.  
\$30 nonrefundable until March 19;  
\$100 nonrefundable until March 23;  
no refund thereafter.

**Fred Savage**, MBA, ACE (Authorized Crystal Engineer), MCT, MCS, consultant

### ◆ Intermediate Crystal Reports

X 418.25A Management 2 units \$600  
*(Includes course materials.)*  
*Prerequisite:* X 418.25 Introduction to Crystal Reports, or working knowledge of Seagate Crystal Reports features, or consent of instructor. *Enrollment limited; enrollment prior to the first class required. Students must have web access to retrieve course materials. For more information see page 53.*

#### Reg# S5483B

UCLA: 2434 Franz Hall  
\* Saturday & Sunday, 9am-5pm,  
March 31; April 1, 2 mtgs.  
\$30 nonrefundable until March 26;  
\$100 nonrefundable until March 30;  
no refund thereafter.

**Fred Savage**, MBA, ACE (Authorized Crystal Engineer), MCT, MCS, consultant

## Online Courses

### ◆ Introduction to Programming with Visual Basic .NET (Online)

X 418.731 Management 4 units \$625  
Designed for those who are familiar with Windows as users, this online course explains how to develop applications for Windows in an easy-to-learn-and-use environment. The course offers an alternative to Windows programming in C/C++; upon completion, students should be able to develop applications of moderate complexity for Windows. Topics include the structure of a Visual Basic .NET program, programming tools, forms, controls, menus, dialog boxes, procedures and functions, file I/O, graphics programming, debugging, and error handling. *For technical requirements see page 146. Prerequisite:* X 414.20 Business Programming and Software Development or an understanding of programming features, such as variables, constants, types, logical and relational operators, loops, while-statement, case-statement, functions, subroutines, and similar concepts. A user-level knowledge of Windows interface, such as icons, cursors, scroll bars, and dialog boxes, is assumed. *Required software:* Microsoft Visual Basic .NET or greater for Windows. *Enrollment limited.*

#### Reg# S4934B

January 11-March 29  
**Richard Eckhart**, PhD

◆ This credit course not available on a passed/not passed basis

### ◆ C++ Fundamentals for Visual Studio .NET Platform (Online)

X 418.735B Management 4.5 units \$800  
(Includes materials, XP Professional operating system, and Visual Studio .NET academic software.)  
Enrollment limited. For more information see page 53.

Reg# S4935B

January 10-March 14

Prentiss H. Knowlton, PhD, Senior Systems Engineer, QSS

## XML

### Online Course

#### Consuming and Developing XML Web Services (Online)

818.41C Management 1.8 CEU \$450  
(Formerly Introduction to XML Web Services.)  
Web services are perhaps the most significant trend in computing since the web itself. These software processes communicate and exchange information with each other using the web. Much like the browser, which communicates with web servers on a variety of platforms, web services enable developers to create interfaces to remote functions without having to know the internal details of the computers, operating systems, and development technologies that provide these services. Web services work with Java applications developed with ASP.Net, ColdFusion, PHP, and many other XML-capable technologies. In this online course participants locate and consume existing web services into web applications developed in class, then design and create a web service that retrieves information from a database and generates XML data for delivery over the web. Topics include working rich site summary (RSS) files; simple object access protocol (SOAP); web services definition language (WSDL); universal description, discovery, and integration (UDDI); working with databases; and generating dynamic XML. For technical requirements see page 146. Enrollment limited; enrollment prior to the first class required.

Reg# S4936B

January 9-February 13

Charles G. Hollins, Jr., BSCIS, Principal, Applied Internet Technology, Inc.

## Other Programming Languages

### ◆ Introduction to PERL with Applications to CGI Programming

X 418.104 Management 4 units \$625  
The Perl programming language has gained popularity in recent years due in part to its utility for web applications, such as common gateway interface (CGI) programming, and Unix system administration, and its availability on a large number of platforms. In this introductory course, students are shown the basic syntax and unique features of Perl, learn to run Perl from the command line, write and debug scripts, and more. Specific examples are presented that relate to developing CGI programs for such web applications as HTML forms data processing. Topics include introduction to Perl, variables, I/O, control structures, references and data structures, internal and user-defined functions, regular expressions, modules and libraries, debugging, browser/server interaction, CGI applications, and CGI programming using Perl. *Prerequisite:* Familiarity with at least one high-level computer language (e.g., ASP, Java, JavaScript, Visual Basics, C++, C#, or C). Familiarity with HTML, Unix, and Unix Shell programming is helpful but not required. Enrollment limited. Requires computer work outside of class. Students should have access to a computer that runs Perl. Students must have web access to retrieve course materials.

Reg# S7841B

UCLA: 2434 Franz Hall

\* Saturday, 9am-1pm,  
January 13-March 17, 9 mtgs.  
(no mtg. 2/17)

David Chiao, MS, Software Engineer, Boeing

## Relational Database and Database Programming

For more information call (310) 825-4100.  
To enroll call (310) 825-9971 or (818) 784-7006.

### Professional Designation in Database Management

This certificate program is designed for systems analysts and programmers who are or wish to become involved in the development and support of computer-based applications that employ a database management system.

Participants may select one of three specializations in database management: **Microsoft SQL Server, Microsoft Access, or Oracle.**

#### Program Prerequisites:

Participants who have no programming experience are required to take X 414.20\* Business Programming and Software Development. Participants who have no computer network experience are required to take X 417.96 Network Communication with TCP/IP.

#### Required Courses for All Three Specializations (12 units):

X 414.51*	Relational Database Management (4 units)
X 414.56	Advanced Database Management Concepts (4 units)
X 418.33*	Data Modeling and Analysis (4 units)

#### Microsoft SQL Server Specialization

##### Required Courses (16.2 units):

X 417.95*	Fundamentals of Administering Windows 2000 and 2003 Servers (4 units)
X 417.95B*	Microsoft Windows 2000/2003 Installation Fundamentals (1 unit)
X 418.622	Web/Database Connectivity Using ASP.NET (2.4 units)
X 418.694*	Microsoft SQL Server Administration (Using MS SQL Server 2005) (2.4 units)
X 418.694A*	Programming Microsoft SQL Server (Using MS SQL Server 2005) (4 units)
X 418.698	Microsoft SQL Server Reporting Services (2.4 units)

#### Recommended Electives (3.8 units):

X 418.25*	Introduction to Crystal Reports (2 units)
X 418.25A*	Intermediate Crystal Reports (2 units)
X 418.695	XML and SQL Server Database (4 units)

#### Microsoft Access Specialization

##### Required Courses (16 units):

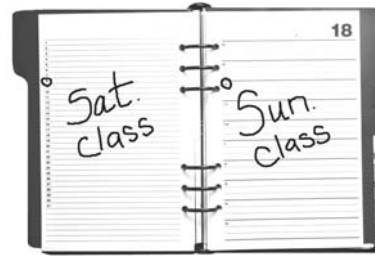
X 418.73	Introduction to Visual Basic .NET (4 units)
X 418.80	Using Microsoft Access (4 units)
X 418.84	Microsoft Access for Power Users (4 units)
X 418.85*	Introduction to VBA for Microsoft Access Programming (4 units)

#### Recommended Electives (4 units):

X 418.25*	Introduction to Crystal Reports (2 units)
X 418.25A*	Intermediate Crystal Reports (2 units)
X 418.694A*	Programming Microsoft SQL Server (Using MS SQL Server 2005) (4 units)
X 418.698	Microsoft SQL Server Reporting Services (2.4 units)

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## Spend Your Weekends with Extension



Each quarter, UCLA Extension offers a wide range of weekend courses in almost every academic discipline.

Most are held on Saturdays, though some meet on Sundays or begin on Fridays. Courses can be one day, extend over a full weekend, or have multiple meetings.

For a list of our Winter Quarter weekend programs see pages 190-191.

### ◆ Managing Data with Microsoft Excel

X 418.39 Management 2 units \$425  
*Prerequisite:* A basic understanding of Excel spreadsheet creation and use as the course significantly expands on this knowledge. Enrollment limited; enrollment prior to the first class required. Course materials available via the Internet and in class. For more information see page 51.

Reg# S8138B

UCLA: 3260/3351 Franz Hall

\* Saturday, 9am-5:30pm,  
January 27; February 3, 2 mtgs.

Arthur F. Schaak, BA, network consultant and author

## Access

### ◆ Introduction to VBA for Microsoft Access Programming

X 418.85 Management 4 units \$525  
This course introduces the Visual Basic for applications (VBA) for the Microsoft Access programming environment with a focus on developing professional business applications. Designed for those with little or no previous programming experience, students in this course learn basic language components of this Microsoft Windows-based software development environment. Topics include basic programming elements and structures: variables, data types, variable and procedure scope, parameter passing arrays, debugging, flow-of-control structures (IF, DO, WHILE, FOR, SELECT CASE), built-in functions, collections, data access objects (DAO), error handling, code behind forms (CBF), ActiveX controls, and Internet/Web access. Participants exercise their newly acquired programming skills by completing several homework assignments. *Prerequisite:* X 418.80 Using Microsoft Access.

Reg# S4940B

UCLA: 5118 Math Sciences  
Wednesday, 6-9:30pm,  
January 10-March 14, 10 mtgs.

Dennis O'Neill, BS, Vice President, Commercial Lending, Intercity Bancorp Inc.

COURSES CONTINUE ON THE NEXT PAGE.

#### Oracle Specialization

##### Required Courses (24 units):

X 414.31*	Oracle Database 10g: Introduction to SQL (4 units)
X 414.31A*	Oracle Database 10g: Program with PL/SQL (4 units)
X 414.32*	Oracle Database 10g: Administration Workshop I (4 units)
X 414.32A*	Oracle Database 10g: Administration Workshop II (4 units)
X 417.31*	Introduction to Unix and Linux (4 units)
X 417.31A	Intermediate Unix and Linux (4 units)

\* Offered this quarter.

To substitute electives or for more information call (310) 825-4100.

### ◆ Relational Database Management

X 414.51 Management 4 units \$525  
An understanding of the design of client-relational databases is vital to system design and implementation. This course provides an overview of relational database technology, data modeling, SQL, data normalization, and the translation of logical designs to physical storage structures. Other concepts introduced include indexes, storage management, transactions, database integrity, concurrency control, recovery, an overview of client/server relational database management, and an introduction to query optimization.

Reg# S4927B

UCLA: 5117 Math Sciences  
Tuesday, 6:30-9:30pm,  
January 9-March 27, 12 mtgs.

Wesley A. Lee, BA, Principal, Wesley Lee & Associates; recipient, UCLA Extension Dean's Distinguished Instructor Award, 2006

### ◆ Data Modeling and Analysis

X 418.33 Management 4 units \$525  
For more information see page 51.

Reg# S4931B

UCLA: 5118 Math Sciences  
Tuesday, 6-9:30pm,  
January 9-March 13, 10 mtgs.

Harold Plain, PhD, consultant, MIS Consulting and Training

### ◆ Using Microsoft Excel

X 418.37 Management 2 units \$425  
*Prerequisite:* A solid understanding of PC compatibles and Windows operating systems. Enrollment limited; enrollment prior to the first class required. Course materials are available both in class and via Internet. For more information see page 51.

Reg# S8137B

UCLA: 3260/3351 Franz Hall  
\* Saturday, 9am-5:30pm,  
January 13 & 20, 2 mtgs.

Arthur F. Schaak, BA, network consultant and author

\* Course held during daytime hours

Visit [uclaextension.edu](http://uclaextension.edu)

TO ENROLL CALL (310) 825-9971  
or (818) 784-7006

## Oracle-Certified Training

**UCLA Extension is proud to be a partner in the Oracle Workforce Development Program. Oracle-Certified Professional certification signifies a candidate's high level of competency in using Oracle products and knowledge of information technology.**

Visit [oracle.com/education/certification](http://oracle.com/education/certification) for detailed information about the Oracle-Certified Professional Certifications.

For more information about UCLA Extension's Oracle-Certified training courses call (310) 825-4100.

### Oracle10g Certified Database Associate Path

X 414.31*	Oracle Database 10g: Introduction to SQL
X 414.32*	Oracle Database 10g: Administration Workshop I

#### Recommended Course:

X 414.31A*	Oracle Database 10g: Program with PL/SQL
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### Oracle10g Certified Database Administrator Path

X 414.31*	Oracle Database 10g: Introduction to SQL
X 414.32*	Oracle Database 10g: Administration Workshop I
X 414.32A*	Oracle Database 10g: Administration Workshop II

#### Recommended Course:

X 414.31A*	Oracle Database 10g: Program with PL/SQL
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### Oracle10g PL/SQL Developer Certified Associate

X 414.31*	Oracle Database 10g: Introduction to SQL
X 414.31A*	Oracle Database 10g: Program with PL/SQL

### Oracle9i Forms Developer Certified Professional

X 414.31*	Oracle Database 10g: Introduction to SQL
X 414.31A*	Oracle Database 10g: Program with PL/SQL
X 414.36	Oracle9i Forms Developer: Build Internet Applications

\* Offered this quarter.

### Oracle Database 10g: Introduction to SQL

X 414.31	Management 4 units	\$1275
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(Includes Oracle materials.) Intended for Oracle8i, Oracle9i, and Oracle Database 10g users, this course is an introduction to Oracle Database 10g technology and the relational database concepts and powerful SQL programming language. Instruction provides students with the essential SQL skills of querying the database, the meta data, and creating database objects. Other topics include advanced querying and reporting techniques, data warehousing concepts, and manipulating large data sets in different time zones. *Enrollment limited; enrollment prior to the first class required. This course is designed to prepare students for the corresponding Oracle-Certified Associate exam.*

#### Reg# S5484B

UCLA: 3260/3351 Franz Hall
* Sunday, 9am-5pm, January 14-February 11, 5 mtgs. \$30 nonrefundable until January 8; \$300 nonrefundable until January 12; no refund thereafter.

**Victor Wu**, MS, Senior Vice President, Database Internet Development; Oracle Masters: Application Developer, DBA V7-V10g

### Oracle Database 10g: Program with PL/SQL

X 414.31A	Management 4 units	\$1275
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(Includes Oracle materials.) Intended for Oracle8i, Oracle9i, and Oracle Database 10g users, this course introduces students to PL/SQL and helps them understand the benefits of this powerful programming language. Instruction covers creating PL/SQL blocks of application code that can be shared by multiple forms, reports, and data management applications; creating anonymous PL/SQL blocks, stored procedures, and functions; declaring variables and trapping exceptions; developing stored procedures, functions, packages, and database triggers; and managing PL/SQL program units to manage

dependencies, manipulate large objects, and use some of the Oracle-supplied packages. Students use iSQL\*Plus to develop these program units. Demonstrations and hands-on practice reinforce the fundamental concepts. *Enrollment limited; enrollment prior to the first class required. This course is designed to prepare students for the corresponding Oracle-Certified Associate exam.*

#### Reg# S5485B

UCLA: 3260/3351 Franz Hall
* Sunday, 9am-5pm, February 25-March 25, 5 mtgs. \$30 nonrefundable until February 19; \$300 nonrefundable until February 23; no refund thereafter.

**Victor Wu**, for credits see this page.

### Oracle Database 10g: Administration Workshop I

X 414.32	Management 4 units	\$1400
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(Includes Oracle materials.)

In this course, students learn how to install and maintain an Oracle database and thus gain a conceptual understanding of the Oracle database architecture and how its components work and interact with one another. Instruction covers how to create an operational database and properly manage the various structures in an effective and efficient manner, including performance monitoring, database security, user management, and backup/recovery techniques. Lessons are reinforced with structured hands-on practices. The course is designed to prepare students for the corresponding Oracle-Certified Associate exam. *Prerequisite:* X 414.31 Oracle Database 10g: Introduction to SQL. *Enrollment limited; enrollment prior to the first class required.*

#### Reg# S5487B

UCLA: 3290 Franz Hall
* Saturday, 9am-5pm, January 13-February 10, 5 mtgs. \$30 nonrefundable until January 8; \$300 nonrefundable until January 12; no refund thereafter.

**Sean Kim**, BS, Electrical Engineering, Lead DBA/Programmer, EDS Corp.

### Oracle Database 10g: Administration Workshop II

X 414.32A	Management 4 units	\$1400
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(Includes Oracle materials.)

In this course, students learn how to configure an Oracle database for multilingual applications and practice various methods of recovering the database using RMAN, SQL, and Flashback technology. Tools to monitor database performance and what steps to take to improve database performance are covered. Students also learn how to use various database technologies, such as resource manager, the scheduler, and automatic storage management (ASM). Lessons are reinforced with structured hands-on practices and a workshop. *Enrollment limited; enrollment prior to the first class required. The course is designed to prepare students for the corresponding Oracle-Certified Professional exam.*

#### Reg# S5488B

UCLA: 3290 Franz Hall
* Saturday, 9am-5pm, February 17-March 17, 5 mtgs. \$30 nonrefundable until February 12; \$300 nonrefundable until February 16; no refund thereafter.

**Sean Kim**, for credits see above.

## Microsoft SQL Server

### Web/Database Connectivity Using ASP.NET

X 418.622	Management 2.4 units	\$900
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(Includes materials, XP Professional Operating System, and instructions on obtaining Visual Studio Academic Software.) ASP.NET and Microsoft's ADO.NET, used with the free .NET framework in conjunction with Windows 2003/XP, provide a method for collecting and delivering database content in a browser-neutral format. This course covers backend web/database connectivity in a hands-on lab environment where students build an online store from scratch using either VB.NET or C# as the programming language and notepad as the editor. Intrinsic ASP.NET objects and class libraries are used to provide fast and reliable database access to Microsoft SQL Server 2005. Other topics include ASP and ASP.NET

comparison/contrast, XML, ODBC logging, remote website administration and dynamic website generation, email notification, cookies, and security and setup of SSL. Students are encouraged to bring web-enabled cell phones and PDAs to class. Upon completing the course, students should possess a body of working code to use in their production environments. *Prerequisite:* A working knowledge of basic HTML and database concepts. *Enrollment limited; enrollment prior to the first class required.*

#### Reg# S3701B

UCLA: 3260/3351 Franz Hall
* Friday & Saturday, 9am-5pm, December 9, 15 & 16, 3 mtgs. \$30 nonrefundable until December 4; \$100 nonrefundable until December 8; no refund thereafter.

**David Henson**, BA, Microsoft-Certified Trainer and System Engineer, Certified Networks, Inc.

### Microsoft SQL Server Administration (Using MS SQL Server 2005)

X 418.694	Management 2.4 units	\$875
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(Includes course materials and lab exercises.) Intended for anyone implementing or administering Microsoft SQL Server 2005, 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. *Enrollment limited; enrollment prior to the first class required.*

#### Reg# S5481B

UCLA: 3260/3351 Franz Hall
* Friday, 9am-5pm, January 19 & 26; February 2, 3 mtgs. \$30 nonrefundable until January 12; \$100 nonrefundable until January 18; no refund thereafter.

**David Henson**, BA, Microsoft-Certified Trainer and System Engineer, Certified Networks, Inc.

### Programming Microsoft SQL Server (Using MS SQL Server 2005)

X 418.694A	Management 4 units	\$1025
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(Includes course materials and lab exercises.) Transact-SQL extends SQL by adding the constructs found in other procedural languages, such as variables and control structures, thus allowing for a flexible procedural extension to SQL. Intended for anyone working with or evaluating Microsoft SQL Server, this course covers the basic syntax and statements used to create functioning Transact-SQL modules with an emphasis on reporting techniques and performance tuning. Students write different types of Transact-SQL modules, including batches, transactions, stored procedures, user defined functions, and triggers. *Prerequisite:* Students with no prior SQL programming experience must complete the SQL tutorial at [certified-networks.com/classes/SQLreview](http://certified-networks.com/classes/SQLreview) before the first class. *Enrollment limited; enrollment prior to the first class required.*

#### Reg# S5480B

UCLA: 3260/3351 Franz Hall
* Friday & Saturday, 9am-5pm, February 24-March 10, 5 mtgs. \$30 nonrefundable until February 20; \$100 nonrefundable until February 23; no refund thereafter.

**David Henson**, BA, Microsoft-Certified Trainer and System Engineer, Certified Networks, Inc.

### C# Programming for the Microsoft SQL Server Database (Using MS SQL Server 2005)

X 418.697	Management 2.75 units	\$800
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(Includes course materials.) This course shows users how to access and manipulate data in Microsoft SQL Server using the C# language. Students learn best practices in data access, writing, and using a class library that simplifies data access and makes data access more robust. The ADO.NET framework is covered in detail. Students mainly use the command line compiler. Console applications, Windows applications, and web applications are demonstrated, with emphasis on the classes and techniques that can be used seamlessly in any of these environments. Topics include a quick C# primer and .NET framework primer, error handling and exception handling, namespaces, ADO.NET, compiling and using class libraries, registering assemblies, COM Interop, optimizing applications with stored procedures, and avoiding SQL Injection attacks. *Enrollment limited;*

*enrollment prior to the first class required.*

#### Reg# S8140B

UCLA: 3260/3351 Franz Hall
* Friday & Saturday, 9am-5pm, March 3, 9 & 10, 3 mtgs. \$30 nonrefundable until February 26; \$100 nonrefundable until March 2; no refund thereafter.

**David Henson**, BA, Microsoft-Certified Trainer and System Engineer, Certified Networks, Inc.

### Microsoft SQL Server Reporting Services

X 418.698 Management 2.4 units \$800 This course is intended for those designing, creating, or delivering reports from an SQL 2005 database. Students learn to produce sophisticated, robust reports; extract business intelligence from raw data; extract report data using parameters and filters; deploy reports to a report server; secure the reporting services environment; and use interactive reports with drill-down and drill-through features. Topics include architecture, security, authoring reports, advanced reporting, report deployment, and reporting service administration. *Enrollment limited; enrollment prior to the first class required.*

#### Reg# S3703B

UCLA: 3260/3351 Franz Hall
* Friday & Saturday, 9am-5pm, December 1, 2 & 8, 3 mtgs.

**David Henson**, BA, Microsoft-Certified Trainer and System Engineer, Certified Networks, Inc.

### Fundamentals of Administering Windows 2000 and 2003 Servers

X 417.95	Management 4 units	\$935
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(Includes course materials.) *Prerequisite:* Familiarity with Windows-based systems. *Enrollment limited; enrollment prior to the first class required. For more information see page 58.*

#### Reg# S5477B

UCLA: A1-241 School of Public Health
* Saturday, 9am-5pm, January 20-February 17, 5 mtgs. \$30 nonrefundable until January 16; \$180 nonrefundable until January 19; no refund thereafter.

**David Schamus**, MA, CCNA, MCSA, MCSE, MCT, Owner, Byte Back! Training

### Microsoft Windows 2000/2003 Installation Fundamentals

X 417.95B	Management 1 unit	\$275
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(Includes course materials.) *Prerequisite:* Familiarity with Windows-based systems. *Enrollment limited; enrollment prior to the first class required. For more information see page 58.*

#### Reg# S5478B

UCLA: A1-241 School of Public Health
* Saturday, 8:30am-5pm, January 13, 1 mtg. \$30 nonrefundable until January 8; \$75 nonrefundable until January 12; no refund thereafter.

**David Schamus**, MA, CCNA, MCSA, MCSE, MCT, Owner, Byte Back! Training

### Implementing and Managing Exchange 2003

X 417.95D	Management 4 units	\$935
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*Prerequisite:* Students are expected to have a basic understanding of TCP/IP-based networks and Windows Server or NT administration. Students new to networking should take X 417.95 Fundamentals of Administering Windows 2000 and 2003 Servers and X 417.95A Fundamentals of Administering TCP/IP for Windows clients. *Enrollment limited; enrollment prior to the first class required. Students should have access to a computer and the Internet during this course. For more information see page 58.*

#### Reg# S5479B

UCLA: A1-241 School of Public Health
* Saturday, 9am-5pm, February 24-March 24, 5 mtgs. \$30 nonrefundable until February 20; \$180 nonrefundable until February 23; no refund thereafter.

**David Schamus**, MA, CCNA, MCSA, MCSE, MCT, Owner, Byte Back! Training

\* Course held during daytime hours

### ◇ Introduction to Crystal Reports

X 418.25 Management 2 units \$600

(Includes course materials.)

*Prerequisite:* Working knowledge of Windows applications and basic knowledge of database concepts, such as tables, fields, and records; or consent of instructor. *Enrollment limited; enrollment prior to the first class required. Students must have web access to retrieve course materials. For more information see page 53.*

#### Reg# S5482B

UCLA: 2434 Franz Hall

✳ Saturday & Sunday, 9am-5pm,  
March 24 & 25, 2 mtgs.

\$30 nonrefundable until March 19;

\$100 nonrefundable until March 23;

no refund thereafter.

**Fred Savage**, MBA, ACE (Authorized Crystal Engineer), MCT, MCS, consultant

### ◇ Intermediate Crystal Reports

X 418.25A Management 2 units \$600

(Includes course materials.)

*Prerequisite:* X 418.25 Introduction to Crystal Reports, or working knowledge of Seagate Crystal Reports features, or consent of instructor. *Enrollment limited; enrollment prior to the first class required. Students must have web access to retrieve course materials. For more information see page 53.*

#### Reg# S5483B

UCLA: 2434 Franz Hall

✳ Saturday & Sunday, 9am-5pm,  
March 31; April 1, 2 mtgs.

\$30 nonrefundable until March 26;

\$100 nonrefundable until March 30;

no refund thereafter.

**Fred Savage**, MBA, ACE (Authorized Crystal Engineer), MCT, MCS, consultant

## Data Communications and Computer Networks

For more information call (310) 825-4100.

To enroll call (310) 825-9971 or (818) 784-7006.

### Professional Designation in Data Communications

This 32-unit certificate program is designed for individuals involved in the growing area of data communications from a business perspective. It is intended for data processing professionals and computer systems users who work with online computer systems and distributed systems; systems analysts concerned with evaluating, selecting, implementing, and operating data communications systems; and managers whose staffs interface with data communications.

#### Required Courses (20 units):

- X 417.10\* Introduction to Data Communications (4 units)
- X 417.20 Advanced Data Communications Technology (4 units)
- X 417.96 Network Communications with TCP/IP (4 units) X 417.71\* Introduction to Information Security (4 units)
- X 418.60\* Introduction to Client/Server Computing (4 units)

#### Recommended Electives (minimum of 12 units):

- X 417.24 High-Speed Enterprise Networking Technologies (3 units)
- X 417.25 Broadband Access Technologies (2 units)
- X 417.28 VPNs: Virtual Private Networks (4 units)
- X 417.37 Wireless Data Networks (4 units)
- X 417.49\* Wireless Technology and Application for the Office (4 units)
- X 417.65 Introduction to Satellite Communications (4 units)

\* Offered this quarter.

For more information or to substitute electives call (310) 825-4100.

### Professional Designation in Operating System Administration

This 32-unit certificate program is intended for professionals who are involved in local area network support for businesses. The courses focus on all aspects of the support process, including requirements analysis, design, installation, operation, and management.

#### Required Courses (20 units):

- X 417.10 Introduction to Data Communications (4 units)
- X 417.20 Advanced Data Communications Technology (4 units)
- X 417.71\* Introduction to Information Security (4 units)
- X 417.96 Network Communications with TCP/IP (4 units)
- X 418.60\* Introduction to Client/Server Computing (4 units)

#### Recommended Electives (minimum of 12 units):

- X 417.29A\* Linux Networking Tools and Techniques: Setup and Configuration (4 units)
- X 417.29D Linux System Administration (4 units)
- X 417.31\* Introduction to Unix and Linux (4 units)
- X 417.31A Intermediate Unix and Linux (4 units)
- X 417.95\* Fundamentals of Administering Windows 2000 and 2003 Servers (4 units)
- X 417.95A Fundamentals of Administering TCP/IP for Windows Clients (2 units)
- X 417.95C TCP/IP for Windows Servers (4 units)

\* Offered this quarter.

For more information or to substitute electives call (310) 825-4100.

### ◇ Introduction to Data Communications

X 417.10 Management 4 units \$525

This course examines the evolution of the data communications discipline as well as applications areas, basic teleprocessing access methods, system response time considerations, data communications terminology, basic data transmission and problem areas, data communications equipment (terminals, controllers, modems, and multiplexors), interfacing standards, communications processors and their use as front-end remote concentrators, and model processors. It also covers basic networking techniques, services provided by terrestrial and satellite communications common carriers, the availability and reliability of data communications systems, and the network control center concept.

#### Reg# S4925B

UCLA: 5118 Math Sciences

Monday, 6-9:30pm,

January 8-March 26, 10 mtgs.

(no mtg. 1/15 & 2/19)

**Todd B. Weiner**, BA, Senior Account Manager, J2 Global Communications

### ◇ Wireless Technology and Application for the Office

X 417.49 Management 4 units \$675

In this hands-on lab course, students learn a practical approach to implement wireless networks and wireless products to enable them to set up an office or home office network. Wireless setup, such as router setup, DSL access, file sharing between wireless and wired computers, printer sharing, and wireless security, is presented. Topics include local area network concepts, wide area network concepts, network routing, and security. The course utilizes such products as wireless network cards, routers, access points, antennas, range expanders, and switches. A comparison of wired products to general wireless technology and product/cost is made, including discussions on Wi-Fi, Bluetooth, and voice over IP. Upon completing this course, students should be able to configure wireless access on a laptop computer and wireless LAN. *Prerequisite:* Familiarity with Windows-based systems; a laptop computer.

#### Reg# S4928B

Westwood: 211 UCLA Extension Bldg.

Thursday, 6-9:30pm,

January 11-March 15, 10 mtgs.

**Reuben B. Sauer**, BS, President, SOSystems

## Security

### Sequential Program in Information Security

As computing resources become pervasive and critical, computer and network security are increasingly important to all organizations. From the perspective of confidentiality, integrity, and availability, this 20-unit sequence provides a foundation of analysis skills, design techniques, and framework of tools necessary to protect computing systems and networks.

#### Required Courses (12 units):

- X 417.60 Distributed Directories/LDAP (2 units)
- X 417.71\* Introduction to Information Security (4 units)
- X 417.72 Cryptography Concepts (2 units)
- X 417.73 Network Security and Firewalls (4 units)

#### Recommended Electives (minimum of 8 units):

- X 417.66 Integrating Enterprise Applications with a Public Key Infrastructure (2 units)
- X 417.68 Email Security (1 unit)
- X 417.69 Facility Security and Disaster Recovery (2 units)
- X 417.74 Database Security (2 units)
- X 417.75 XML Security (2 units)
- X 417.76 Computer Forensics (4 units)
- X 417.77\* Linux Network Security Tools (2 units)
- X 417.78\* Practical Security Audits for the Enterprise (4 units)
- X 417.80 Technical Aspects of Network Management (4 units)

\* Offered this quarter.

For more information or to substitute electives call (310) 825-4100.

### ◇ Introduction to Information Security

X 417.71 Management 4 units \$525

This course combines theoretical security models with practical state-of-the-art examples for a comprehensive and useful introduction to this field and should benefit auditors, system administrators, or anyone else with a basic understanding of information technology. Topics include security policies, risk analysis, formal security models, cryptography, legal issues, and network security. Previous distinguished guest speakers have included representatives of leading security vendors, consulting and audit firms, and members of the legal and law enforcement communities. Course material follows the Certified Information System Security Professional (CISSP) certification exam's Common Body of Knowledge (CBK).

#### Reg# S4941B

UCLA: 5118 Math Sciences

Thursday, 6-10pm,

January 11-March 8, 9 mtgs.

**Charles H. Hollins**, MA, Network Consultant, CCNA, CCDA, CCNP, and CCDP, Applied Internet Technology

### ◇ Linux Network Security Tools

X 417.77 Management 2.4 units \$600

(Includes course materials.)

This course focuses on the knowledge and skills needed to install, configure, and build a secure Linux server to be used as an enterprise network security tool platform. Students learn the techniques for searching, downloading, installing, and using specific Linux open-source security tools. Once configured on the Linux server, these security applications are used in various hands-on network security labs to provide the necessary skills to become proficient with the tools, including Linux firewalls (iptables and ipchains), Nessus vulnerability scanner, NTOP traffic analysis, Ethereal, tcpdump, Snort, Kismet wireless network detector, nmap scanner, Knoppix, and Portentry. In addition, this course provides some of the same knowledge and skills used in the well-known Hacking Exposed courses and offers a valuable source of information for securing your network and servers. *Prerequisite:* X 417.31 Introduction to Unix and Linux, other basic Unix course, or consent of instructor is highly suggested. *Enrollment limited; enrollment prior to the first class required. Students must have web access to retrieve course materials.*

→ → →

## Quick Enroll on the Web

Looking for an easy way to enroll online? Use the "Quick Enroll" feature on our website.

Begin by finding the registration number (**Reg#**) of the course you want to take in this catalog. Then visit [uclaextension.edu](http://uclaextension.edu). Click on the "Quick Enroll" tab, enter the **Reg#**, hit "go," then "Add to My Study List." After selecting all your courses, click "Enroll" to complete the process.

It's simple, direct, and quick.

#### Reg# S8146B

UCLA: 3290 Franz Hall

✳ Saturday, 9am-5pm,

March 24 & 31; April 7, 3 mtgs.

**David A. Sanner**, BS, consultant & CISSP, BluePrint Security

### ◇ Practical Security Audits for the Enterprise

X 417.78 Management 4 units \$525

IT managers, controllers, and CIOs need to measure the security of their systems. Auditing information systems for security requires knowledge across a wide range of disciplines beyond computer science, including management science, information security, accounting, finance, business, and human resources. This course provides all the tools needed to perform practical security audits on the entire spectrum of a company's various IT platforms—from the mainframe to the PC—as well as the networks that connect them to each other and to the global marketplace. The course covers the full range of issues relating to security audits: hardware, operating systems, network connections, the cooperation of logical and physical security measures, and disaster recovery planning. Comprehensive treatment of the different structures and security needs of AS/400, Microsoft O/S, Unix, and networks should enable the student to understand security requirements regardless of which computer architecture a company uses. *Prerequisite:* X 417.71 Introduction to Information Security or consent of instructor.

#### Reg# S4942B

UCLA: 5127 Math Sciences

Thursday, 6-9:30pm,

January 11-March 15, 10 mtgs.

**Harold Plain**, PhD, consultant, MIS Consulting and Training

COURSES CONTINUE ON THE NEXT PAGE.

◇ This credit course not available on a passed/not passed basis



Use the QUICK ENROLL feature at [uclaextension.edu](http://uclaextension.edu)

## Online Course

### ◇ Unix Systems Security Fundamentals (Online)

X 417.82 Management 3 units \$550  
(Includes course materials on DVD.)

This comprehensive online self-paced course exposes the Unix system administrator or user to a wide variety of tools and techniques that can be employed to secure a Unix system on the Internet. Instruction provides in-depth coverage of defense strategy and how to apply this strategy to securing a Unix system from the host perspective. Fundamental security practices for Unix system administration are covered, including policy, roles, security awareness, authentication, encryption, intrusion detection, integrity assurance, audit trails, performing a security audit, and access control. Students also are introduced to a wide variety of practical Unix security tools. *Special requirements: Must have PC running Windows XP or Mac running OS 10.x with Internet connection, Linux software (Red Hat version 9, Red Hat Enterprise Linux 3, or equivalent), C compiler, Make Utility, GPG (the GNU version of Pretty Good Privacy encryption and digital signature tool), and Realmedia Player. For technical requirements see page 146. Prerequisite: X 417.31 Introduction to Unix and Linux or equivalent knowledge. Enrollment limited; enrollment prior to the first class required.* The Unix Systems Security Fundamentals training course workbook is provided on a DVD. Defense-In-Depth: Information Assurance white paper is provided on a DVD.

#### Reg# S4943B

January 9-February 13

Victor Hazlewood, BS, ISO San Diego Supercomputer Center

## Cisco Training

### Sequential Program in Cisco

This 19-unit sequence helps students develop their skills to become Cisco-certified professionals; identify key technical, business, and administrative issues that drive computer network design; configure Cisco routers and switches for operation in a multiprotocol network; configure Cisco IOS software for scalable operation in a multiprotocol enterprise network; and understand the troubleshooting processes on Cisco routers and switches.

#### Required Courses (19 units):

X 417.92*	Cisco Firewall and IPSec Boot Camp (5 units)
X 417.90B	CCNP Boot Camp (5 units)
X 417.91	Cisco Boot Camp for CCNA (5 units)
X 417.96	Network Communication with TCP/IP (4 units)

\* Offered this quarter.

### ◇ Cisco Firewall and IPSec Boot Camp

X 417.92 Management 5 units \$2495

It is widely agreed among many professionals that security is the most important aspect of information technology. Intruders may be external (hackers, crackers, etc.) or internal (spies, disgruntled employees, etc.) to the corporate infrastructure. Security professionals use firewalls to control access into their infrastructures as well as IPSec (IP Security) to secure their data when sending information across the Internet. These technical solutions achieve the three goals of information security: confidentiality, integrity, and availability. This hands-on course prepares students to design and configure firewalls and IPSec. Major topics include extended access lists, timed access lists, NAT (Network Address Translation), PAT (Port Address Translation), MD5 (Message Digest 5), flashing, IPSec tunnels, security associations, and VLANs (Virtual LANs). *Enrollment limited; enrollment prior to the first class required. Visitors not permitted.*

#### Reg# S8290B

Westwood: 208 Extension Lindbrook Center

\* Saturday, 9am-5pm,

February 24-March 31, 6 mtgs.

\$30 nonrefundable until February 20;

\$180 nonrefundable until February 23;

no refund thereafter.

Charles H. Hollins, MA, Network Consultant, CCNA, CCDA, CCNP, and CCDP, Applied Internet Technology

#### NEW COURSE

### ◇ CompTIA Network+ Boot Camp

X 417.91A Management 3 units \$1695

(Includes course materials.)

The Network+ Certificate is offered by CompTIA (Computing Technology Industry Association) to validate the applicant's comprehension of all aspects of networking. The Network+ Examination includes questions on network media; topology; protocols; standards; implementation; hardware devices (hubs, bridges, switches, routers, servers, and gateways); support; and security. This lecture course covers cabling and connectors, networking devices, OSI model and network protocols, TCP/IP (transmission control protocol/Internet protocol), WAN technologies, remote access, security protocols, network operating systems and clients, fault tolerance, disaster recovery, VLANs, NAS, network security, troubleshooting connectivity, and troubleshooting and supporting the network. Several in-class hardware and software demonstrations are provided. Upon completing this course, students should be well-positioned to pass the Network+ examination.

#### Reg# S7950B

Westwood: 208 Extension Lindbrook Center

\* Saturday, 9am-5pm,

January 13, 20 & 27; February 3, 4 mtgs.

\$30 nonrefundable until January 8;

\$180 nonrefundable until January 12;

no refund thereafter.

Charles H. Hollins, MA, Network Consultant, CCNA, CCDA, CCNP, and CCDP, Applied Internet Technology

## Operating Systems

For more information call (310) 825-4100.

To enroll call (310) 825-9971 or (818) 784-7006.

## Windows

### ◇ Fundamentals of Administering Windows 2000 and 2003 Servers

X 417.95 Management 4 units \$935

(Includes course materials.)

This hands-on course covers the fundamentals of administering Windows servers (both 2000 and 2003) in an Active Directory environment. Intended for IT staff who are new to Active Directory, the course begins with an overview of how sites, domains, organizational units, groups, computers, and users form the layout for Active Directory administration. Students create and manage the core aspects of user, group, and computer accounts and learn how to control access to network resources. File system security and share permissions for NTFS and FAT are thoroughly tested along with printer sharing and management. Procedures for disaster recovery also are discussed. Finally, students use group policies, disk quotas, and auditing rules to learn how to create a more secure network environment. *Prerequisite: Familiarity with Windows-based systems. Enrollment limited; enrollment prior to the first class required.*

#### Reg# S5477B

UCLA: A1-241 School of Public Health

\* Saturday, 9am-5pm,

January 20-February 17, 5 mtgs.

\$30 nonrefundable until January 16;

\$180 nonrefundable until January 19;

no refund thereafter.

David Schamus, MA, CCNA, MCSA, MCSE, MCT, Owner, Byte Back! Training

### ◇ Microsoft Windows 2000/2003 Installation Fundamentals

X 417.95B Management 1 unit \$275

(Includes course materials.)

In this hands-on lab course, students learn to install Windows 2003 Enterprise Server and create an Active Directory domain. Topics include system requirements, licensing, basic networking infrastructure, domains and workgroups, the relationship between Active Directory and DNS, recommendations on disk configuration and RAM, using third-party disk/RAID drivers during setup, member servers versus domain controllers, running DCPromo, and an overview of the administrative tools. Almost all of these topics are applicable to both Windows 2000 and Windows 2003 server environments. Additionally, basic network setup, such as IP addressing, Active Directory namespace, and DNS, are configured. *Prerequisite: Familiarity*

with Windows-based systems. *Enrollment limited; enrollment prior to the first class required.*

#### Reg# S5478B

UCLA: A1-241 School of Public Health

\* Saturday, 8:30am-5pm,

January 13, 1 mtg.

\$30 nonrefundable until January 8;

\$75 nonrefundable until January 12;

no refund thereafter.

David Schamus, MA, CCNA, MCSA, MCSE, MCT, Owner, Byte Back! Training

### ◇ Implementing and Managing Exchange 2003

X 417.95D Management 4 units \$935

Through a combination of lectures, demonstrations, and hands-on labs, this course provides students with the opportunity to install, configure, maintain, and troubleshoot Exchange Server 2003 in a controlled lab environment designed to simulate real-world implementations. The relationship of Active Directory and Exchange, and Exchange topologies that include front-end/back-end servers, are presented. Additionally, students configure and manage recipient objects, address lists, and public folders. Exchange connectors and SMTP virtual server configurations are explored. Exchange maintenance issues are covered, such as monitoring the server and the databases, along with backup and recovery strategies. Finally, some basic strategies for migrating to Exchange 2003 are discussed. *Prerequisite: Students are expected to have a basic understanding of TCP/IP-based networks and Windows Server or NT administration. Students new to networking should take X 417.95 Fundamentals of Administering Windows 2000 and 2003 Servers and X 417.95A Fundamentals of Administering TCP/IP for Windows clients. Enrollment limited; enrollment prior to the first class required. Students should have access to a computer and the Internet during this course.*

#### Reg# S5479B

UCLA: A1-241 School of Public Health

\* Saturday, 9am-5pm,

February 24-March 24, 5 mtgs.

\$30 nonrefundable until February 20;

\$180 nonrefundable until February 23;

no refund thereafter.

David Schamus, MA, CCNA, MCSA, MCSE, MCT, Owner, Byte Back! Training

## Unix/Linux

### ◇ Linux Networking Tools and Techniques: Setup and Configuration

X 417.29A Management 4 units \$650

(Includes course notes.)

This course provides a hands-on introduction to Red Hat Fedora Linux and Red Hat Enterprise Linux ES from the start. General aspects are first presented, including in-class installation, startup, user accounts, shell and graphic interfaces, basic commands, and scripting. TCP/IP networking is then covered, including how to configure it in manual and automated fashion, as well as major tools such as netstat, ping, arp, tcpdump/ethereal sniffers, nmap portscanner, and iptables firewall. The programmatic structure of a standard socket-API client and service program is demonstrated. This provides the basis for covering some combination of specific real-world services. As time allows and student interest dictates, Apache, DNS, NFS, Samba, DHCP, and others are examined. Their configuration is covered from client and server sides, both by directly editing the appropriate configuration files and applying front-end graphical tools. *Enrollment limited.*

#### Reg# S7846B

UCLA: 3260/3351 Franz Hall

Wednesday, 6:30-10pm,

January 10-March 14, 10 mtgs.

David B. Morgan, MBA, Principal, Skydesign Tech Service

#### NEW COURSE

### ◇ The Open Source Commercial Webserver: LAMP Setup and Configuration

X 417.29E Management 2.5 units \$525

This comprehensive workshop integrates the primary elements of commercial open source web servers: Linux operating system, Apache web server, MySQL database, and PHP programming language (LAMP). Apache installation, architecture, and configuration are demonstrated, with students building their own servers hands-on. Apache's authentication and access control features, content negotiation, dynamic content generation, logging, traffic encryption, user tracking, and virtual host support are covered. Protocol analysis (http sniffing) is used to observe the concrete impact of configuration choices. Once grounded in Apache, PHP and MySQL are introduced stand-alone, then integrated with the web server to complete the foundation for a commercial/transaction-based site. *Prerequisite: Basic working knowledge of client/server IP network communication and Unix or Linux is assumed.*

#### Reg# S7966B

UCLA: A1-241 School of Public Health

Monday, 6:30-10pm,

January 8-February 26, 6 mtgs.

(no mtg. 1/15 & 2/19)

David B. Morgan, MBA, Principal, Skydesign Tech Service

### ◇ Introduction to Unix and Linux

X 417.31 Management 4 units \$700

(Includes course materials.)

While Windows dominates the desktop, Unix is the operating system that dominates most other applications—from spacecraft to supercomputers, from embedded machine controllers to running the World Wide Web. Many profound technical advances in the computer industry (now seen everywhere) originally came from Unix systems—and still do. Linux is a version of Unix that runs on PCs and has become so widespread that it is having a substantial impact on the entire computer industry. This hands-on laboratory course provides an introduction to Unix and Linux. Students gain experience with both the Sun Solaris and Red Hat Linux operating systems—two of the most prevalent versions of Unix on the market today. Topics include history and development of Unix, Solaris and Red Hat GUIs, using the vi editor, the Unix file system, basic Unix commands, and running programs (processes) under Unix. Students should leave the course with a set of basic skills for using any Unix-based system. The material applies to all versions of Unix, including Linux and Apple's Mac OS X. *Prerequisite: Basic computer experience on any system. Programming experience is helpful, but not required. Enrollment limited; enrollment prior to the first class required.*

#### Reg# S7847B

UCLA: A1-241 School of Public Health

Tuesday, 6:30-10pm,

Monday 9-March 13, 10 mtgs.

\$30 nonrefundable until January 9;

\$130 nonrefundable until January 23;

no refund thereafter.

Eric Theis, BS, Software Engineer, JPL

### ◇ Unix and Linux Shell Scripting

X 417.39A Management 4 units \$700

This course is for those who want the knowledge and expertise to write professional-quality Unix shell scripts that run flawlessly in any Unix-based environment, including Linux. Guidance and examples are given so students can go beyond the mere "working" scripts to ones that are suitable for delivery as part of a software product. How scripts work, how the shell executes scripts, and how the shell executes individual commands within them are addressed. Instruction includes details of providing interactive scripts as well as how to gracefully handle problems, aborts, and error conditions. A comparison is made of the main Unix shells (sh, ksh, bash, and csh), focusing on how their differences affect writing scripts. The major Unix text-processing tools (sed and awk) also are covered. The course concludes with a brief introduction to the Perl scripting language. Homework and hands-on lab exercises provide practical experience on both Sun Solaris and Red Hat Linux—the two most prevalent versions of Unix on the market today. The material covered applies to all versions of Unix, including Linux and Apple's Mac OS X. *Prerequisite: X 417.31A Intermediate Unix and Linux or consent of instructor.*

\* Course held during daytime hours

 TO ENROLL CALL (310) 825-9971  
or (818) 784-7006

Enrollment limited; enrollment prior to the first class required.

**Reg# S7849B**

UCLA: A1-241 School of Public Health  
Thursday, 6:30-10pm,  
January 11-March 15, 10 mtgs.  
**Eric Theis**, BS, Software Engineer, JPL

◆ **Linux Network Security Tools**

X 417.77 Management 2.4 units \$600  
(Includes course materials.)

*Prerequisite:* X 417.31 Introduction to Unix and Linux, other basic Unix course, or consent of instructor is highly suggested. *Enrollment limited; enrollment prior to the first class required. Students must have web access to retrieve course materials. For more information see page 57.*

**Reg# S8146B**

UCLA: 3290 Franz Hall  
\* Saturday, 9am-5pm,  
March 24 & 31; April 7, 3 mtgs.  
**David A. Sanner**, BS, consultant & CISSP, BluePrint Security

◆ **Introduction to PERL with Applications to CGI Programming**

X 418.104 Management 4 units \$625

*Prerequisite:* Familiarity with at least one high-level computer language (e.g., ASP, Java, JavaScript, Visual Basics, C++, C#, or C). Familiarity with HTML, Unix, and Unix Shell programming is helpful but not required. *Enrollment limited. Requires computer work outside of class. Students should have access to a computer that runs Perl. Students must have web access to retrieve course materials. For more information see page 55.*

**Reg# S7841B**

UCLA: 2434 Franz Hall  
\* Saturday, 9am-1pm,  
January 13-March 17, 9 mtgs.  
(no mtg. 2/17)  
**David Chiao**, MS, Software Engineer, Boeing

**Online Course**

**For more information about online courses, including technical requirements and important enrollment information, see page 146.**

◆ **Unix Systems Security Fundamentals (Online)**

X 417.82 Management 3 units \$550  
(Includes course materials on DVD.)

*Prerequisite:* X 417.31 Introduction to Unix and Linux or equivalent knowledge. *Enrollment limited; enrollment prior to the first class required.* The Unix Systems Security Fundamentals training course workbook is provided on a DVD. Defense-In-Depth: Information Assurance white paper is provided on a DVD. *For more information see page 58.*

**Reg# S4943B**

January 9-February 13  
**Victor Hazlewood**, BS, ISO San Diego Supercomputer Center

**Web Technology and Multimedia**

For more information call (310) 825-4100.  
To enroll call (310) 825-9971 or (818) 784-7006.

**Sequential Program in Web Technology**

This 20-unit sequence offers training in the web technology field and is designed for anyone seeking career-level knowledge in the content/design, technology, and/or management of websites.

**The program offers two specializations: Client-Side Applications and Server-Side Development. Students may select the one that best meets their needs.**

*Program Prerequisites:* For experience in operating systems, take a four-unit course from the Windows or Unix group. For basic HTML exposure, take 818.65 Learning HTML: The Basics of Web Pages.



**Client-Side Applications Specialization Required Courses (12 units):**

- X 418.102A Website Construction with Macromedia Software: Dreamweaver, Flash, and Fireworks (4 units)
- X 418.113+ Web Technology Fundamentals (3 units)
- X 418.60\* Introduction to Client/Server Computing (4 units)
- 818.41 An Introduction to XML (1.6 CEU\*\*)

**Recommended Electives (minimum of 8 units):**

- X 418.62A\* Macromedia Dreamweaver: Introduction to Website Design and Management with Dreamweaver (4 units)
- X 418.62C Macromedia Flash: Multimedia on the Web (1.6 units)
- X 418.62F Fireworks: Macromedia's Graphic/HTML Editor (2 units)
- X 418.86 JavaScript (2 units)

**Server-Side Development Specialization Required Courses (12 units):**

- X 418.104\* Introduction to Perl with Applications to CGI Programming (4 units)
- X 418.113+ Web Technology Fundamentals (3 units)
- X 418.60\* Introduction to Client/Server Computing (4 units)
- 818.41 An Introduction to XML (1.6 CEU\*\*)
- Recommended Electives (8 units):**
- X 414.51\* Relational Database Management (4 units)
- X 418.51 Building the Database-Powered Website (4 units)
- X 418.622 Web/Database Connectivity Using ASP.NET (2.4 units)

\* Offered this quarter.

+Offered this quarter online.

\*\* Comparable to 1 unit.

For more information or to substitute electives call (310) 825-4100.

NEW COURSE

◆ **CSS (Cascading Style Sheets): Mastering a New Level of Page Layout**

X 418.102E Management 2.7 units \$525  
Since HTML's inception, nesting several layers of table tags has been the only option for creating a complex web page layout. Now CSS (cascading style sheet) has evolved into a new de-facto standard sanctioned by the W3C (Worldwide Web Consortium). CSS provides an unprecedented level of customization to build attractive, accessible, and maintainable web-standard-compliant sites quickly and easily. Designed for both beginning designers and programmers, this course begins with a comprehensive introduction to CSS syntax, how to manipulate textual elements (selector, structure, value, fonts, color), and building complex multiple-column designs that approximate the sophisticated and pagination layout of printed magazines. Creating user-interface components (drop-down menus). CSS provides the venues to become more effective web designers by completely replacing all page layout elements previously done with table tags. The problems with browser compatibility, tips and tricks to overcome them, and practical applications that can be put to use immediately are explored. The course also provides discussion of basic selectors, structure, value, precision positioning using floats, negative margins, padding, and improving sitewide management with CSS controls. *Prerequisite:* Proficient understanding of HTML and familiarity with any web authoring program, such as Dreamweaver. *Enrollment limited.*

**Reg# S8145B**

UCLA: 3290 Franz Hall  
Thursday, 6-10pm,  
January 11-February 15, 6 mtgs.  
**Patrick Z. Jia**, MBA, Vice President, Production, Arcadian Internet Consulting Group

◆ This credit course not available on a passed/not passed basis

◆ **Introduction to PERL with Applications to CGI Programming**

X 418.104 Management 4 units \$625

*Prerequisite:* Familiarity with at least one high-level computer language (e.g., ASP, Java, JavaScript, Visual Basics, C++, C#, or C). Familiarity with HTML, Unix, and Unix Shell programming is helpful but not required. *Enrollment limited. Requires computer work outside of class. Students should have access to a computer that runs Perl. Students must have web access to retrieve course materials. For more information see page 55.*

**Reg# S7841B**

UCLA: 2434 Franz Hall  
\* Saturday, 9am-1pm,  
January 13-March 17, 9 mtgs.  
(no mtg. 2/17)  
**David Chiao**, MS, Software Engineer, Boeing

**Macromedia**

NEW COURSE

◆ **Introduction to Flash Actionscript 2.0/3.0**

X 418.102D Management 4 units \$700

Flash as a vector-based animation program has matured considerably in the past few years. The major leap was in Flash MX, when Actionscript (a scripting language) was introduced to further expand, control, and manage increasingly complex animation. In today's market where everyone claims they know how to design with Flash, Actionscript 2.0 has evolved from a simple scripting language to a more robust object-oriented program (OOP) language and magnifies Flash's capability to unprecedented levels. It is the new powerful de facto standard for creating the next generation of exciting web animation, interactivity, rich Internet applications, and online games. This introductory course provides a step-by-step tutorial to assist Flash designers with little programming background and intermediate programmers who are familiar with Flash interface to gain an overall understanding of Actionscript's new capabilities and how to harness them to create dynamic and high-impact Flash applications. Emphasis is placed on basic motion principles—velocity, acceleration, friction, and coordinate rotation. The new features in version 3.0 are discussed as well as additional features that deal with external data and databases. *Prerequisite:* College algebra, ability to understand abstract concepts, and familiarity with Flash MX 2004 and Flash 8 interfaces. *Enrollment limited.*

**Reg# S8144B**

UCLA: 3260/3351 Franz Hall  
Monday, 6:30-10pm,  
January 8-March 26, 10 mtgs.  
(no mtg. 1/15 & 2/19)

**Patrick Z. Jia**, MBA, Vice President, Production, Arcadian Internet Consulting Group

◆ **Macromedia Dreamweaver: Introduction to Website Design and Management with Dreamweaver**

X 418.62A Management 4 units \$700

Dreamweaver is a powerful website design and production package. This hands-on workshop focuses on utilizing all the major components of Dreamweaver, where students learn to build basic web pages. Major topics include site management, HTML tables, image placement, framing, color management, image hot maps, creating hyperlinks, interactive forms, JavaScript, utilizing dynamic HTML, banner advertising, and advanced behavior functions. Students construct and manage live websites and learn to integrate Flash, animated GIFs, and sound in Dreamweaver to create cutting-edge multimedia websites. *Prerequisite:* While a solid understanding of the Internet and Windows is assumed, no knowledge of HTML coding or Dreamweaver is required. *Enrollment limited.*

**Reg# S7842B**

UCLA: 2434 Franz Hall  
Wednesday, 6:30-10pm,  
January 10-March 14, 10 mtgs.

**Dan Hitchcock Vaughan**, BA, Animation and System Software Instructor, Rhythm & Hues

**Online Courses**

**Understanding Data-Driven Web Applications (Online)**

818.41E Management 1.8 CEU \$450  
Data-driven web technologies enable developers to produce dynamic applications that work with web browsers, wireless devices, and telephones. Companies everywhere are using the web application model to provide access to information, regardless of the platform, location, or device being used. This course provides a comprehensive overview of technologies used to develop data-driven web applications. Online lab activities guide students through the process of developing a data-driven web application to list, view, insert, update, delete, search, and browse database records. Topics include core elements of data-driven systems, database fundamentals, understanding SQL, web servers and application servers, HTML forms, dynamic application constructs, delivering wireless content, and delivering voice-driven content. The course concludes with a comparison of web application technologies, such as ASP.Net, Java servlets, JSP, PHP, and Cold Fusion. *For technical requirements see page 146. Enrollment limited; advance enrollment required.*

**Reg# S4937B**

February 20-March 27  
**Charles G. Hollins, Jr.**, BSCIS, Principal, Applied Internet Technology, Inc.

**Learning HTML: The Basics of Web Pages (Online)**

818.65 Management 1.6 CEU \$450  
Although business and personal websites are growing exponentially, most people do not know how to create sites. This online course presents the hypertext markup language (HTML)—the alphabet for creating web pages and takes students from beginning-to-intermediate-skills levels through exposure to various HTML tags, including hyperlinks, email, tables, forms, frames, color, background, inserting graphics, etc. Storyboarding your idea and knowing what makes good navigation in a site is discussed, along with the basic tools required for a site. Other topics include an overview of advanced tools, popular authoring tools, graphic software programs, where to find free space for your personal sites, and shareware and other resources for creating sites, as well as choosing a domain name, the importance of testing, and listing with search engines. This course does not cover Internet basics, TCP/IP, server hardware or software setup, CGI programming, or Internet security. *For technical requirements see page 146. Enrollment limited.*

**Reg# S4938B**

January 8-February 26  
**Maureen F. Backe**, MBA and MEE in Multimedia and Creative Technologies; Internet business and technology consultant

◆ **Web Technology Fundamentals (Online)**

X 418.113 Management 3 units \$550  
The web has experienced an explosive growth from just 50 servers in 1993 to millions to date. Web technology is dramatically influencing most areas of computer technology and greatly affecting how we present, access, and utilize information. This online course is designed for individuals who want an understanding of web technology and its practical applications. Participants learn how to effectively design and assemble a website. Other topics include Internet architecture hypermedia theory, the Internet client/server model, effective design of hypermedia structures, use of graphics, promoting a web presence, and use of web technology for intranets. As a course project, each participant creates a small website consisting of three to five web pages, with graphics and other optional elements. *For technical requirements see page 146. In addition to the standard online technical requirements, students must have an Internet email account. Enrollment limited.*

**Reg# S4944B**

January 12-March 9  
**Dan Hitchcock Vaughan**, BA, Animation and System Software Instructor, Rhythm & Hues

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Use the QUICK ENROLL feature at [uclaextension.edu](http://uclaextension.edu)