Certificate & Course Series Programs

In cooperation with Boston University and Southern Methodist University, NTU offers certificate programs that provide a comprehensive education in key skill areas. These programs include everything you need to become an expert in the series topic.

Upon satisfactory completion of the program, you will receive a certificate of completion from the producing university. Many of the courses also fulfill the education contact-hour requirements for independent certification programs and carry CEUs. In addition, these multi-course certificate series are offered at a lower cost than if each course were taken individually.

NTU also offers individual course series. These series provide the same comprehensive education and a similar discount in various course areas without the certificate.

Certificate Series

Information Technology

Business & Management

Course Series

Information Technology

Open Systems

Open Source UNIX FreeBSD Certificate Series

CEU: 12, Course Length: 120 Hours

This series of courses provides an introduction to UNIX through installation and administration of a multi-function server in a multi-user environment. The series consists of the following three courses:

Introduction to UNIX FreeBSD
UNIX FreeBSD Administration, Part I
UNIX FreeBSD Administration, Part II

This course series is designed to teach the student basic UNIX skills in a command line environment, including basic UNIX skills that apply to any UNIX operating system, as well as to understand the basic design and implementation of the BSD 4.4 UNIX operating system extensions. The student will learn how to install and operate a UNIX-based workstation as a single-user, use the UNIX operating system, install and maintain current open source software on a workstation and server and administer a multi-function server in a multi-user environment. This course includes interaction with an instructor who will respond to questions posted on an electronic forum and will hold periodic chat sessions.

Presenter: Tim Kellers is a UNIX system administrator and information technology liaison for the Division of Continuing Professional Education at NJIT. He is the author of the first curriculum certified by the FreeBSD Foundation that teaches the UNIX operating system within the framework of open source software.

Producer: New Jersey Institute of Technology

Intended Audience: New users of open source software based on the Berkeley Software Distribution.

Prerequisites: Some familiarity with a command line interface.

Delivery Method	Price:	Per Person	Per Site
Online (OL03072599)		$5,400	N/A

IT Professional Development

Advanced Programming in Java Certificate Series

CEU: 3, Course Length: 30 Hours

The Advanced Java Certificate Series provides coverage of the major contemporary areas in which Java is being used. It consists of "Advanced Programming with Java," "Java Programming for Databases" and "Advanced Design in Java."

Presenter: Dr. Victor Shtern is an associate professor at Boston University, where he develops and teaches graduate and undergraduate courses on object-oriented programming for working adults.

Producer: Boston University

Intended Audience: Programmers, software engineers and project managers who want to evaluate Java as a general-purpose object-oriented language and as a language for interactive Web applications.

Delivery Method	Price:	Per Person	Per Site (6+)
Videotape (IT03011499)		$2,339	$11,784
Online (OL03011499)		$1,889	N/A
CD-ROM (CD03011499)		$2,069	N/A

Software Engineering

Software Project Management Certificate Program

CEU: 6.2, Course Length: 62 Hours

This program, designed to improve software management skills, consists of 29 short courses organized into four series.

Software Project Planning Series
Software Project Execution Series
Software Project Measure and Analysis Series
Software Productivity and Quality Engineering Series

Each series is designed to focus on a different aspect of software project management: software project planning, software project execution, software project measurement and analysis, and software productivity and quality engineering. This short course program is based on several courses from the SMU M.S. program in software engineering as well as the SEI Capability Maturity Model. Each short course will include one or more exercises that apply the principles to concrete examples typical of those found in the workplace.

Presenter: Dr. Dennis J. Frailey is a principal fellow at Raytheon Co. and an adjunct professor at Southern Methodist University.

Producer: Southern Methodist University

Intended Audience: Current and prospective software development leads and managers as well as system engineers, software process specialists, managers of disciplines related to software engineering (such as software configuration management) and program managers whose programs have significant software components.

Prerequisites: Experience working with software engineering projects, primarily so the attendee can understand the problems and appreciate some of the practical difficulties. Basic college-level mathematics is also required.

Delivery Method	Price:	Per Person	Per Site
Videotape (WS02100999)		$4,030	N/A
Online (OL01020699)		$3,100	N/A
CD-ROM (CD01020699)		$3,410	N/A

Internet

Rapid Application Web Design Certificate Series

CEU: 1.5, Course Length: 15 Hours

Learn the art of high-tech Web design while using and comparing cutting-edge development tools and technologies. This five-part, 15-hour certification series combines online commentary with off-line activities and tutorials to create real-life Web development scenarios and solutions. The series demonstrates how to use and compare the latest digital imaging tools and technologies and some "RAD"(rapid application development) tools, thereby providing students the skills and knowledge to enhance their expertise. This Series includes "Web Image Creation—Design for the Internet," "Dynamic Navigation," "Interactive Movies," "Bringing It together: Site Creation, Development and Maintenance" and "WrapUp: Design Issues, Functionality and Usability/Project Discussion."

Presenter: Erin Clark is a Dallas-based Web developer, Internet consultant and Web design/e-commerce instructor. She taught advanced-level courses in Web design as part of the Southern Methodist University E-Commerce Certification Program.

Producer: Southern Methodist University

Intended Audience: This series is an intermediate-to-advanced course for Web developers and designers. Any users with a basic knowledge of Web development or multimedia tools can benefit by mastering the tips, tricks, methods and programs of professionals.

Delivery Method	Price:	Per Person	Per Site (6+)
Videotape (IT02031199)		$1,190	$5,940

Internet

Certificate in Server Management

CEU: 9, Course Length: 90 Hours

Presenter: Web-based instruction

Producer: New Jersey Institute of Technology

Delivery Method	Price: Per Person	Per Site
Online (OL01070299)	$3,055	N/A

IT Professional Development

Series Certificate in Internet Technologies and Web Services: A Focus on C# and .NET

CEU: 2.5, Course Length: 25 Hours

This course provides a focus on the concepts and applications of C# and .NET. It consists of the following three courses:

Introduction to Internet Technologies
Introduction to Web Services: XML/XMI, UDDI, SOAP
Components: C# and .NET

The series of three courses provides an introduction to the major current and emerging technologies for the Internet, from CGI and JavaScript to Microsoft's .NET and Web services and the way in which they are used to build Web applications. It explains the following topics: architecture of Web services; review of XML, schemas and XSL; SOAP (simple object access protocol); WSDL (Web services description language); UDDI (universal description, discovery and integration); generating Web services through Java, .NET architecture; C# and Visual Studio.NET; and Sun One architecture and tools. It also introduces the concepts and application of the C# programming language, with an emphasis on .NET and describes .NET assemblies (components) and the means whereby C# is used to create them, including access to metadata.

Presenter: Dr. Eric Braude is an author, professor and consultant to development groups throughout the Northeast. He has taught at Boston University since 1989.

Producer: Boston University

Intended Audience: Software developers, engineers and supervisors involved in, or planning to be involved in, Internet application in whole or part.

Delivery Method	Price: Per Person	Per Site (6+)
Videotape (IT03020499)	$1,989	$9,984
Online (OL03020499)	$1,599	N/A
CD-ROM (CD03020499)	$1,749	N/A

IT Professional Development

Java Programming for Databases Certificate Series

CEU: 2.3, Course Length: 23 Hours

This course emphasizes the use of Java in the storage and retrieval of data. Besides classical database programming in Java, it includes coverage of XML processing and the java.net package. It consists of the following courses:

Introduction to Java Programming
Database Design and Programming in Java
Java and XML
Java .Net & RMI Programming

This course series starts by explaining how Java is different from other programming languages, discusses Java data types, control constructs, functions, classes, class composition and inheritance, applets and applications. It then provides an overview of database systems and writing database access programs using procedural languages such as PL/SQL. It describes how to use Java along with a database system such as Oracle to develop all parts of a database application, including JDBC and SQLJ. The course then introduces the student to XML and the means for processing XML with Java. It includes a discussion of schemas, the document-object model, the SAX parsing process and the transformation of XML into parts that can be incorporated into processing. After completing this course series, the participant will be able to design a simple relational database with two tables, understand structured query language and retrieve data using JDBC and SQLJ. The student will also be able to express documents in XML, specify legal XML forms with schemas, view XML as a DOM object, parse XML, transform XML into usable parts, deal all the parts of an XML expression through Java, specify XML and use Java to process XML input.

Presenters: Dr. Eric Braude is an author, professor and consultant to development groups throughout the Northeast. He has taught at Boston University since 1989. Dr. Victor Shtern is an associate professor at Boston University, where he develops and teaches graduate and undergraduate courses on object-oriented programming for working adults. Dr. Vijay Kanabar is a professor at Boston University, consulting and teaching in the applied areas of IT and project management.

Delivery Method	Price:	Per Person	Per Site (6+)
Videotape (IT03021799)		$1,919	$9,414
Online (OL03021799)		$1,559	N/A
CD-ROM (CD03021799)		$1,699	N/A

IT Professional Development

Series Certificate in Internet Technologies and Web Services: A Focus on Java Beans

CEU: 2, Course Length: 20 Hours

This course provides a focus on the concepts and applications of Java beans. It consists of the following three courses:

Introduction to Internet Technologies
Introduction to Web Services: XML/XMI, UDDI, SOAP
Components: Java Beans

The series of three courses provides an introduction to the major current and emerging technologies for the Internet, from CGI and JavaScript to Java Beans and Web services and the way in which they are used to build Web applications. It explains the following topics: architecture of Web services; review of XML, schemas and XSL; SOAP (simple object access protocol); WSDL (Web services description language); UDDI (universal description, discovery and integration); generating Web services through Java, .NET architecture; C# and Visual Studio.NET; and Sun One architecture and tools. It also discusses the life cycles of Beans, as well as how to build applications using them. A demonstration is provided of how Beans is used in a visual environment, followed by a review of Enterprise Java Beans. Course participants will understand Java Beans and be able to begin applying them in a reusable manner to build applications.

Presenter: Dr. Eric Braude is an author, professor and consultant to development groups throughout the Northeast. He has taught at Boston University since 1989.

Producer: Boston University

Intended Audience: Software developers, engineers and supervisors involved in, or planning to be involved in, Internet application in whole or part.

Delivery Method	Price:	Per Person	Per Site (6+)
Videotape (IT03030399)		$1,899	$9,894
Online (OL03030399)		$1,599	N/A
CD-ROM (CD03030399)		$1,749	N/A

IT Professional Development

Advanced Design in Java Certificate Series

CEU: 2, Course Length: 20 Hours

This two-course series is intended to educate students in the elements of object-oriented design. It covers object-oriented analysis and design, as well as the useful design pattern techniques. It consists of the following courses:

Design Patterns
Object-Oriented Analysis & Design

This course covers a majority of the significant design patterns. Most of the design patterns that were introduced by Gamma, et al, in their classic text are covered. In addition, the course includes a description of object-oriented software requirements, architectures and frameworks, UML and the use of architectural design patterns. It also includes concurrency considerations, design for data persistence, user interface accommodation and refactoring. Series participants will be able to apply design patterns in their work through appreciating how design patterns can satisfy many design goals, differentiating among the three main categories of design patterns and applying many of the design patterns to real-world problems. Participants will improve their ability to specify requirements, create more effective designs and express them using a recognized, widely accepted notation.

Presenter: Dr. Eric Braude is an author, professor and consultant to development groups throughout the Northeast. He has taught at Boston University since 1989.

Producer: Boston University

Intended Audience: Software developers, engineers and supervisors involved in, or planning to be involved in, application development using OO methods, languages or tools.

Prerequisites: Significant exposure to an object-oriented language such as Java or C++. The code examples will be Java.

Delivery Method	Price:	Per Person	Per Site (6+)
Videotape (IT03030599)		$3,498	$19,488
Online (OL03030599)		$3,198	N/A
CD-ROM (CD03030599)		$3,318	N/A

IT Professional Development

Internet Technologies and Web Services Certificate Series

CEU: 6, Course Length: 60 Hours

The Internet Technologies and Web Services Certificate Series provides coverage of the major current and emerging technologies used for the Internet and Web services. The series consists of two course series:

Certificate in Internet Technologies & Web Services: Focus on Java Beans

Certificate in Internet Technologies & Web Services: Focus on C# and .NET

The series provides an introduction to the major current and emerging technologies for the Internet, from CGI and JavaScript to Microsoft's .NET to Java Beans and Web services and the way in which they are used to build Web applications. It explains the architecture of Web services; reviews XML, schemas and XSL; SOAP (simple object access protocol); WSDL (Web services description language); UDDI (universal description, discovery and integration); generating Web services through Java, .NET architecture; C# and Visual Studio.NET; and Sun One architecture and tools. It introduces the concepts and application of the C# programming language, with an emphasis on .NET and describes .NET assemblies (components). It discusses the life cycles of Beans, as well as how to build applications using them. Course participants will understand C++, .NET, and Java Beans and be able to begin applying them in a reusable manner to build applications.

Presenter: Dr. Eric Braude is an author, professor and consultant to development groups throughout the Northeast. He has taught at Boston University since 1989.

Producer: Boston University

Intended Audience: Software developers, engineers and supervisors involved in, or planning to be involved in, Internet application in whole or in part.

Delivery Method	Price:	Per Person	Per Site (6+)
Videotape (IT03011488)		$4,098	$20,088
Online (OL03011488)		$3,198	N/A
CD-ROM (CD03011488)		$3,498	N/A

IT Professional Development

Advanced Java Certificate Series

CEU: 8.7, Course Length: 87 Hours

The Advanced Java Certificate Series provides coverage of the major contemporary areas in which Java is being used. It consists of the following three series:

Advanced Programming in Java Certificate Series
Java Programming for Database Certificate Series
Advanced Design in Java Certificate Series

This series is intended to educate students in the elements of object-oriented design. It covers object-oriented analysis and design, as well as the useful design pattern techniques. It also emphasizes the use of Java in the storage and retrieval of data. Besides classical database programming in Java, it includes coverage of XML processing and the java.net package.

Presenters: Dr. Eric Braude is an author, professor and consultant to development groups throughout the Northeast. He has taught at Boston University since 1989. Dr. Victor Shtern is an associate professor at Boston University, where he develops and teaches graduate and undergraduate courses on object-oriented programming for working adults. Dr. Vijay Kanabar is a professor at Boston University, consulting and teaching in the applied areas of IT and project management.

Intended Audience: Programmers, software engineers and project managers who want to evaluate Java as a general-purpose object-oriented language and as a language for interactive Web applications.

Prerequisites: Significant exposure to an object-oriented language such as Java or C++. The code examples will be Java.

Delivery Method	Price: Per Person	Per Site (6+)
Videotape (IT03020488)	$6,027	$29,562
Online (OL03020488)	$4,707	N/A
CD-ROM (CD03020488)	$5,147	N/A

Project Management

Boston University Project Management Excellence Certificate Program (Module 1 – 4, without PMP Exam)

CEU: 3.3, Course Length: 33 Hours

This certificate series, which includes "Preparing for the PMP Exam,"can be taken only as a complete program. There are four modules to this series:

Project Management Philosophy & Structure
Project Management Leadership, Teams & Communication
Project Time and Cost Management
Project Risk Assessment and Management

The series provides a basic overview of the project management function, covering the fundamentals of effective project planning and control and the role of process in project management. It offers insight to the organization of the future, gives you tools to navigate the political landmines and to assess and maximize your communication style to win the confidence of your peers. Participants are introduced to a comprehensive view of time and cost of management as defined by the project management body of knowledge (PMBOK), including activity duration estimating, resource planning, cost estimating and cost budgeting and control. The series introduces the participant to the fundamentals of project risk analysis and management. Participants gain an understanding of project risk and the systematic breakdown of risk management processes as set forth by the PMBOK.

Presenters: Phil Ventresca, M.B.A., has more than 20 years of project management and general management experience. Tom Flynn, P.E., P.M.P., has 20 years of project management experience, with a background in construction and professional engineering. Michael McCourt, is a consultant at Advanced Management Services, Inc.

Producer: Boston University

Delivery Method	Price: Per Person	Per Site
Videotape (BC02082799)	$3,805	N/A
Online (OL02011599)	$3,295	N/A
CD-ROM (CD02011599)	$3,465	N/A

Project Management

Boston University Project Management Excellence Certificate Program (Module 1 – 5, with PMP Exam)

CEU: 4.5, Course Length: 45 Hours

This certificate series, which includes "Preparing for the PMP Exam,"can be taken only as a complete program. There are five modules to this series:

Project Management Philosophy & Structure
Project Management Leadership, Teams & Communication
Project Time and Cost Management
Project Risk Assessment and Management
Preparing for the PMP Exam

The series provides a basic overview of the project management function, covering the fundamentals of effective project planning and control and the role of process in project management. It offers insight to the organization of the future, gives you tools to navigate the political landmines and to assess and maximize your communication style to win the confidence of your peers. Participants will be introduced to a comprehensive view of time and cost of management as defined by the project management body of knowledge (PMBOK), including activity duration estimating, resource planning, cost estimating and cost budgeting and control. The series introduces the participant to the fundamentals of project risk analysis and management. Participants gain an understanding of project risk and the systematic breakdown of risk management processes as set forth by the PMBOK. Finally, the series prepares the participant for PMI's Project Management Professional (PMP) exam.

Presenters: Phil Ventresca, M.B.A., has more than 20 years of project management and general management experience. Tom Flynn, P.E., P.M.P., has 20 years of project management experience, with a background in construction and professional engineering. Michael McCourt, is a consultant at Advanced Management Services, Inc.

Producer: Boston University

Delivery Method	Price: Per Person	Per Site
Videotape (BC02082798)	$4,385	N/A
Online (OL02011598)	$3,695	N/A
CD-ROM (CD02011598)	$3,925	N/A

Integrated Circuits

Practical Verilog for Simulation and Synthesis Series

CEU: 1, Course Length: 10 Hours

This series, which includes hands-on lab sessions, provides a practical knowledge of Verilog for simulation and synthesis. In these courses, the emphasis has been put on those parts of Verilog that are more frequently used and are more applicable to practical designs. To prepare students for more complex designs, a session of this course contains an overview of the complete Verilog language. The second course presents Verilog for synthesis of digital systems and advanced Verilog topics. A session in this course covers system tasks for test-benches and timing checks. The course shows design, simulation, and synthesis of a complete design.

Presenter: Dr. Zainalabedin Navabi is an adjunct professor of electrical and computer engineering at Northeastern University.

Producer: Northeastern University

Intended Audience: Engineers, scientists and instructors who are already familiar with digital system design.

Delivery Method	Price:	Per Person	Per Site (6+)
Videotape (EN03011399)		$800	$4,050
Online (OL03011399)		$650	N/A
CD-ROM (CD03011399)		$710	N/A

Integrated Circuits

Practical VHDL for Simulation and Synthesis Series

CEU: 1, Course Length: 10 Hours

Combined with hands-on labs, this series provides a practical knowledge of VHDL for simulation and synthesis. Emphasized are those parts of VHDL that are more frequently used and are more applicable to practical designs. The first course presents basics and elements of VHDL by use of simple examples. To prepare students for more complex designs, a session of this course contains an overview of the complete VHDL language, VHDL operators, and IEEE design packages. The second course presents VHDL for synthesis of digital systems and advanced VHDL topics. A session in this course covers advanced topics like TEXTIO and system attributes for test-benches and timing checks. The course shows design, simulation and synthesis of a complete design.

Presenter: Dr. Zainalabedin Navabi is an adjunct professor of electrical and computer engineering at Northeastern University.

Producer: Northeastern University

Intended Audience: Engineers, scientists and instructors who are already familiar with digital system design.

Delivery Method	Price:	Per Person	Per Site (6+)
Videotape (EN03012299)		$800	$4,050
Online (OL03012299)		$650	N/A
CD-ROM (CD03012299)		$710	N/A

Internet

Web Master Certificate Series

CEU: 9, Course Length: 90 Hours

This series of courses provides a comprehensive introduction to Web authoring, development and management. The series consists of the following three courses:

Web Author
Web Developer
Web Manager

This series introduces students to HTML programming, provides a foundation in scripting, Java and database management as well as Web manager roles and responsibilities. The student will learn how to code simple Web pages prior to using front-end applications for higher-level programming, use Perl scripting, CGI scripting, Java, and Database Management tools. It also covers Web server configuration and administration, site administration, FTP administration, Web scripts, gateways, and forms, Web searching and log files analysis, server security, and various facets and requirements of digital commerce. This course includes interaction with an instructor who will respond to questions posted on an electronic forum and will hold periodic chat sessions based on the needs of the students enrolled in the class.

Presenter: Thomas Judge is a computer systems expert with over 20 years of experience in technology development and training. He currently teaches at New Jersey Institute of Technology.

Producer: New Jersey Institute of Technology

Intended Audience: Students interested in Web programming and developing.

Prerequisites: Students should have some general computer knowledge prior to taking this course.

Delivery Method	Price:	Per Person	Per Site
Online (OL03070199)		$2,700	N/A

Internet

State-of-the-Art Web Page Development Series

CEU: 1.5, Course Length: 15 Hours

This course contains five self-contained seminars that bring the student to an understanding of new Web technologies and the process of designing and developing Web pages. The first seminar is "Understanding the DOM,"a key technology. Next is "Advanced JavaScript," which covers more advanced concepts such as time-lining a Web page and capturing user events on a Web page. Next, "Dynamic Positioning on a Web Page" shows how to position elements on a Web page and change their properties. "Adding Interactivity to Web Pages" brings all of this together to build interactive Web sites. Finally, in "Creating Cross-Browser Web Applications," the student will learn how to create an application using all of the previous technologies.

Presenter: Kevin Hanegan is a software engineer at Raytheon Co. and is a part-time instructor in the MIS and state-of-the-art departments at Northeastern University.

Producer: Northeastern University

Intended Audience: This series is intended for Web designers who have a working knowledge of Web programming who want to create state-of-the-art Web page applications for both Netscape and Internet Explorer.

Prerequisites: These seminars assume some basic knowledge of JavaScript and cascading style sheets. Viewers who are not familiar with any of these technologies before hand, can take NTU's six-hour DHTML overview, "Introduction to DHTML."

Delivery Method	Price:	Per Person	Per Site
Online (OL01072499)		$900	N/A
CD-ROM (CD01072499)		$980	N/A

Programming Languages

Component—Java Beans and C#

CEU: 1, Course Length: 10 Hours

This series introduces the concepts and applications of the C# (Sharp) programming language, with an emphasis on Java Beans and .NET. Upon completion of this course, learners will understand the goals of C#, be able to apply basic C# syntax, and define classes, objects and components in C#. Additionally, they will be able to understand the Bean concept, build Java Beans in a visual environment, build applications in a visual environment, and understand the goals and architecture of Enterprise Java Beans.

Presenter: Dr. Eric Braude is an author, professor and consultant to development groups throughout the Northeast.

Producer: Boston University

Intended Audience: Software developers, engineers and supervisors involved in, or planning to be involved in, application development using the next generation of Microsoft development tools.

Prerequisites: Basic understanding of C++ and Java

Delivery Method	Price: Per Person	Per Site (6+)
Videotape (IT02072699)	$830	$4,080

Software Engineering

Software Project Planning Series

CEU: 2, Course Length: 20 Hours

This is the first sub-series in the Software Project Management Certificate Program. Each short course includes one or more exercises that apply principles to concrete examples similar to those found in the workplace. The individual courses are "Software Management Overview," "Software Job Analysis," "Initial Software Planning," "The Work Breakdown Structure," "Software Size Estimating, Part 1—Fundamentals and Bottom-up Methods," "Software Size Estimating, Part 2—Top-down Methods and Reuse," "Software Effort and Cost Estimating, Part 1—Basic Methods," "Software Effort and Cost Estimating, Part 2—Estimation Models and Negotiation," "Software Schedule Estimating and Planning" and "Software Development Plans."

Presenter: Dr. Dennis J. Frailey is a principal fellow at Raytheon Co. and an adjunct professor at Southern Methodist University.

Producer: Southern Methodist University

Intended Audience: Current and prospective software development leaders and managers as well as system engineers, software process specialists, managers of disciplines related to software engineering (such as software configuration management) and program managers whose programs have significant software components.

Prerequisites: Experience working with software engineering projects, primarily so the attendee can understand the problems and appreciate some of the practical difficulties. Basic college-level mathematics is also required.

Delivery Method	Price: Per Person	Per Site
Videotape (WS02100991)	$1,550	N/A
Online (OL00070199)	$1,250	N/A
CD-ROM (CD00070199)	$1,350	N/A

Programming Languages

EXtensible Markup Language (XML)—A Four-Course Series

CEU: 1.4, Course Length: 14 Hours

Introduction to XML: Overview
Introduction to XML: XSL, XML Parsers and Web Services
XML Development: Data Modeling, SAX and DOM
XML Development: XSLT, JDOM and Advanced Functions
Java Network and RMI Programming

Every new technology generates a lot of hype. XML is one of the rare few that has been able to back up its claims. Accordingly, major corporations, including Microsoft, Sun and IBM are flocking to XML and making it a focal point of their business. The reason is simple: XML creates a globally accepted standard for describing data in a way that can be shared with any application, running on any computing platform, anywhere in the world—and beyond. (NASA is also using XML). The best part is that XML does not require dramatic changes to your internal structure and processes. However, to fully take advantage of XML's power and flexibility, users also need to know the various associated technologies. This series is aimed at concisely defining the individual pieces of the XML puzzle and showing participants how they fit together to create business solutions.

Presenter: Ashish Soni is a lecturer in the Information Technology Program at the University of Southern California.

Producer: University of Southern California

Intended Audience: UNIX, Linux and Windows administrators; software engineers, analysts, Web developers and programmers who are interested in going from a power user to a programmer with advanced skills in XML.

Delivery Method (10+)	Price: Per Person	Per Site
Videotape (IT03012199)	$1,460	$12,710
Online (OL03012199)	$1,250	N/A
CD-ROM (CD03012199)	$1,320	N/A

Programming Languages

Programming in Perl—A Four-Course Series

CEU: 2, Course Length: 20 Hours

Perl is a powerful, object-oriented scripting language used extensively with UNIX, Linux, Win32 and the Internet. Perl's rich set of operators makes it easy to write concise, robust data manipulation programs and reusable tools. This series consists of the following courses:

Introduction to Perl: Variables, Subroutines and Structures
Introduction to Perl: Files, Modules and Regular Expressions
Perl Programming for the Web: CGI Scripts
Perl Programming for the Web: Database Driven Applications

By the end of the series, the student will be able to quickly create effective, reusable Perl scripts, take full advantage of Perl 5's many small operators, structure code with subroutines and built-in functions, work with pipes and streams, write scripts in Perl that connect to and access relational databases, manipulate flat-file and database management (DBM) databases, execute SQL statements from Perl using database interface (DBI) module, create Perl CGI scripts to process Web queries and retrieve data from databases to create dynamic Web content.

Presenter: Ashish Soni is a lecturer in the Information Technology Program at the University of Southern California.

Intended Audience: UNIX, Linux and Windows administrators; software engineers; analysts; Web developers; programmers and anyone who wants to learn Perl to develop powerful applications.

Prerequisites: All four modules assume basic programming experience.

Delivery Method (10+)	Price: Per Person	Per Site
Videotape (IT03030499)	$1,650	$13,800
Online (OL03030499)	$1,350	N/A
CD-ROM (CD03030499)	$1,450	N/A