EDUCTIVE - UCLA Extension

CF 042 System Analysis Certificate

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.

Courses

Required	Units
MGMNT X 414.51 Relational Database Management Microsoft Visio Professional 2010 available to students. Understanding client-relational database design is vital to system design and implementation. Learn relational database technology, data modeling, SQL, data normalization, and the translation of logical designs to physical storage structures. Additional topics include indexes, storage management, transactions, database integrity, concurrency control, recovery, client/server relational database management, and query optimization.	4.00
MGMNT X 414.20 Business Programming and Software Development This comprehensive introduction to computer programming and software development, with an emphasis on business applications, benefits anyone who plans to pursue programming and software development as a career. This course also benefits individuals working in the IT field with programmers and systems analysts in important areas that precede actual programming, including problem-solving approaches; specifications and requirements; user interface design; and structured program design using such tools as hierarchy, Nassi-Schneiderman, and UML charts. Instruction covers programming concepts common to modern languages are covered, including C, C#, Java, Visual Basic, and shell scripting, as well as programming fundamentals such as variables and expressions; flow of control, including looping and selection; event-driven programming in the Windows .NET environment; file processing; and modular development. Students learn the development cycle, including unit test and integration, alpha/beta testing, and software defect tracking and classification, as well as review C#, Java, and SQL programming examples. By course's end, students create procedural programs (using C as the example language) and object-oriented programs (using Visual Basic) as well as produce small business applications in these two environments plus a commercial-level application. This introductory course requires weekly programming assignments and prepares students for future coursework in C, C++, C#, Java, Visual Basic, or any other high-level language	4.00
MGMNT X 414.61 Using Structured Query Language (SQL) Syntax Structured Query Language (SQL) is an American National Standards Institute (ANSI) standard computer language for accessing and manipulating database systems. SQL works with such database programs as Microsoft Access and SQL Server, DB2, Informix, Oracle, and Sybase. Designed for individuals with little or no SQL experience, this hands-on course covers SQL syntax. Students receive an overview of SQL and learn how to use SQL statements to retrieve and update data in a database. Students begin by creating basic select statements and progress into the more advanced detailed and complex features of SQL, including using keywords such as SELECT, UPDATE, DELETE, INSERT, WHERE, and others. The course also covers table joins, sub-queries, if and case statements, cast and covert statements, and much more	4.00
MGMNT X 417.71 Introduction to Information Security Concepts Benefiting auditors, system administrators, Web developers, or anyone requiring a basic	4.00

understanding of information security, this course provides a grand tour of the theory and technology underlying information security. Learn about human factors and security technology through a series of topics that include security policies, security awareness, risk analysis, access control concepts, authentication technology, cryptography, secure software development, and network security. Hands-on exercises reinforce course material.	2

MGMNT X 417.96 Network Communications with TCP/IP

Learn network communications, from the basics of network topologies, OSI layering, and Ethernet to networking hardware and packet switching fundamentals. The course focuses on TCP/IP and its plethora of protocols and services. Topics also include IP addressing, routing, switching, reliable data transfer, and congestion management. Students study many TCP/IP services, including DNS, DHCP, and VPN. Instruction also reviews network security as well as application layer protocols (such as HTTP, FTP, and email) and client/server network applications. The course provides hands-on examples using Windows, Linux, and Solaris. Students also learn how networks and TCP/IP work, and how to work TCP/IP.	4.00

Prerequisite: While no experience in data communications is needed, students should have a good background in computing with experience installing and operating Microsoft Windows or Unix (such as Solaris or Linux).

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

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, it also is an excellent first-time programming language to learn. This hands-on course presents the fundamentals of programming using Java and covers object-oriented programming, classes, constructors, flow control statements, data types, methods, inheritance, data hiding, abstraction, and the Java library. Students gain experience through a number of programming projects during the course and instruction stresses practical programming skills to prepare them for follow-on Java courses.	4.00

Prerequisite: 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.

Electives (8.00 units from the following list)	**Units**

MGMNT X 414.56 Advanced Database Management Concepts

Designed for individuals with a basic understanding of data modeling, logical database design, and relational database management systems, this course introduces important considerations in database application development and various technologies that, when combined with recent developments in relational database technology, have made possible database publishing on the Internet. Topics include review of EER modeling, object-oriented concepts and modeling, introduction to data warehousing, client/server and Internet database environments, introduction to OLAP, enterprise database application development, distributed and object-oriented database processing, and an introduction to Sun Microsystems J2EE and Enterprise JavaBean (EJB) technologies.	4.00

Prerequisite: X 414.51 Relational Database Management or consent of instructor.

MGMNT X 414.65 Advanced Structured Query Language (SQL) Syntax

Structured Query Language (SQL) is an American National Standards Institute (ANSI) standard computer language for accessing and manipulating database systems. It works with such database programs as MS Access, DB2, Informix, MS SQL Server, Oracle, and Sybase. Designed for those with some knowledge of SQL, this hands-on course covers advanced SQL statements used in inserting, retrieving, and updating data in a database. Students learn how to use advance features of SQL commands, including using operators such as IN, AND, OR, BETWEEN, LIKE, DISRINCT, AGGREGATE, CONCAT, SUBSTRING, HAVING and others. In addition, instruction covers advanced usage of table joins, sub-queries, if and case statements, and cast and covert statements, as well as stored procedures, triggers, functions, and cursors.	4.00

You also learn how to stream text into a field, retrieve and send results in email, create search function using full text index, and create pivot tables with hyperlinks.

Prerequisite: X 414.61 Using Structured Query Language (SQL) Syntax; some experience in SQL; or consent of instructor.

MGMNT X 417.71AA Advanced Security Concepts
This course is a continuation of X 417.71 Introduction to Information Security Concepts. The goal is to better prepare students who plan to pursue a career in information security or to take the CISSP (Certified Information Systems Security Professional) examination. Topics include physical security, legal and regulatory issues, formal security models, and security evaluation. Cryptography, access control, and network security are given broader coverage. The course also includes practical exercises to provide hands-on experience in security topics. *For technical requirements click here.*

4.00

Prerequisite: X 417.71 Introduction to Information Security Concepts or consent of instructor.

MGMNT X 418.74 Object-Oriented Analysis Methods and the Unified Modeling Language (UML)
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.

3.00

Prerequisite: No programming experience is assumed, although it is helpful to have worked on software engineering problems in real-world projects.

MGMNT X 418.31C Agile Project Management
For professionals who are or have worked on high-technology projects--especially those involving software/hardware and systems development and integration. This is a management techniques course. In this course, learn skills and techniques for managing knowledge-based projects and programs using agile methods. Students gain competence in fast iterative delivery, teamwork, collaboration, and in improving productivity. Instruction focuses on SCRUM and Kanban--2 cutting-edge agile methods in use today. Students also learn how agile is different than traditional techniques. This course is invaluable for those transitioning from traditional to agile and lean development. Agile methods in management of projects and programs gain more and more momentum every day. The recent pilot launch of the Agile Certification by the PMI is a key testimony to the value of these methods. In addition to software development, this course is applicable to projects and programs.

4.00

Electives

In addition to the 24 units of required core coursework, students must successfully complete a minimum of 8 units in elective coursework. Any course in information systems offered by UCLA Extension may be applied as an elective toward this program (upon approval of the program advisor).