



UCIRVINE | EXTENSION

Information Technology

Software Architect

Certificate Program

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Software Architect Certificate Program

The Software Architect Certificate Program helps software application developers gain the knowledge and skills needed to design the architecture of complete software solutions. While applications developers or programmers tend to be more concerned with the functionality of individual components, software architects need to understand the business purpose and desired outcomes of a software project from a global perspective, and be able to define how the various components (or objects) fit together.

Certificate Requirements: A certificate is awarded by UCI Extension to candidates who complete four required courses and two elective courses with a "C" or better.

Certificate Courses:

Required Courses:

I&CSCI X472.05	Developing Software System Models and Performing Tradeoff Analysis (2 units)
I&CSCI X429.02	System Performance Modeling (2.5 units)
I&CSCI X471.91	Object Oriented Analysis & Design (3 units)
Mgmt X481.3	Documenting and Analyzing User Requirement (2.5 units)
Mgmt X442.28	Introduction to Project Management Principles and Practices (2.5 units)

Elective Course:

I&CSCI X472.06	Software Architect Project (3 units)
Mgmt X451.13	Effective Communication for Technical Managers (1 unit)

Required Course Descriptions

Object Oriented Analysis & Design

I&CSCI X471.91 (3.0 Units)

This course provides an overview of systems analysis with an emphasis on the systems approach in developing computer solutions to meet the business needs of an organization. Topics include the design life cycle, performing requirements analyses, integrating separate parts into a system, and understanding how technology solutions support business activities. The course emphasizes examples and case studies focusing on the design, development, and deployment of business solutions employing computer systems.

Documenting and Analyzing User Requirements

MGMT X481.3 (3.0 Units)

This course focuses on the analysis and documentation of requirements and the role of the business analyst. Topics include: capturing requirements in a business requirements document; project vision and scope; identifying users; types of requirements; elicitation techniques (context diagram, concept of operations etc); structuring end user requirements; and documenting user requirements.

Developing Software System Models and Performing Tradeoff Analyses

I&CSCI X472.05 (2.0 Units)

This course provides an overview of fundamental systems concepts and modeling techniques with a focus on software development. Students learn how to develop models that they can use to evaluate alternative implementations of software solutions with the goal of determining the best design for specified requirements. Students will also become familiar with common architectural modeling and diagramming methods as well as quality factors and attributes associated with architectural design.

System Performance Modeling

I&CSCI X429.02 (2.5 Units)

Learn the fundamental techniques of system modeling and performance evaluation. This course reviews fundamental concepts including queuing theory and Markov chains, and explores the application of these techniques to computer networking and architecture. The course also includes a survey of metrics and computational techniques for the analysis and assessment of system performance.

Introduction to Project Management Principles and Practices

MGMT X442.28 (2.5 Units)

Project management has been proven to be the most effective method of delivering products within cost, schedule, and resource constraints. This intensive and hands-on course gives you the skills to ensure your projects are completed on time and on budget while giving the user the product they expect. You will gain a strong working knowledge of the basics of project management and be able to immediately use that knowledge to effectively manage work projects. At the end of the course you will be able to identify and manage the product scope, build a work breakdown structure, create a project plan, create the project budget, define and allocate resources, manage the project development, identify and manage risks, and understand the project procurement process.

Elective Course Description

Software Architecture Project

I&CSCI X472.06 (3.0 Units)

This capstone course allows students to practice using a wide cross-section of the techniques and concepts they have learned in the program. Students will implement a systems-oriented project under the instructor's guidance from start to finish.

Effective Communications for Technical Managers

MGMT_X451.13 (1.0 Unit)

Effective communicators know their audiences' needs and expectations at the outset. This course helps you polish your communications skills and tailor your content and style appropriately for different audiences and different communication styles. You'll learn how to be effective with technical staff members who need clear, concise, and detailed instructions so they can perform their work in a manner that meets your expectations, and with upper management, who need to understand the effect of your work on the company's goals and objectives. The course also covers the use of graphical elements to underscore your message as well as presentation skills that can help you achieve maximum results.