UCLA Extension

System Analysis Certificate

32 UNITS - 3 QUARTERS

To ensure that our programs and courses reflect the most current and relevant academic content, **you will be required to complete your program requirements within five years,** including any courses taken prior to establishing candidacy if you wish them to count toward your requirements.

This certificate provides training in analysis and design of information systems. The program prepares students to perform information systems requirements analysis, design, development, installation, and operation as well as testing and documentation. Courses include computer network communication protocol TCP/IP, database management, network security, and operating systems.

This program is perfect for...

- Aspiring system analysts
- Those who want to solve business problems using information technology
- Those with little to no technical background looking to transition to careers in IT.

What you can learn.

- Explore risk analysis, cryptography, and network security fundamentals
- Learn relational database technology, data modeling, SQL, data normalization
- Get a comprehensive introduction to computer programming and software development
- Learn to use SQL statements to retrieve and update data in a database
- Master fundamentals of Java programming

UCLA Extension

Courses

1 course = 4 units

6 Required Courses

Students must successfully complete 24 units of required coursework

Java Programming I COM SCI X 418.85A
Fundamentals of Software Development COM SCI X 414.20
Relational Database Management COM SCI X 414.51
Introduction to SQL COM SCI X 414.61
Typically Offered: Fall, Winter, Spring, Summer
Network Communications with TCP/IP COM SCI X 417.96
Fundamentals of Cybersecurity COM SCI X 420.1

Choose 2 Electives courses

In addition to required core coursework, students must successfully complete 8 units of elective coursework. Any course numbered X 400-499 in the COM SCI discipline may be applied as an elective toward this program.
Data Science Fundamentals COM SCI X 450.00
Typically Offered: Fall, Winter, Spring, Summer
Digital Technology Internship COM SCI X 460.100
Typically Offered: Fall, Winter, Spring, Summer
Web Information Management COM SCI XLC 246
Neural Networks Using Tensorflow COM SCI X 450.8
Data Analysis Using Python COM SCI X 418.106
Numerical Computing Using Python COM SCI X 418.107
Learning and Reasoning with Bayesian Networks COM SCI XLC 262A
Machine Perception COM SCI XLC M268
Java Programming I COM SCI X 418.85A
Java Programming III COM SCI X 418.85C
JavaScript COM SCI X 418.88B
Introduction to PHP with MySQL COM SCI X 419.39
Using FPGAs in Embedded Systems COM SCI X 457.55B
Internet Architecture and Protocols COM SCI XLC 217A
Databases and Knowledge Bases COM SCI XLC 240A
Website Development with Adobe Software: Photoshop, Dreamweaver, and Animate
HTML and CSS COM SCI X 418.102AB
Python Programming I COM SCI X 418.104B
iPhone and iPad Application Programming COM SCI X 418.104D
Google Android Development COM SCI X 418.104F
Intermediate Google Android Development COM SCI X 418.104G
Programming in C# for Visual Studio .NET Platform I COM SCI X 418.735
Programming in C# for Visual Studio .NET Platform II COM SCI X 418.735A

UCLA Extension

Fundamentals of Software Development COM SCI X 414.20
C++ Fundamentals for Visual Studio .NET COM SCI X 418.735B
Relational Database Management COM SCI X 414.51
Advanced Database Management Concepts COM SCI X 414.56
Introduction to SQL COM SCI X 414.61
Typically Offered: Fall, Winter, Spring, Summer
Advanced Structured Query Language (SQL) Syntax COM SCI X 414.65
Advanced Linux/Unix: Networking COM SCI X 417.29A
Network Communications with TCP/IP COM SCI X 417.96
Java Programming II COM SCI X 418.100
Advanced Computer Networks COM SCI XLC 218
Machine Learning Algorithms COM SCI XLC 260
Fundamentals of Cybersecurity COM SCI X 420.1
3D Real-Time Animation COM SCI XLC 172
Information Systems Infrastructure Security Management COM SCI X 420.3
Multi-Player Games COM SCI XLC 188
Network, Operating System, and Database Security COM SCI X 420.5
Network Protocol and Systems Software Design for Wireless and Mobile Internet
COM SCI XLC 211
Cybersecurity Regulatory Compliance COM SCI X 420.7
Computer Security COM SCI XLC 236
Cybersecurity Lab (Offensive Tools) COM SCI X 420.8
Big Data Analytics COM SCI XLC 249
Cybersecurity Lab (Defensive Tools) COM SCI X 420.9
Introduction to Data Science COM SCI X 450.1
Typically Offered: Fall, Winter, Spring, Summer
Exploratory Data Analysis and Visualization COM SCI X 450.2
Typically Offered: Fall, Winter, Spring, Summer
Hadoop and Managing Big Data COM SCI X 450.3
Typically Offered: Fall, Winter, Spring, Summer
Machine Learning Using R COM SCI X 450.4
Typically Offered: Fall, Winter, Spring, Summer
Predictive Analytics COM SCI X 450.7
Architecting Cloud Solutions Using AWS COM SCI X 460.1
Operating Systems Principles COM SCI XLC 111
Computer System Modeling Fundamentals COM SCI XLC 112
Computer Network Fundamentals COM SCI XLC 118
Database Systems COM SCI XLC 143

Instructor: Keith Jefferies

redits:MBA, President, ComputerUp

Senior Instructor Keith Jefferies has enjoyed a multi-faceted career in the IT and IT education fields for several decades. He has taught thousands of students at UCLA Extension, and co-authored an internationally recognized programming

textbook with fellow UCLA Extension instructor Fred Zerez. A graduate in Mathematics/Computer Science from UCLA, and Management/Computer Information Systems from UCLA's Anderson School of Management, Mr. Jefferies has worked in the field of software development, from programming and software quality assurance to web design and product management. His professional career has spanned notable companies, such as IBM, Ashton-Tate, and RAND. For the past two decades, Mr. Jefferies has done professional IT consulting with ComputerUp, a consulting firm he founded around the time the Internet was born. His clientele has included Hollywood pre- and post-production firms, public relations firms, market research firms, accounting firms and legal offices, among others. He specializes in both physical and cloud-based server environments, network infrastructure, systems design and troubleshooting, and software development. Mr. Jefferies is a lifelong musician and composer, with one of his compositions featured in the Italian documentary 27 Aprile 2014 – Racconto di un evento.

Instructor: Erik Kellener

Erik Kellener is a consultant (and former technology executive) to leading U.S. consumer brands in Media & Entertainment, Travel, and eCommerce. Erik scales businesses by fine-tuning their technology platform, evolving their team operations, and expanding their product & digital marketing portfolios. His contributions have increased revenues, reduced operating and capital costs, and improved efficiency company-wide. While Erik's primary focus is in technology, his leadership experience spans across operations, digital marketing, and finance. He consults to the SMB market, including pre- and post- revenue generating businesses. Erik works with executives and senior team members. He advises, audits, mentors, and steps in to lead his clients to higher ROI. Erik's results replace expensive missteps in scaling a business with proven strategies and tactics for growth and profitability.

Instructor: Irfan Ahmed
global cyber security consultant, HP

Instructor: Vincent LeVeque
MS, business information security officer, AIG