Cerritos College

SLO Presentation

CIS
Date: 09-15-2022

ISLO

Civic Engagement

• Students will develop values and beliefs in their role as a member of local, national and global societies to promote truth, fairness and goodwill to others. They will use the democratic process to further their values and beliefs and recognize and accept differing perspectives based on cultural diversity. They will engage in actions which provide service to others and have a positive impact on their local community.

Communication and Expression

• Students will demonstrate the ability to effectively and appropriately communicate their thoughts and ideas both in written and oral forms. They will develop verbal and non-verbal delivery skills, in an appropriate manner, to communicate their ideas as well as evaluate the ideas of others in a wide variety of contexts.

Critical Thinking and Quantitative Reasoning

• Students will demonstrate the ability to recognize assumptions within an argument and actively and skillfully analyze underlying reasoning to develop a conclusion. They will apply qualitative and/or quantitative analysis to solve problems, predict outcomes, test hypotheses, and explore alternatives in an ethical manner.

Information Literacy

• Students will demonstrate the ability to determine when gathering additional information is necessary. They will use appropriate resources and technologies to locate, evaluate and incorporate the information when developing supporting arguments and drawing conclusions. Students will also develop the ability to understand any legal, ethical or social issues regarding the use of information.

Personal Knowledge and Responsibility

• Students will develop the necessary skills to define, maintain and complete their personal educational goals. They will learn to work independently to accomplish personal goals toward realizing their full potential academically, physically and emotionally whether for personal enrichment, further education or career advancement.

Science, Engineering, and Math
CIS

CIS

Cybersecurity

• Students identify common network protocols.

• Students configure security settings on network devices.

• Students recognize common risks and threats in information systems.

• Students collect digital forensic evidence.

• Students carry out network scanning for open ports and IP addresses.

• Students create simple scripts to complete a task in a programming language.

CIS--Transfer

• Student apply principles of physics to solve a variety of programming problems.

• Students describe the role of assembly language programming to modern programming.

• Students distinguish between various programming paradigms.

• Students explain the fundamentals of programming computers.

• Students recognize the organization of the motherboard and its components.

• Students use high level mathematics to develop programming solutions.

CLOUD COMPUTING

• Design Infrastructure as a Service (IaaS) solutions byprovisioning computing instances, establishing virtual privatenetworks, managing databases and storage within a secure onlineenvironment.

• Analyze performance metrics of a cloud architecture to responddynamically to information and computing technology workloads andoptimize service costs.

• Collaborate in a team designing business solutions in an industryaligned project.

Computer Operator--Cert
- Student utilize iSeries navigator to manage an iSeries system.
- Students perform operations on an iSeries system.
- Students recognize the organization of microcomputer hardware.
- Students use the application in the Microsoft Office Suite.

Computer Programmer--Cert
- Students create a graphical user interface to be used with a computer application.
- Students develop and maintain a database application.
- Students distinguish between the different programming languages.
- Students implement and use a Unix client or server.
- Students use object oriented programming to develop a computer application.
- Students utilize various fundamental database structures.

Cybersecurity
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- Students identify common network protocols.
- Students recognize common risks and threats in information systems.
- Students configure security settings on network devices.
- Students collect digital forensic evidence.
- Students carry out network scanning for open ports and IP addresses.
- Students create simple scripts to in a programming language.

iSeries 400 Specialist--Cert
- Students demonstrate fundamental operations on an i Series server.
- Students recognize the role of IBM i Series server in the business sector.
- Students utilize integrated database management system.
- Students write control language programs.
- Students write programming code using the RPG programming language.

IT Support Specialist
- Students build a computer system from scratch.
- Students explain computing devices in information technology.
- Students recognize the fundamentals of programming.
- Students trouble shoot problems with an computing system.
- Students trouble shoot problems with routers, switches, and hubs.

Microcomputer Specialist--Cert
- Students build a computer system from scratch.
- Students explain computing devices in information technology.
- Students recognize the fundamentals of programming.
- Students trouble shoot problems with an computing system.
- Students trouble shoot problems with routers, switches, and hubs.

Network/System Administration--Cert
- Students configure and utilize servers based on Windows and Unix operating systems.
- Students differentiate between wide, metropolitan, and local area networks.
- Students identify the essential requirement for supporting an Apple Macintosh.

- Students recognize the use of TCP/IP in internet communications.

- Students set up and configure routers.

CSLO

CIS58A - PC Operating Systems A+ Certification

- Students demonstrate ability to install and configure an operating system

- Students demonstrate ability to install and uninstall an application software on a PC.

CIS58B - PC Core Hardware A+ Certification

- Students demonstrate appropriate configuration of CMOS.

- Students demonstrate high level formatting of a hard drive.

- Students demonstrate installation and configuration of an expansion card.

- Students maintain a portfolio of hardware related information, product announcements, specifications, and news from newspapers, periodicals, or web sites.

- Students pass an A+ Operating Systems Technologies simulated exam.

CIS70J - Cisco CCNA Exam Review

- 80% of enrolled students will pass the preparation final exam with an 80% achievement score or better.

CIS70K - INTRO TO WIRELESS NETWORK (Distance Education)

- Students are able to differentiate the wireless LAN technology from wireless WAN technology

- Students are able to identify common radio frequencies used in wireless LAN

- Students are able to identify the current wireless LAN standards

- Students are able to name the current wireless mobile standards

- Students are able to name wireless standards organizations

CIS70L - CyberSecurity Fundamentals

- A.   Identify common malware threats

- B.   Identify the common distribution channels of malware

- C.   Explain the rules of a strong password

- D.   Name common tools to counter malware threats

- E.   Name common protocols to protect network data transmission

CIS101 - Introduction to Computer Information Systems

- Students create an organized set of folders, and successfully copy, move, delete, and rename folders and files according to a model assigned by the instructor.

- Students define the terms information processing, data, and information.

- Students design, enter, and analyze spreadsheet applications.

- Students access data and generate reports from a database management system.

- Students demonstrate the creation, editing and printing of documents from a word processing program.

- Students demonstrate the ability to create, edit, and launch a simple graphics presentation using a presentation management system.

CIS102 - Introduction to Microcomputer Hardware and Applications Software

- Students recognize the major hardware components of a microcomputer.

- Students describe the subdivisions of the CPU (Central Processing Unit) and the process of executing a program.

- Students describe the three major computer buses: address, data, and system.

- Students create an organized set of folders, and successfully copy, move, delete, and rename folders and files according to a model assigned by the instructor.

- Students understand the need for software in the use of a PC.

- Students discuss the three major types of software: systems, utility, and application software.

- Students create, format, test, print and document spreadsheets using electronic spreadsheet software.

- Students create, edit, format, and print a document using a word processor.

- Students create and maintain a database using a database management system.

- Students create and maintain a presentation slide show using a presentation management system.

CIS103 - Computer Programming Logic
- Students identify the steps in program development cycle.

- Students draw a flowchart to represent the program's logic.

- Students break down programming problems into modules.

- Students use a selection structure to test condition.

- Students use loop to accumulate repeat an action.

- Students will develop the logic for a problem, code the logic in a programming language, translate the program, run the program and validate the program, results with a seventy-five percent (75%) success rate.

- Students write simple code in a compiled or interpreted programming language.

CIS151 - Microsoft Excel for Information Systems/Information Technology
- Students create a professional looking spreadsheet that includes a formatted chart.

- Students create a summary worksheet with 3D references.

- Students create a financial worksheet using financial functions.

- Students create a worksheet that uses macros to automate repetitive tasks.

CIS155 - Microsoft Access
- Create custom forms and reports to meet assignment requirements.

- Create and use Action Queries to meet the requirements presented to them.

- Find, modify and delete records in a table.

- Apply the IIf function to assign a conditional value to a calculated field in a query.

- Sort and group data in a report.

CIS160 - Web Page Development (Distance Education)
- Students successfully construct a web page using XHTML.

- Students successfully format text using CSS(Cascade Style Sheet).

- Students successfully align text and images using CSS.

- Students successfully create a vertical navigation bar.

- Students successfully create a simple page layout.

CIS162 - HTML and CSS
- Students successfully create a horizontal navigation bar

- Students will be able format text using CSS.

- Students will be able to align text and images using CSS.

- Students will be able to construct web pages using HTML.

- Students will be able to create a three column page layout.

CIS164 - JavaScript Programming
- Write output to a Web document

- Program JavaScript using arithmetic, logic, and repetitive instructions

- Validate Web form input

- Create a pull-down menu

- Create interactive Web pages with jQuery

CIS169A - Special Topics in Computer and Network Security
- Learning outcomes Eighty percent of the enrolled students will be able to score seventy percent or   better on the cumulative final exam on the latest security concepts.

CIS169D - Special Topics in Security
• Students will be able to complete a case study and develop a security plan and   make recommendations for the uses of software and hardware security tools in the   enterprise environment specified in the case study.

CIS170A - Networking Fundamentals
• Given an IP address and subnet mask, students identify the appropriate address type (unicast, broadcast, network).

• Students identify (A, B, C) classes of IP addresses.

• Students identify appropriate layers in the OSI (Open System Interconnection) model.

• Students name a protocol for Application layer of the OSI model.

• Students name a protocol for Network layer of the OSI model.

• Students name the PDU (Protocol Date Unit) for Network layer of the OSI model.

CIS170B - Network+ Certification
• Students are able to identify appropriate layers in the OSI Model.

• Students are able to configure TCP/IP properties on a host system.

• Students are able to identify IP address settings on a host system.

• Students are able to identify the Gateway address on a host system.

• Students are able to identify the DNS address on a host system.

• Students are able to verify network connectivity on a host system.

CIS170E - Router Configurations and Protocol
• compare Distance Vector and Link State routing protocols.

• configure static routes on a router.

• create a trunk connection between switches.

• describe the function of Dynamic Host Configuration Protocol (DHCP).

• to configure a VLAN (Virtual LAN) .

CIS170F - Advanced Switching and Routing
• aggregate switch links using EtherChannel.

• compare the characteristics of the various IEEE 802.11 wireless networking solutions.

• create a backup copy of a router IOS image.

• plan and complete an EIGRP routing solution.

• plan and complete an OSPF routing solution.

CIS170G - Wide Area Networks
• compare the security characteristics of PAP and CHAP.

• configure a Frame Relay WAN Link

• configure a WAN link using Point-to-Point Protocol.

• describe data encapsulation in Wide Area Network.

• design and configure an Access Control List (ACL).

CIS170H - TCP/IP Fundamentals
• Students are able to identify the Data Link layer header information.

• Students are able to identify the Transport layer header information.

• Students are able to identify the well known port numbers.

• Students demonstrate ability to use a packet sniffer to capture network traffic.

• Students identify appropriate layers in the TCP/IP Model.

CIS170K - Introduction to Wireless Networking
• Differentiate between wireless LAN technology and wireless WAN technology

- Name wireless standards organizations

- Identify the current wireless LAN standards

- Name the current wireless mobile standards

- Identify common radio frequencies used in wireless LAN

CIS170L - Cybersecurity Fundamentals
- Students will be able to identify common malware threats.

- Students will be able to identify the common distribution channels of malware.

- Students will be able to explain the rules of a strong password.

- Students will be able to name common tools to counter malware threats.

- Students will be able to name common protocols to protect network data transmission.

CIS170P - Introduction to Ethical Hacking
- A. Use WHOIS to query a domain name

- B. Use TRACEROUTE to map the data path to the destination

- C. Explain the Transport Control Protocol (TCP) three-way handshake process

- D. Identify a common network vulnerability scarming tool

- E. Name a common Web server attack technique

CIS170R - Computer and Digital Forensics
- List the steps in preparing for an evidence search

- Search for hidden files in Windows

- Decrypt files on NTFS storage

- Identify a proper graphics file type

- Trace the source of an e-mail message

CIS170S - Network Defense
- Download and install Snort on a computer

- Use Snort to capture Internet Control Message Protocol (ICMP) packets

- Use Snort to identify Network Mapper (Nmap) network scans

- Configure firewall rules to filter File Transfer Protocol (FTP) packets

- Configure a virtual private network (VPN) connection from a Windows client

CIS171A - Introduction to Cloud Computing
- Students identify key terms in cloud computing.

- Students identify key AWS services.

- Students identify AWS career options.

- Students describe Serverless

- Students describe AWS computing services

- Students describe AWS storage services

CIS171B - Amazon Web Services-Data Storage
- Students explain the differences among many database design principles that reduce redundancy and increase performance.

- Students explain the differences between file-based, hierarchical, network, relational, and object-oriented databases.

- Students describe the use of a database management system language to apply the concepts by creating tables.

- Students apply database management concepts by working with database tables through retrieving data, creating indexes.

- Students create programs that manipulate data.

CIS171C - AMAZON WEB SERVICES-COMPUTING SERVICES

- Students launch and monitor EC2 instances with the AWS Console.

- Students design, create and deploy applications using the AWS Console

- Students design, create and deploy applications using Elastic Beanstalk

- Students describe DevOps tools in AWS.

- Students configure and deploy applications in AWS as Platform as a Service (PaaS).

CIS171D - AMAZON WEB SERVICES-SECURITY
- Students deliver secure, resilient products that incorporate security principles into the design of their applications.

- Students identify important security principles that web services applications must meet when deployed.

- Students configure Virtual Private Subnets (VPS).

- Students use appropriate tools to monitor network activities.

CIS180 - Programming in C/C++
- Students will be able to write arithmetic expressions in C++.

- Students will be able to produce formatted output.

- Students will be able to write conditions using Boolean operators and logical operators.

- Students will be able to program loops with the while and for statements.

- Students will be able to create and call a function.

CIS181 - Python Programming
- Design and write structured Python Programs

- Design and develop Python modules

- Design and write Python user-defined
Classes

- Demonstrate the use of Python Programming language to read from, write, and process data contained in files

- Demonstrate the 3 major characteristics of Object-Oriented Programming in the Python programing language: encapsulation, inheritance, and polymorphism

- Program simple Graphical User Interface (GUI) applications in Python

CIS182 - Java Programming
- explain the concepts of programming for robustness and demonstrate the use of exception handling and assertions in Java

- explain the concepts of programming for robustness and demonstrate the use of exception handling and assertions in Java

- explain the tenets of object-oriented programming and demonstrate the use of object-oriented syntax in Java

- explain the tenets of structured programming and demonstrate the use of structured syntax in Java

- explain the use of the java.io API to program for persistence and demonstrate file handling in Java

CIS183 - Java Programming
- Demonstrate the use of the Java API to create new classes that use existing classes (code reuse and composition)

- Explain the terms reference, class, and object and give an example of the use of each.

- Download, install, and configure the Java Development Kit on a computer running Microsoft Windows (including updating and creating necessary environment variables)

- Explain the concept of programming for robustness and demonstrate the use of exception handling in Java

- Explain the use of the classes in the package java.io to program persistence.

CIS185 - Discrete Structures
- Describe how formal tools of symbolic logic are used to model real-life situations

- Relate the ideas of mathematical induction to recursion and recursively defined structures

- Demonstrate different traversal methods for a tree

- Analyze a problem to create relevant recurrence equations

- Apply the binomial theorem to independent events and Bayes' theorem to dependent events

CIS189A - Special Topics in Software Development
- Write a program that requires decision making using loop structure with an expected success rate of eighty percent.

CIS189B - Special Topics in Programming
- Perform text file input and output and write an application involving procedures and arrays with an expected success rate of eighty percent.

CIS189C - Special Topics in Programming
- Use a two-dimensional array to solve a problem and write a program which stores data in a text file or a binary file with an expected success rate of eighty percent.

CIS200A - Apple Mac OS Support Essentials
- Students will successfully install Mac OS on an Apple computer.

- Students will successfully install OS updates.

- Students will be able to complete initial configurations in Mac OS.

- Students will be able to create user accounts and home folders.

- Students will be able to use Finder to manage files.

CIS201 - Systems Analysis and Design
- Students create a professional report design.

- Students create a professional user input design.

- Students write a detail use case for requirements determination.

- Students draw a network diagram.

- Students draw a class diagram.

CIS202A - Project Management for Information Technology
- Students will be able to create a detailed IT project plan.

- Students will be able to create a work breakdown structure.

- Students will be able to write a project charter.

- Students will be able to write a scope statement.

CIS202B - Microsoft Project
- Students assign resources and costs to tasks Using Microsoft Project.

- Students create a baseline and track project progress by Using Microsoft Project.

- Students create a detailed project schedule with tasks, durations, and task dependencies using Microsoft Project.

- Students using Microsoft Project communicate project information by creating and formatting charts, views and reports.

CIS207 - Database Design and SQL
- Students will be able to construct a syntactically correct Structured Query Language (SQL) statement.

- Students will be able to construct a Structured Query Language (SQL) statement using case and character manipulation.

- Students will be able to develop an ER diagram for a database entity.

- Students will be able to use SQL to address a selected topic in database.

- Students will be able to construct a Structured Query Language (SQL) statement using a subquery.

CIS208A - Oracle SQL and PL/SQL Programming
- Students construct a syntactically correct Programming Language/Structured Query Language (PL/SQL) Procedure.

- Students incorporate error handling in a PL/SQL block.

- Students use a Cursor in a FOR loop.

- Student create a PL/SQL script using variables.

- Students create a function using PL/SQL.

CIS211C - Special Topics in Database (Distance Education)

- Students construct a Structured Query Language (SQL) statement using case and character manipulation.

- Students construct a Structured Query Language (SQL) statement using a subquery.

- Students use SQL to address a selected topic in database.

- Students construct a syntactically correct Structured Query Language (SQL) statement.

- Students develop an ER diagram for a database entity.

- Students construct a syntactically correct Structured Query Language (SQL) statement.

CIS212 - Introduction to Microsoft Windows Administration

- Students perform a clean installation.

- Students access the task manager.

- Students are able to join the Windows desktop client to a specific workgroup.

- Students configure the IP address on the computer.

- Students create user accounts.

- Students identify hardware requirements for Windows 7.

- Students identify the file path for Windows system folder.

CIS213B - Microsoft Advanced Network Infrastructure

- Students identify IPv4 address classes.

- Students identify IPv6 address interface ID.

- Students explain the difference between dynamic addressing and static addressing.

- Students complete the installation of a DNS server on a simulated network.

- Students complete the installation of a DHCP server on a simulated network.

- Students install and configure the routing service on a Windows server.

CIS213F - Microsoft Windows .Net Enterprise Server Administration

- Students identify hardware requirements for Windows Server OS.

- Students perform a clean installation of Windows server OS.

- Students promote a server to a Domain Controller.

- Students configure IP address on the server.

- Students create domain user accounts.

- Students check system errors through Event Viewer.

CIS213G - Microsoft Exchange Server Administration

- At the end of the course, 90% of the enrolled students will be able to complete an industry- scenario-based project for implementing an Exchange server in a medium sized network environment

CIS214 - Unix and Linux Operating Systems

- Describing, briefly, the history of UNIX® and Linux

- Explaining the role of the Linux distribution

- Understanding the naming standards used in UNIX® file systems

- Using the I/O redirection features of the shell

- Explaining, simply, how the command line interface functions

CIS231 - Computer Organization and Assembly Language Programming

- Implement an interrupt system

- Implement subroutines and stacks

- Install and configure a programming environment and explain the use of the assembler

- Program input/output with other controllers

- Program using arithmetic and logic assembly instructions

CIS280 - Object-Oriented Programming in C++
• Apply multiple inheritance to derive a new class directly or indirectly from   several existing classes with an expected success rate of 80%.

• Apply operator overloading to overload existing operators to manipulate objects   of their own classes with an expected success rate of 80%.

CIS280X - Object-Oriented Programming in C++
• Apply operator overloading to overload existing operators to manipulate objects of their own classes.

• Apply multiple inheritance to derive a new class directly or indirectly from several existing classes.

• Create a set of classes and objects to demonstrate the use of polymorphism

• Describe the difference between function overloading and overriding.

• Use existing classes to create a set, map, tree, or list.

CIS282 - Advanced Java Programming
• construct network-distributed applications in Java

• demonstrate a deeper and wider mastery of the Java syntax and API, including a more nuanced understanding of the effects of the use of reference types in pass-by-value vs. pass-by-reference calls as well as the use of abstract classes in object-oriented design and interfaces in event handling

• demonstrate multi-threading and thread synchronization in Java

• demonstrate the use of of 2D graphics in Java applications

• demonstrate the use of the javax.swing API

CIS283A - Java Server Pages (JSP) Programming
• Write a program for CGI using JSP

• Deploy a JSP program using JavaBeans

• Design a database connectivity using JSP

• Create a SQL query to access data in a database

• Design and implement a comprehensive, end-of-semester project to demonstrate abilities applying the concepts and skills learned throughout the course

CIS285A - ASP.NET Programming
• Customize a master page

• Transfer data from one web page to another web page using a session object

• Validate user input

• Access data from the entity data source

• Create a protected web folder

CIS286 - Software Development with C#
• Implement a callback interface

• Use the overridden methods to effect polymorphic behavior

• Create, compile, and run a program using Microsoft Visual Studio

• Implement and use exception handling

• Build C# classes and inheritance hierarchies

CIS288 - Mobile Application Development
• Students become familiar with the Eclipse interface and its tools.

• Students develop mobile applications with graphic user interface components.

• Students add event handling to graphical user interface.

• Students implement audio apps.

• Students implement graphics apps.

• Students implement animation apps.

CIS292 - Data Structures

• apply recursion in algorithms for data management solutions

• explain the role of Big-O analysis in data management designs

• implement a queue and recognize its use in data management applications

• implement a stack and recognize its use in data management applications

• write a large system (in excess of 1000 lines of code) that leverages libraries for data management that they create, to efficiently solve difficult but practical real-world problems