

# SLO Presentation

---

CIS

Date: 09/11/2019

<b>SCIENCE, ENGINEERING &amp; MATH</b>
CIS
<b>CIS--Transfer</b> <ul style="list-style-type: none"><li>• Student apply principles of physics to solve a variety of programming problems.</li><li>• Students describe the role of assembly language programming to modern programming.</li><li>• Students distinguish between various programming paradigms.</li><li>• Students explain the fundamentals of programming computers.</li><li>• Students recognize the organization of the motherboard and its components.</li><li>• Students use high level mathematics to develop programming solutions.</li></ul>
<b>Computer Operator--Cert</b> <ul style="list-style-type: none"><li>• Student utilize iSeries navigator to manage an iSeries system.</li><li>• Students perform operations on an iSeries system.</li><li>• Students recognize the organization of microcomputer hardware.</li><li>• Students use the application in the Microsoft Office Suite.</li></ul>
<b>Computer Programmer--Cert</b> <ul style="list-style-type: none"><li>• Students create a graphical user interface to be used with a computer application.</li><li>• Students develop and maintain a database application.</li><li>• Students distinguish between the different programming languages.</li><li>• Students implement and use a Unix client or server.</li><li>• Students use object oriented programming to develop a computer application.</li><li>• Students utilize various fundamental database structures.</li></ul>
<b>iSeries 400 Specialist--Cert</b> <ul style="list-style-type: none"><li>• Students demonstrate fundamental operations on an i Series server.</li><li>• Students recognize the role of IBM i Series server in the business sector.</li><li>• Students utilize integrated database management system.</li><li>• Students write control language programs.</li><li>• Students write programming code using the RPG programming language.</li></ul>
<b>Microcomputer Specialist--Cert</b> <ul style="list-style-type: none"><li>• Students build a computer system from scratch.</li><li>• Students explain computing devices in information technology.</li><li>• Students recognize the fundamentals of programming.</li><li>• Students trouble shoot problems with an computing system.</li><li>• Students trouble shoot problems with routers, switches, and hubs.</li></ul>
<b>Network/System Administration--Cert</b> <ul style="list-style-type: none"><li>• Students configure and utilize servers based on Windows and Unix operating systems.</li><li>• Students differentiate between wide, metropolitan, and local area networks.</li><li>• Students identify the essential requirement for supporting an Apple Macintosh.</li><li>• Students recognize the use of TCP/IP in internet communications.</li></ul>

- 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 write simple code in Visual Basic or Java
- Students identify seven steps in program development cycle.
- Students draw a flowchart to represent the program's logic.
- Students break down programming problems into modules.
- Students use if-then-else or if-then structure to test condition.
- Students use loop to accumulate totals.

### **CIS141 - i Series 400 Operations (Distance Education)**

- Create and modify a user profile on the system
- Create a library, insert physical database files, and create a joined logical file
- Use Operations Navigator to access work management functions
- Describe the process for downloading and applying program temporary fixes (PTFs)
- Navigate the menu system and command structure to troubleshoot and resolve basic system problems

### **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**

- Students will be able to create custom forms and reports to meet assignment requirements.
- Students will be able to create and use Action Queries to meet the requirements presented to them.
- Students will be able to find, modify and delete records in a table.
- Students will be able to use the If function to assign a conditional value to a calculated field in a query.
- Students will be able to 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 Data 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 scanning 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

### **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.

### **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

- Explain the terms reference, class, and object and give an example of the use of each.
- Demonstrate the use of the Java API to create new classes that use existing classes (code reuse and composition)
- 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 Structured Query Language (SQL) statement using a subquery.
- Students will be able to construct a Structured Query Language (SQL) statement using case and character manipulation.
- Students will be able to construct a syntactically correct Structured Query Language (SQL) statement.
- 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.

### **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

- describe, briefly, the history of UNIX® and Linux
- explain the role of the Linux distribution
- understand the naming standards used in UNIX® file systems
- explain, 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 multiple inheritance to derive a new class directly or indirectly from several existing classes.
- Apply operator overloading to overload existing operators to manipulate objects of their own 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