

# COMPUTER INFORMATION SYSTEM (CISS)

---

## CISS 115, INTERNET RESEARCH AND TOOLS 1 (1.5)

The Internet is a global information infrastructure that offers many services. This course will review the characteristics and trends that will continue to impact these technologies in the areas of collaboration, creativity, communication, research, applications, privacy, security, etc. Laboratory required. (A special fee will be assessed). Prerequisite: Knowledge of personal computer systems.

**General Education:** IN1, IN4, IN5

**Course Entry Requirement(s):** None

**Typically Offered:** Summer, Fall and Spring Semesters

## CISS 121, MICROCOMPUTER APPLICATIONS I 3 (4)

Introduction to microcomputer applications. Survey of application packages including Windows, word processing, spreadsheets, Internet, presentation and graphics. Includes hardware concepts and basic computer terminology and email. Guidelines for selecting and evaluating hardware and software. Laboratory required. (A special fee will be assessed.)

**General Education:** IN2, IN4, IN5

**Course Entry Requirement(s):** None, None

**Typically Offered:** Summer, Fall and Spring Semesters

## CISS 122, MICROCOMPUTER APPLICATIONS II 3 (4)

Basic concepts of personal finance software and presentation software. Procedures for installing and upgrading software, virus detection and removal software and modem software. Additional topics on customizing the operating system environment, configuring computer for an ISP, and troubleshooting software conflicts. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 121

**Typically Offered:** Summer, Fall and Spring Semesters

## CISS 125, OPERATING SYSTEM INTERFACES 3 (4)

Theory of single user, multitasking, and multi-user operating systems. The user interface will be examined as well as the operating system commands, command syntax, parameters, and operating systems troubleshooting. Topics on OS layering, hardware, disk storage, file management utilities, directory management utilities, backup, recovery, and editors. UNIX and Windows will be installed and used in the labs. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1, IN4

**Course Entry Requirement(s):** Concurrent: CISS 121 or divisional approval

**Typically Offered:** Summer, Fall and Spring Semesters

## CISS 135, PROGRAM DEV USING VISUAL BASIC .NET 4 (5)

An introduction to the program development process and business programming using the Visual Basic .NET programming language. Topics include language fundamentals, logical structures, functions and procedures, arrays, sequential file processing, and database access. The object-oriented programming (OOP) model is emphasized throughout the course. (A special fee will be assessed.)

**General Education:** IN1, IN2, IN3, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 121 or divisional approval

**Typically Offered:** Not offered this year

## CISS 136, ADVANCED VISUAL BASIC .NET 3 (4)

Advanced techniques of Visual Basic .NET programming including object class design, multi-tier programs, control creation, advanced database access and updating using ADO.NET, and Web Services. Web applications are also introduced using Visual Basic .NET Web Forms and ASP.NET. The object-oriented programming (OOP) model is emphasized throughout the course. (A special fee is assessed.) Prerequisite: CISS 135 (IN3, IN4)

**General Education:** IN3, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 135

**Typically Offered:** Not offered this year

## CISS 141, PROGRAMMING ON THE AS/400 4 (5)

AS/400 concepts that include working with the editor, creating files, creating input screens, running reports and queries using both physical and logical files. An introduction to RPG fundamentals will relate AS/400 concepts to the integrated language environment. Laboratory required. (A special fee will be assessed.)

**General Education:** IN3, IN4

**Course Entry Requirement(s):** Concurrent: CISS 135

**Typically Offered:** Not offered this year

## CISS 143, DATABASE DESIGN AND IMPLEMENTATION 3 (4)

Relational database theory, database design, implementation using microcomputer software, use of command language and application generator, database administration. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1, IN2

**Course Entry Requirement(s):** Prerequisite: CISS 121 or divisional approval

**Typically Offered:** Fall and Spring Semesters

## CISS 145, LOCAL AREA NETWORKS 4 (5)

Theory, installation, and operating principles behind local area networks. Topics on topologies, hardware configuration for topologies, network operating systems, server administration, media and software installation will be covered. Students will install and administer a local area network. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 125

**Typically Offered:** Fall and Spring Semesters

## CISS 155, FUNDAMENTALS OF NETWORK SECURITY 3 (4)

CCNA Security equips students with the knowledge and skills needed to prepare for entry-level security specialist careers. Students will learn about IT security principles, risk assessment and basic network related attack methodologies. Specific skills to mitigate these risks will be developed in the use and configuration of firewalls, intrusion detection/prevention and virtual private networking technologies. Other topics include configuration standards and secure networking equipment and the use of protocols to authenticate and authorize users. Cisco Curriculum provided to LCCC under contract with Cisco Systems, Inc. as part of LCCC's Cisco Networking Academy.

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 162 or divisional approval

**Typically Offered:** Fall and Spring Semesters

**CISS 160, INTRODUCTION TO PROGRAMMING IN C# 4 (5)**

An introduction to the program development process and business programming using the C# (C-sharp) programming language. Topics include programming fundamentals, algorithm design, functions and procedures, arrays, sequential file processing, and database access. The object-oriented programming (OOP) model is emphasized throughout the course. Laboratory required. (A special fee will be assessed).

**General Education:** IN1, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 121 or divisional approval

**Typically Offered:** Fall and Spring Semesters

**CISS 161, CISCO CCNA INTRODUCTION TO NETWORK 3 (4)**

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Laboratory required. (A special fee will be assessed.) (In1, In2, In4)

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 145 or divisional approval

**Typically Offered:** Summer, Fall and Spring Semesters

**CISS 162, CISCO CCNA ROUTING & SWITCHING ESSENTIALS 3 (4)**

This course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. Laboratory required. (A special fee will be assessed.) (In1, In2)

**General Education:** IN1, IN2

**Course Entry Requirement(s):** Prerequisite: CISS 161

**Typically Offered:** Summer, Fall and Spring Semesters

**CISS 163, CISCO CCNA SCALING NETWORK 3 (4)**

This course describes the architecture, components, and operations of routers and switches in a larger and more complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network. Laboratory required. (A special fee will be assessed.) (In1, In2)

**General Education:** IN1, IN2

**Course Entry Requirement(s):** Prerequisite: CISS 162

**Typically Offered:** Fall and Spring Semesters

**CISS 164, CISCO CCNA CONNECTING NETWORKS 3 (4)**

This course discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students will also develop the knowledge and skills needed to implement IPsec and virtual private network (VPN) operations in a complex network. Laboratory required. (A special fee will be assessed.) (In1, In2, In3)

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 163

**Typically Offered:** Fall and Spring Semesters

**CISS 212, SPREADSHEET APPLICATIONS 3 (3)**

Use of spreadsheet software to create templates as well as menu-driven spreadsheets. Focus will be on using functions, databases, data tables, macros, charts, advanced formulas, pivot tables, pivot charts, and graphics. Additional topics include multiple worksheets, financial and what-if analyses, external data usage, and Visual Basic application integration. (A special fee will be assessed.)

**General Education:** IN1, IN2, IN4, IN5

**Course Entry Requirement(s):** Prerequisite: CISS 121

**Typically Offered:** Summer, Fall and Spring Semesters

**CISS 215, MULTIMEDIA FUNDAMENTALS 3 (4)**

Theory and techniques for developing multimedia projects. Principles of effective design. Use of multimedia tools, including video, audio and animation to develop a variety of projects. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1, IN2, IN3, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 121 or divisional approval

**Typically Offered:** Spring Semester

**CISS 216, WEB DEVELOPMENT 3 (4)**

Web site development with a focus on design strategies, electronic publishing, and graphic layout for the evolving business world. An overview of copyright, security, and domain name registration issues will also be covered. HTML/XHTML, JavaScript, CSS, and/or emerging languages will be used. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1, IN2, IN3, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 121 or divisional approval

**Typically Offered:** Summer, Fall and Spring Semesters

**CISS 222, ADVANCED PROGRAMMING IN C# 3 (4)**

Advanced object-oriented programming techniques in C# including using class instances, creating new classes, and using the .NET base class libraries. Topics include object-oriented analysis and design, inheritance, polymorphism, interfaces, namespaces, delegates, and events. The role of object-orientation in effective software development is emphasized. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 135 or CISS 160 or divisional approval

**Typically Offered:** Fall Semester

**CISS 226, INTRODUCTION TO PROGRAMMING IN JAVA 3 (4)**

An introduction to programming using the JAVA programming language. Topics include language fundamentals, GUI design tools including Swing and AWT, object class design and implementation, and applets. Both desktop and web applications are introduced using an object-oriented methodology. Laboratory required. (A special fee will be assessed).

**General Education:** IN1, IN2, IN3, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 135 or CISS 160

**Typically Offered:** Fall and Spring Semesters

**CISS 227, INTRANET/INTERNET NETWORKING 4 (5)**

Installation and support of Intranet/Internet servers. Site planning, performance and resource monitoring, security planning and troubleshooting. Students will install, configure, manage, and troubleshoot DNS servers, web servers, FTP servers, e-mail servers with both Windows and Linux operating systems. Additional topics on firewalls, DMZ, NAT, PAT, domain registration, Internet routing, and VPN tunnels. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 145

**Typically Offered:** Spring Semester

**CISS 232, SCRIPTING IN THE CLIENT SERVER ENVIRONMENT 3 (4)**

Study the principles of Client/Server programming. Development of web application interfaces using current web standards such as XHTML, CSS, Client side JavaScript and server side programming. Development of Web applications that include Server Side processing using current languages such as PHP. Laboratory required. (A special fee will be assessed).

**General Education:** IN1, IN2, IN3, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 216 and CISS 160 or CISS 135

**Typically Offered:** Fall and Spring Semesters

**CISS 236, VIRTUALIZATION AND CLOUD COMPUTING 3 (4)**

This course will equip the student with the knowledge, skills and abilities to build and run a VMware vSphere environment. This course focuses on the installation and configuration of VMware ESXI hosts and vCenter server. This course also focuses on the management of ESXI hosts and virtual machines utilizing the vCenter server. Upon completion of this course, students will be able to deploy, configure and manage ESXI, vCenter and storage subsystems. Laboratory required. A fee will be assessed. In1, In2, In4.

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 145 or divisional approval

**Typically Offered:** Summer, Fall and Spring Semesters

**CISS 240, CERTIFICATION EXAM PREP 2 (3)**

This lab course is designed as a self-study Certification exam preparation course for Computer Information systems students who have completed a sequence of courses and wish to prepare or review for Microsoft, Cisco, or other IT certification exams. Students will have access to lab equipment and software to help them review for one or more of the certifications.

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 136 or CISS 225 or CISS 154

**Typically Offered:** Offer as required

**CISS 243, WEB DATABASE INTEGRATION 4 (5)**

Theory and strategies for development of integrated web database applications. Students will create SQL-based applications that view, search, and modify databases, using current Server Side languages/frameworks, such as ASP.NET. Strategies for building robust Internet applications, and database theory will also be covered. (A special fee will be assessed).

**General Education:** IN1, IN2, IN3, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 216 and CISS 160 or CISS 135

**Typically Offered:** Fall and Spring Semesters

**CISS 244, PROJECT MANAGEMENT 3 (4)**

This course introduces students to the fundamental concepts, terminology and processes of effective project management. The content of this course includes project quality, scope, time, cost, human resource, communications, risk, procurement, and integration management, as defined by the Project management Institute's (PMI) Project Management Body of Knowledge (PMBOK®). Students will use various tools, including software, to manage different levels of projects through their life cycle for various organizational structures and stakeholders. This course satisfies the requirements for an individual to sit for the Certified Associate in Project Management (CAPM)®. (Special fee will be assessed.) (IN1, IN2, IN4)

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** None

**Typically Offered:** Not offered this year

**CISS 245, NETWORK INTEGRATION AND MANAGEMENT 4 (5)**

Theory and best practices for larger networks and the interconnection of local area networks and wide area networks. Topics on routers, network servers, virtualization of servers, virtualization of clients, network attached storage, remote storage, and video conferencing. Integration of both Windows and Linux servers and clients, biometric security devices, automated backups, and other emerging technologies. Topics on IP addressing, subnetting, WAN topologies, management issues, and disaster recovery. Laboratory required. (A special fee will be assessed.)

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 145

**Typically Offered:** Fall and Spring Semesters

**CISS 247, SYSTEMS DEVELOPMENT 3 (4)**

Methodologies implemented by project teams. Includes initial investigation, feasibility study, systems analysis, systems design, and implementation planning. Laboratory required. (A special fee will be assessed). Prerequisite: Completion of 40 credit hours, which include 18 Computer Information Systems credit hours including CISS 143. (IN1, IN2, IN4)

**General Education:** IN1, IN2, IN3, IN4

**Course Entry Requirement(s):** Prerequisite: Completion of 40 credit hours which include 18 computer information systems credit hours including CISS 143

**Typically Offered:** Spring Semester

**CISS 251, CYBER DEFENSE METHODS 3 (4)**

This course introduces practices and techniques for building an integrated secure business network with a focus on incident handling techniques. IT security concepts are reviewed along with the current risks faced by most business with regard to IT security. Specific tools, practices and technologies are employed to build up a layered defense for business network. Hands on lab allow students to learn how to harden Windows and Linux servers, routers and switches. The benefits of deploying firewalls and detections and preventions tools complete the defense lab approach. The labs involve the use of tools that can evaluate and exploit security holes so that students can gauge their level of success in building a secure network.

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** Prerequisite: CISS 245

**Typically Offered:** Fall Semester

**CISS 252, IT SECURITY CONCEPTS 4 (4)**

This course represents an overview of IT Security topics as defined by the 10 domains of the CISSP (Certified Information Systems Security Professional). This course is designed to give students an overview of the technical, legal and operational information technology issues in any organization. The coverage of the full range of IT Security topics is ideal for the IT professional. While this course is not a CISSP review course, it can serve as a good foundation for anyone pursuing the CISSP certification.

**General Education:** IN1, IN2, IN4

**Course Entry Requirement(s):** None

**Typically Offered:** Spring Semester

**CISS 260, INTRODUCTION TO IPHONE/IPAD PROGRAMMING 4 (5)**

This course will introduce the development of software applications for the Apple iPhone and iPad. Applications will be created using the Objective-C programming language and the Xcode development environment. Additional topics include application distribution through the Apple App Store as well as requirements and techniques for distribution through private computer networks. (A special fee will be assessed).

**General Education:** IN1

**Course Entry Requirement(s):** Prerequisite: CISS 160 or CISS 135

**Typically Offered:** Summer, Fall and Spring Semesters

**CISS 264, INTRODUCTION TO ANDROID PROGRAMMING 3 (3)**

This course will introduce the development of software applications for mobile Android devices (phone and tablets). Applications will be developed using Java and the Android SDK, tested and deployed. Application development will adhere to object oriented programming techniques. Additional topics include addressing resource issues, user interface design, and access to Android System Components. (A special fee will be assessed).

**General Education:** IN1

**Course Entry Requirement(s):** Prerequisite: CISS 160 or divisional approval; Corequisite: CISS 226 or divisional approval

**Typically Offered:** Fall Semester

**CISS 266, ADVANCED ANDROID PROGRAMMING 4 (5)**

Advanced design and development of software applications for mobile Android devices. Building of more complex applications that meet the needs of the user clientele. Additional topics on applications that take advantage of the rich features of mobile devices such as GPS location, motion sensation, and voice recognition. (A special fee will be assessed).

**General Education:** IN1

**Course Entry Requirement(s):** Prerequisite: CISS 264

**Typically Offered:** Spring Semester

**CISS 268, MOBILE WEB DEVELOPMENT 4 (5)**

Design and development of web sites that are optimized for mobile devices. Course will cover both the technical and design aspects associated with mobile platforms. Attention will be given to developing web sites that work well both when browsed from a computer and a mobile device without excessive duplication of effort. Additional topics on the development of web applications and rich multimedia. (A special fee will be assessed).

**General Education:** IN1

**Course Entry Requirement(s):** Prerequisite: CISS 232

**Typically Offered:** Fall Semester

**CISS 285, INFORMATION SYSTEMS PRACTICUM 2 (11)**

Students are placed in MIS departments for the purpose of observing and performing various computing activities. Students will be assigned an on-the-job sponsor who will be responsible for directing and evaluating their activities. Prerequisite: Completion of 40 credit hours, which include 18 Computer Information Systems credits.

**Course Entry Requirement(s):** Prerequisite: Completion of 40 credit hours which include 18 Computer Information System credits

**CISS 287, WORK-BASED LEARNING I - CISS 1-3 (1)**

This course provides supervised work experience with approved employer(s) in an area related to the student's program. Emphasis is placed on integrating classroom learning with work experience. Students will be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. Activities are coordinated and evaluated by college personnel. Course will be graded on S/U basis. Prerequisite: A student must be pursuing an approved program at LCCC; have completed 15 semester hours with a minimum of six semester hours in the discipline of placement; have a minimum GPA of 2.5 in the discipline and a 2.0 overall GPA; and have divisional approval.

**Course Entry Requirement(s):** A student must be pursuing an approved program at LCCC; have completed 15 semester hours with a minimum of six semester hours in the discipline of placement; have a minimum GPA of 2.5 in the discipline and a 2.0 overall GPA; have divisional approval

**Typically Offered:** Offer as required

**CISS 288, WORK-BASED LEARNING II - CISS 1-3 (1)**

This course provides supervised work experience building on experience in Work-Based Learning I with approved employer(s) in an area related to the student's program. Emphasis is placed on integrating classroom learning with work experience. Students will be able to evaluate career selection, demonstrate employability skills and satisfactorily perform work-related competencies. Activities are coordinated and evaluated by college personnel. Course will be graded on S/U basis. Prerequisite: CISS 287

**Course Entry Requirement(s):** Prerequisite: CISS 287

**Typically Offered:** Offer as required

**CISS 289, WORK-BASED LEARNING III - CISS 1-3 (1)**

This course provides supervised work experience building on experience in Work-Based Learning II with approved employer(2) in an area related to the student's program. Emphasis is placed on integrating classroom learning with work experience. Students will be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. Activities are coordinated and evaluated by college personnel. Course will be grade on the S/U basis. Prerequisite: CISS 288

**Course Entry Requirement(s):** Prerequisite: CISS 288

**Typically Offered:** Offer as required

**CISS 299, INDIVIDUALIZED STUDIES IN CISS 1-2 (1)**

An in-depth study of areas in computer information systems presented by discussions and/or individual research and reading. Topics will vary.

Repeatable up to a total of four (4) credit hours. (A special fee will be assessed). Prerequisite: Second-year standing and divisional approval.

**Course Entry Requirement(s):** Prerequisite: Second-year standing and divisional approval

**Typically Offered:** Offer as required