

# COMPUTER INFORMATION SYSTEMS

## COMPUTER INFORMATION SYSTEMS COURSES

### CIS 7 - Introduction to Programming Concepts and Methodologies

3 units

An introduction to the fundamental concepts and models of application development including the basic concepts of program design, data structures, programming, problem solving, programming logic, and fundamental design techniques for event-driven programs. Hands-on experience with a modern application object-oriented programming language and development platform such as Python/Visual Basic.NET/R Studio. 45 hours lecture, 27 hours laboratory. AA/AS GE: IB. Transfer: CSU; C-ID# ITIS 130.

**Recommended Course Preparation:** CIS 50 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 8 - Essential Computing Skills

2 units

Fundamental computer competency course designed to develop the basic computer skills and knowledge required in today's technological world. Basic computer competency is no longer a nicety, but a necessity in our personal and work lives. Topics include: basic computer hardware/software, networks and the Internet, effective web searches, file management skills, and cloud storage options. Hands-on experience with word processing, spreadsheet, presentation, and database software using Microsoft Office. No previous experience with computers is required. 27 hours lecture, 27 hours laboratory. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 10 - Business Data Analytics

3 units

Students explore data analytic practices and its applicability in the business world. Business Intelligence (BI) is a data analysis process which utilizes an integrated set of application systems, processes, and tools that transform raw data into meaningful and useful information for business analysis. Students will learn the fundamentals of business analysis and BI tools and processes that help businesses make strategic and tactical decisions based on data. The process of business decision-making will be applied with an emphasis on data mining. Careers and emerging trends in the field will be evaluated. 54 hours lecture. Transfer: CSU.

**Recommended Course Preparation:** CIS 54 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 11 - Data Visualization Tools

3 units

Data visualization is the process of representing information graphically. This course provides a hands-on introduction to various data visualization tools such as Tableau, Excel, Power BI, R Studio. Students use repositories of data for preparation that includes: data formatting, filtering and cleaning. Design principles are applied to create meaningful displays of quantitative and qualitative data to facilitate managerial decision-making. 54 hours lecture. Transfer: CSU.

**Recommended Course Preparation:** CIS 54 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 41 - CyberSecurity Camp

1 unit

This course will introduce the novice to cyber security career opportunities, cyber ethics, online safety, and cyber threats. Students will be introduced to cybersecurity principles, virtual machines, basic Windows and Linux administration security policies, fundamental CISCO network routing and CISCO packet tracer. As a culminating activity students will compete by analyzing and fixing vulnerabilities on the provided Windows and Linux images. 9 hours lecture, 27 hours laboratory. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 42 - Cybersecurity Competition Prep

0.5 units

This course prepares students to participate in cyber security competitions (CyberPatriot, National Cyber League, etc). Topics include an overview of cyber competitions, virtual machines, Linux operating systems and administration, Windows operating systems and administration, CISCO networking, and packet tracer. Through business scenarios, students will create checklists of potential vulnerabilities and work in teams to secure networks and sensitive data. 27 hours laboratory.

**Recommended Course Preparation:** CIS 41 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 43 - Professional Communications

3 units

This course applies the principles of ethical and effective communication to the creation of letters, memos, emails, and written and oral reports for a variety of business situations. The course emphasizes critical thinking and analysis, planning, organizing, composing, and revising business documents to create and deliver professional-level oral presentations in-person and virtually. Additional focus will be placed on developing interpersonal skills, team participation skills, and technical report writing skills. Students who have completed or are enrolled in CNT 43 or CS 43 may not receive credit. 54 hours lecture. AA/AS GE: IB. Transfer: CSU.

**Recommended Course Preparation:** ENG 1A with a minimum grade of C or ENG 1AEX with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 44 - IT Fundamentals+

2 units

Information Technology Fundamentals+ (ITF+) is the essential qualification for exploring a career in IT. This course will cover the topics of the CompTIA IT Fundamentals certification, which validates the knowledge and skills required to identify and explain the basics of computing hardware and software, IT infrastructure, applications and software, software development concepts, database fundamentals, and security. Technologies and trends of the IT industry and the exploration of IT careers. This course will prepare you to take the CompTIA certification exam. 36 hours lecture. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 50 - Introduction to Computing Information Technology

3 units

A comprehensive introduction to the concepts of management and information systems used in business and similar organizations. Covers the role of information systems in business, the need for data and information, how computers are used in business and other organizations to provide information. Focus on information systems, database management system, networking, e-commerce, ethics and security, computer system hardware and software components. Students will interactively solve applied problems utilizing software productivity tools such as: word processors, spreadsheets, databases, presentation, WWW, and programming languages.

Introduce the analytical, written and oral communication skills necessary to communicate effectively in a business computing environment. 54 hours lecture, 18 hours laboratory. AA/AS GE: IB. Transfer CSU, UC; C-ID# BUS 140, ITIS 120.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 54 - MS Excel Essentials

#### 4 units

This is a comprehensive spreadsheet class using Microsoft Excel to create a variety of spreadsheets with emphasis on business applications. Introductory, intermediate, and advanced topics are covered. Introductory topics include entering, editing, and formatting data, creating basic formulas using arithmetic operator and functions, creating charts, saving and printing worksheets. Intermediate topics include using Excel's Table features for sorting filtering and summarizing data, creating PivotTables, working with multiple worksheets and workbooks, naming cells, data validation, recording macros, and protecting worksheets. Advanced topics include using financial functions such as PMT, RATE, FV, creating nested IFs, using VLOOKUP and HLOOKUP functions, using What-If analysis tools such as Goal Seek, one and two variable Data Tables, and Scenario Manager, sharing workbooks, and integrating Excel with other Office applications. Students who have completed or are enrolled in APAT 53 may not receive credit. 54 hours lecture, 54 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 50 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 55 - Integrating Office Applications

#### 4 units

Develop essential workplace application skills using current Microsoft Office including: Word, Excel, PowerPoint, Access, One Note, Outlook, cloud storage and cloud processing. Emphasis is to design, produce and integrate documents, worksheets, databases and professional presentations. The use of import/export, copy/paste, and Object Linking and Embedding (OLE) to integrate, share, and collaborate data within and between applications. Software: Students are eligible for FREE, Microsoft 365 Education.

54 hours lecture, 54 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 50 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 55B - Advanced MS Office Skills

#### 2 units

Using a project-based, problem-solving approach, this course focuses on advanced features and integration of the core applications in the Microsoft Office suite (Word, Excel, PowerPoint, and Access). 27 hours lecture, 27 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 55 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 57 - Database Concepts

#### 3 units

Introduction to Database Concepts, a computer program that is used to organize, store, and retrieve information. Understanding of data, database structure, and database objects using Microsoft Access or similar programs with emphasis on business applications. Identify and evaluate client needs/requirements and translate those needs into a working database application model. Integrate Microsoft Access data with other Microsoft applications, such as Word and Excel. 36 hours lecture, 54 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 50 with a minimum grade of C. CIS 55 with a minimum grade of C.

- Credit - Degree Applicable

## 2 Computer Information Systems

- Grading Option: Letter or Pass/No Pass

### CIS 59 - Web Dev: HTML/CSS/Javascript

#### 3 units

This course will provide a fundamental understanding of the methods and techniques of developing a simple to moderately complex web site. Topics include: creating webpages with current standard webpage language (HTML), cascading style sheets (CSS), and Javascript. Exploration of incorporating images, audio/visual media, and interactive tools like forms and image maps. This course prepares apprentice Web developers to identify the information needs of a client, design appropriate WWW solutions, and implement them. 45 hours lecture, 27 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 50 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 59C - Web Programming - JavaScript

#### 3 units

Develop client-side, interactive webpages using JavaScript and/or jQuery scripting languages. Write JavaScript scripts that manipulate with the JavaScript Document Object Model (DOM), control program flow, validate forms, animate images, target frames, and create cookies. 45 hours lecture, 27 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 59 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 60 - Systems Analysis and Design

#### 3 units

The course presents a systematic methodology for analyzing a business problem or opportunity, determining the role which computer-based technologies can play in addressing the business need, articulating business requirements for the technology solution, specifying alternative approaches to acquiring the technology capabilities needed to address the business requirements, and specifying the requirements for the information systems solution in particular, in-house development, development from third-party providers, or purchased commercial-off-the-shelf packages. Provides the opportunity to compare the systems development life cycle (SDLC) processes like Waterfall, Agile. 54 hours lecture, 18 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 50 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 62 - Project Management

#### 3 units

Using the Project Management Institute's (PMI) Guide to the Project Management Body of Knowledge (PMBOK) and the Agile SCRUM framework, learn the basic characteristics of projects and project management, with emphasis on the five PMBOK project process groups of initiating, planning, executing, controlling, and closing and the nine knowledge areas of project integration. This introductory course covers the terminology you will need to know, how all the project management processes are linked together, the key areas of expertise you need to know to manage projects successfully. This course focuses on developing project management skills needed in typical technical and business environments. Objectives of project management industry certifications including Project+, CAPM, PMP will be reviewed. 54 hours lecture, 18 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 60 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 65 - Introduction to Desktop Operating Systems

#### 2 units

By performing numerous hands-on labs, students in this class will gain an understanding of the most widely used desktop operating systems (Windows, MAC OS, and Linux) using command line and GUI interfaces. Students will use cloud resources (e.g., Amazon Web Services) to create and launch machine images (Windows, MAC OS, Linux) in the cloud. Students may utilize virtualization software to install and configure operating systems on their home computer. Once the operating system is installed, students will explore several key operating system functions: interfaces (command line and GUI), file systems, file management, and security. 27 hours lecture, 27 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 50 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 66 - Networking Fundamentals

### 3 units

This course provides an introduction to computer networking fundamentals skills needed to meet the industry demand for entry-level Network Technicians. Topics include: Ethernet network fundamentals, Local Area Networks (LANs), and Wide Area Networks (WAN) technologies, the Open Systems Interconnection (OSI) model, wiring implementations, network adapters and connectivity devices, IPv4/IPv6 addressing, Voice over IP (VoIP), and wireless standards. Tools to help prevent cyber attacks with IDS (Intrusion Detection Systems), authentication, and encryption are demonstrated. Student labs include: configuration of a SOHO (Small Office/Home Office), a firewall, a virtual private network (VPN), a switch, and a router and documenting a networking using professional drawing software. The responsibilities of an ICT (Information and Communications Technology) professional will be introduced. This course prepares students for the CompTIA Network+ Certification Exam. This professional certification verifies the student has the knowledge equivalent to that of an ICT technician with about 12 months of hands-on experience. Students who have completed or are enrolled in CNT 52 may not receive credit. 54 hours lecture, 18 hours laboratory. Transfer: CSU; C-ID# ITIS 150.

**Recommended Course Preparation:** CIS 50 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 71 - Computer Typing

### 1 unit

Individualized, hands-on courses in computer keyboarding. Upon individual assessment of keyboard skills, students are transferred into one of the following modules: CIS 71A Keyboarding (The Alphabet), CIS 71B Keyboard (Numbers & Symbols), or CIS 71C Skills Improvement. 54 hours laboratory.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 71A - Keyboarding (The Alphabet)

#### 1 unit

Introduction to the alphabet letter keys on the computer keyboard for touch-typing. Learn basic keyboarding techniques for accuracy and speed. This course is the first in a series of sequential courses in keyboarding instruction. Students are advised to take these courses in sequence for best training results. 54 hours laboratory.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

### CIS 71B - Keyboard (Numbers and Symbols)

#### 1 unit

Introduction to the numbers and symbol keys on the computer keyboard for touch typing. Review of alphabetic keys and common punctuation marks. Speed building and accuracy improvement. 54 hours laboratory.

**Recommended Course Preparation:** CIS 71A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 71C - Skills Improvement

### 1 unit

Development of keyboarding skill for those students who have learned the location of the keys on the keyboard by touch and are ready to increase speed and accuracy. Practice keyboarding control of speed and accuracy on straight copy, rough draft copy, and copy with numbers, and symbols. Skill progress is measured by keying text within specified time limits. Students should know the location of the keys on the keyboard before attempting this course. This course is the third module in a sequential series of beginning keyboarding instruction. 54 hours laboratory.

**Recommended Course Preparation:** CIS 71B with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 72A - Data Management

### 1 unit

Individualized instruction on the theory and practice of alphabetic, numeric, geographic, and subject filing. Basic principles of filing and effective records management for both paper and electronic filing systems. Introduction to database functions, such as enter, editing, finding, and deleting records, creating queries, and printing report. 54 hours laboratory. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 72B - Basic Office Integration

### 1 unit

Using a project-based approach, students will be introduced to features that enable data to be transferred between programs such as Microsoft Office applications or Google applications. Using the techniques introduced in this course, students will be able to incorporate data and charts created in Excel or Google Sheets into Word or Google Docs documents and PowerPoint or Google Presentations, use worksheet data to create tables in an Access database, and use a Word or Google Docs documents to create presentations. 54 hours laboratory.

**Recommended Course Preparation:** CIS 8 with a minimum grade of C or CIS 50 with a minimum grade of C. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 73A - Ten-Key Skill Development

### 1 unit

Skill development on the computer numeric keypad, electronic calculator including use of memory functions, and data entry using spreadsheets. 54 hours laboratory.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 74 - Office Procedures

### 3 units

Introduction to office principles, procedures, and technology. Topics include telephone skills, office equipment, working effectively in a team environment, records management, customer service, meeting/event planning, postal/shipping services, utilizing the internet for on-line services and resources, using appropriate software to complete common tasks, written and oral business communications, conflict resolution, and office etiquette. Prepares administrative professionals to work in a diversified workforce with emerging technologies. (Formerly BUSN 74.). 36 hours lecture, 54 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 8 with a minimum grade of C. CIS 71C with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 75 - Office Technology/Communications

### 1 unit

Overview of various technologies (such as video-conferencing, cloud services and storage, mobile devices) used for communicating internally and externally in the workplace. Hands-on practice with Outlook (email, contact management, calendaring), cloud-based applications and data storage, and telephone techniques. 54 hours laboratory.

**Recommended Course Preparation:** Eligibility for ENG 1A. CIS 71A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 79 - Medical Office Procedures

### 3 units

Medical office principles and procedures to include telecommunications, scheduling appointments, office equipment, medical documents and word processing, managing medical records, recordkeeping, expense reports, petty cash, billing, postal services, health insurance, coding, and utilizing the Internet for online resources. The importance of medical ethics in application of professional office behavior. Overview of medical law and careers in medical office environment. 36 hours lecture, 54 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 8 with a minimum grade of C. CIS 88A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 81A - Introduction to Cloud Computing

### 3 units

This course introduces cloud computing which shifts information systems from on premises computing infrastructure to highly scalable internet architectures using current cloud platforms such as AWS, AZURE. The course provides a basic understanding of cloud computing technologies and provides students with the understanding required to effectively evaluate and assess the business and technical benefits of cloud computing and cloud applications. Students analyze a variety of cloud services (storage, servers, software applications), then learn to configure, deploy, and manage cloud facilities. The course also demonstrates/makes available the AWS and/or AZURE platforms for educational, industry career path guidance and career opportunities. This course surveys cloud careers and explores industry demand for cloud skills. 54 hours lecture. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 81B - Database Essentials in the Cloud

### 3 units

This course addresses cloud database management which supports a number of different approaches for storing data. In the course, students define, operate and scale both SQL and noSQL data storage solutions. This course considers factors that should be balanced during the design of a storage solution. Principles are applied by performing exercises using Amazon RDS and SQL to create and fill tables, retrieve and manipulate data. Object-based APIs are used to serialize objects to Amazon DynamoDB for noSQL solutions. Topics include automated backups, transaction logs, restoration and retention. 54 hours lecture. Transfer: CSU.

**Recommended Course Preparation:** CIS 81A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 81C - Compute Engines for Cloud Computing

### 3 units

In this course, students explore how cloud computing systems are built using a common set of core technologies, algorithms, and design principles centered around distributed systems. Students will use current cloud

platforms such as AWS, AZURE to provision, load-balance and scale their applications. The course discusses, from a developer perspective, the most important reasons for using cloud computing and examines the underlying design principles of scalable cloud applications. 54 hours lecture. Transfer: CSU.

**Recommended Course Preparation:** CIS 81A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 81D - Security Services in the Cloud

### 3 units

This course focuses on protecting the confidentiality, integrity and availability of computing systems and data. Students learn how Amazon Web Service (AWS) uses redundant and layered controls, continuous validation and testing, and a substantial amount of automation to ensure the underlying infrastructure is continuously monitored and protected. Students examine the AWS Shared Responsibility Model and access the AWS Management Console to learn more about security tools and features provided by the AWS platform. 54 hours lecture. Transfer: CSU.

**Recommended Course Preparation:** CIS 81A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 82A - AWS Cloud Practitioner Certification Prep

### 2 units

This introductory course provides an overview of cloud concepts, Amazon Web Services (AWS) core services, basic security, architecture principles, pricing, and technical support. Students gain an overall understanding of the AWS Cloud, independent of specific technical roles. Review of core characteristics of deploying and operating in the AWS Cloud. This course prepares students to pursue becoming an AWS Certified Cloud Practitioner using official AWS Academy Cloud Foundations material. 36 hours lecture. Transfer: CSU.

**Recommended Course Preparation:** CIS 81A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 82B - AWS Academy Cloud Solutions Architecture Certification Prep

### 2 units

This course focuses on teaching technical expertise in cloud computing and the skills needed to pursue AWS Certified Solutions Architect - Associate certification. This course is delivered through lectures, hands-on labs, and project work. Students have access to course manuals, online knowledge assessments, hands-on labs, practice certification exam, and discount voucher for the certification exam. 36 hours lecture. Transfer: CSU.

**Recommended Course Preparation:** CIS 82A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 84 - Windows

### 1 unit

Hands-on class introducing Microsoft Windows operations. Topics include: logging in, the Windows Desktop, launching applications, working with multiple applications windows, proper shutdown techniques, and using Microsoft Edge to browse the web. File and folder management are also covered including creating folders, copying and moving files and folders, searching for specific files, and navigating drives and folders. 9 hours lecture, 27 hours laboratory. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 88A - Introduction to Microsoft Word

### 1.5 units

Develop the skills needed in the workplace to produce common business documents, such as letters, resumes, flyers, and reports. Topics include document creation and editing; use of Microsoft Word features to apply character and paragraph formatting; creating and formatting tables, enhancing visual appeal by incorporating graphics elements, using the mail merge feature, and printing documents. 18 hours lecture, 27 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 71A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 88B - Adv Microsoft Word

### 1.5 units

Advanced word processing techniques used to produce complex business documents. Includes topics such as format multiple page reports, create tables of contents and indexes, insert footnotes/endnotes, using Word's collaboration features to share documents, create macros to automate tasks, and integrate data from Excel and other programs. 18 hours lecture, 27 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 88A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 89A - Desktop Presentation

### 1 unit

Desktop presentation design techniques and enhancements. Application using current desktop presentation software. Hands-on experience creating, editing, saving, printing slide shows, incorporating graphics, charts, tables, SmartArt, sounds, and video, enhancing presentations using transitions and animations. 9 hours lecture, 27 hours laboratory. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 92 - Web: PHP Programming, MySQL

### 3 units

This course showcases the popular and powerful PHP (Hypertext Preprocessor), an open source, server-side scripting language that can be easily integrated with HTML and SQL. For web developers who need to add dynamic content to their web sites, including form processing, database-driven content, password protection, cookie processing. You will learn how PHP can be combined with MySQL to integrate database functions into websites. 45 hours lecture, 27 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 59 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 902 - Introduction to Database Management

### 3 units

This course provides the students with an introduction to the core concepts in data and information management. It is centered around the core skills of identifying organizational information requirements, modeling them using conceptual data modeling techniques, converting the conceptual data models into relational data models and verifying its structural characteristics with normalization techniques, and implementing and utilizing a relational database using an industrial-strength database management system. The course will also include coverage of basic database administration tasks and key concepts of data quality and data security. In addition to developing database applications, the course helps the students understand how large-scale packaged systems are highly dependent on the use of Database Management Systems (DBMSs). Building on the transactional database understanding, the course provides an introduction to data and information management technologies that provide decision support capabilities under the broad business intelligence umbrella. In database design, students learn to analyze business scenarios, create data models, and a conceptual representation of an organization's information. In database programming, students implement their database

design by creating a physical database using Structured Query Language (SQL) to create, query, manipulate, and control access to the data in a relational database. Students learn to create and maintain database objects such as tables, indexes, views, constraints, and sequences. 45 hours lecture, 27 hours laboratory. Transfer: CSU; C-ID# ITIS 180.

**Recommended Course Preparation:** CIS 50 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass

## CIS 9005 - Oracle: APEX Application Development

### 3 units

Introduction to the techniques and tools required to develop database driven web applications using Oracle Application Express (APEX). Using only a web browser and limited programming experience, you can develop and deploy professional applications. Students study how to design, develop and deploy responsive database-driven web applications using APEX. APEX integrated development environment is utilized to provide practical, hands-on activities. 45 hours lecture, 27 hours laboratory. Transfer: CSU.

**Recommended Course Preparation:** CIS 9002 with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter or Pass/No Pass