

COMPUTER INFORMATION SYSTEMS (CIS)

CIS C100 **3 Units (54 lecture hours; 14 lab hours)**

Introduction to Information Systems

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

Examination of information technologies and information systems used in business. This course prepares students with a non-programming introduction to information systems and personal computer applications including word processing, spreadsheets, database, and presentation software. Application of these concepts and methods through hands-on projects developing computer-based solutions to business problems.

CIS C105 **3 Units (54 lecture hours; 14 lab hours)**

Introduction to Business Office Technology

Grading Mode: Standard Letter, Pass/No Pass, Pace+

Transfer Credit: CSU.

Students will explore business applications and collaboration platforms to perform basic business tasks. Topics will include creating documents, spreadsheets, presentations, email and calendaring applications, ethics, and security. The practical application of these concepts and methods will be incorporated through hands-on projects to develop computer-based solutions to real-world business problems.

CIS C111 **3 Units (54 lecture hours; 14 lab hours)**

Information Systems, Programming, and Database Management

Advisory: CIS C100.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU; UC.

Student will explore information systems and their role in business. Topics include information systems, database management systems, computer networking devices, e-commerce, ethics and security, and computer systems hardware and software components. Application of these concepts and methods through hands-on projects developing computer-based solutions to business problems. Meets the lower division computer requirement for business majors at some California State University campuses. **C-ID:** BUS 140, ITIS 120.

CIS C155 **3 Units (54 lecture hours; 14 lab hours)**

Introduction to Java Programming

Advisory: CIS C111.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

Students will learn structured programming techniques using Java, one of the most popular programming languages in the world. Hands-on assignments using Java emphasize control structures, procedures, simple data types, file input/output, and a general introduction to the principles of object-oriented programming. This course helps students prepare for careers such as Software Application Developer through the practical application of conditional statements, loops, and functions using the syntax of the Java programming language.

CIS C156 **3 Units (54 lecture hours)**

Web Development with JavaScript and Cloud Services

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

An introduction for aspiring web developers and programmers to the concepts and topics of the JavaScript language. Topics of the course include JavaScript for interactive web development, with flow control, interaction with hypertext markup language (HTML), variables, object-oriented programming, interaction with databases, and JavaScript Object Notation (JSON). Industry concepts dealing with application security are taught, including Identity and Access Management (IAM), third-party authentication (OAUTH), Web Identify Federation, and token-based security. Students will develop a portfolio site hosted publicly using cloud services to display their work.

CIS C157 **3 Units (54 lecture hours; 14 lab hours)**

Introduction to Python Programming

Advisory: CIS C111.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

Students will learn structured programming techniques using Python, an interpreted, high-level, and general-purpose programming language. The course is designed for students with no prior programming experience. Topics are introduced through hands-on practical exercises with an emphasis on variables, expressions, statements, programming with strings, and a general introduction to the principles of object-oriented programming. This course helps students prepare for careers such as Software Application Developer through the practical application of conditional statements, loops, and functions using the syntax of the Python programming language.

CIS C190 **3 Units (45 lecture hours; 27 lab hours)**

Introduction to Geographic Information Systems and Techniques with Lab

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

An introduction to the concepts and use of Geographic Information Systems (GIS) and its role in analysis and decision making. Course work is based on the mapping and spatial analysis capabilities of GIS software programs. Students will be introduced to basic cartographic principles, maps, resolution, scale, coordinate systems, vector and raster systems, projections, and Global Positioning Systems (GPS). Through computer lab tutorials and case studies, students will learn to use GIS software to view relationships, patterns, or trends that are not possible to see with traditional charts, graphs, and spreadsheets. Enrollment Limitation: GEOG C155; students who complete CIS C190 may not enroll in or receive credit for GEOG C155.

CIS C191 3 Units (54 lecture hours; 18 lab hours)**Intermediate Geographic Information Systems (GIS)****Advisory:** CIS C190 or GEOG C155.**Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

This intermediate-level Geographic Information Systems (GIS) course builds upon the foundational knowledge acquired in introductory GIS courses. It takes a deeper dive into the theory and application of GIS technologies, focusing on advanced spatial analysis, data management, and geospatial modeling. Students will gain a comprehensive understanding of GIS principles and develop proficiency in using GIS software to solve complex spatial problems. Through hands-on projects and case studies, students will apply GIS techniques to real-world scenarios.

CIS C205 3 Units (54 lecture hours)**Principles of Information Systems****Advisory:** CIS C105.**Grading Mode:** Standard Letter, Pass/No Pass, Pace+**Transfer Credit:** CSU.

Students will explore how technology, organizations, and people create an information system to support business decisions. The course introduces key components of information systems, including hardware, software, data security and management, networks, privacy, and people. Students will understand how business resources align with technology plans and the impact of ecommerce on business productivity and customers. The practical application of these concepts and methods will be incorporated through hands-on projects to develop computer-based solutions to real-world business problems.

CIS C240 3 Units (54 lecture hours; 14 lab hours)**SQL Database Development****Advisory:** CIS C111.**Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

Students will explore an introduction to relational database fundamentals and structured query language (SQL) programming skills. Topics covered include relational database architecture, database design techniques, data retrieval, data integrity, and simple and complex query skills. This course is intended for students new to the SQL programming language. Careers and emerging trends in the field will be evaluated.

CIS C250 3 Units (54 lecture hours)**Introduction to Data Analytics****Advisory:** CIS C111 and CIS C240 and ENGL C1000 and STAT C1000.**Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

Students will explore the topics of data analytic thinking and its applicability to the business world. The practical application of business intelligence and data analysis will be experienced in a hands-on project. 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.

CIS C260 3 Units (54 lecture hours; 18 lab hours)**Systems Analysis and Design****Advisory:** CIS C105.**Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

Students will explore the topics of systems analysis and design and its applicability to the business world. The practical application of systems analysis and design will be experienced in hands-on projects. The process of business decision-making will be applied with an emphasis on the systems development life cycle. Careers and emerging trends in the field will be evaluated.

CIS C270 3 Units (54 lecture hours; 18 lab hours)**Predictive Analytics****Advisory:** CIS C250.**Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

In this course students will gain an understanding of the art and science of predictive analytics as it relates to improving business and organizational performance. Students will understand data elements from a business perspective through the exploration of key concepts within the data analytics lifecycle. These concepts include defining the objective, conducting exploratory data analysis, and transforming data formats to produce a dataset suitable for analytical modeling. After successful completion of the course, students will be able to use these skills to produce fully processed datasets that are compatible for building predictive models that can be deployed to increase organizational effectiveness.

CIS C275 3 Units (54 lecture hours; 14 lab hours)**Data Mining and Analytics (Data+)****Advisory:** CIS 250 and C280.**Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

This course covers intermediate topics of data analytics and its applicability to the business world. The practical application of business intelligence and data analysis will be experienced through the manipulation of complex datasets, application of visualizing and reporting data, and the analysis of complex datasets while adhering to quality standards. The business decision-making process will be applied with an emphasis on data mining and manipulation. Critical thinking and performance-based exercises aligned with CompTIA Data+ exam help students develop skills to prepare for careers such as Data Analyst, Reporting Analyst, and Operations Analyst.

CIS C280 3 Units (54 lecture hours)**Data Visualization****Advisory:** CIS C111, CIS C240, and CIS C250.**Grading Mode:** Standard Letter, Pass/No Pass, Pace+**Transfer Credit:** CSU.

Students will explore the topics, tools, and techniques of data visualization and their application across different industries. The practical application of data visualization will be experienced through hands-on projects and technical assignments using a variety of data visualization tools and techniques. In addition, careers and emerging trends in the field will also be presented and evaluated.

CIS C285 3 Units (54 lecture hours)**Data Governance, Privacy, and Policies**

Advisory: CIS C250 or CYBR C101.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

In today's data-driven world, organizations face increasing challenges related to data management, privacy, and compliance. This comprehensive course on Data Governance, Privacy, and Policies is designed to equip professionals, data stewards, and decision-makers with the knowledge and skills necessary to effectively manage, protect, and govern data assets within an organization. The practical application of these concepts and methods will be incorporated through hands-on projects to develop computer-based solutions to real-world business problems.

CIS C290 3 Units (54 lecture hours)**Data Science and Machine Learning**

Advisory: ICS C165 and CIS C157 and CIS C270.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

This course introduces students to the core concepts and techniques of data science and machine learning, exploring their application across various industries. Through hands-on projects and technical assignments, students will gain practical experience in developing algorithms and applying data science methods. The course will also cover career opportunities and emerging trends in the field, helping students understand the evolving landscape of data science and machine learning. Enrollment Limitation: ICS C290; students who complete CIS C290 may not enroll in or receive credit for ICS C290.