# DEPARTMENT OF COMPUTER INFORMATION SYSTEMS



Office in Rockwell Hall, Room 150

(970) 491-7929
biz.colostate.edu/cis (http://biz.colostate.edu/cis/)

Professor Leo R. Vijayasarathy, Chair

## Undergraduate
## Major in Business Administration

- Information Systems Concentration (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/business-administration-major-information-systems-concentration/)

## Certificates

- Business Analytics (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/certificate-business-analytics/)

- Business App Development (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/certificate-business-app-development/)

- Business Cybersecurity (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/certificate-business-cybersecurity/)

- Information Technology for Business Professionals (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/certificate-information-technology-business-professionals/)

## Graduate
## Certificates

- Business Analytics and Accounting Systems (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/graduate-certificate-business-analytics-accounting-systems/)
- Business Application Development (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/graduate-certificate-business-application-development/)
- Business Information Systems (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/graduate-certificate-business-information-systems/)
- Business Intelligence (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/graduate-certificate-business-intelligence/)

- Cybersecurity (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/graduate-certificate-cybersecurity/)
- Information Technology Project Management (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/graduate-certificate-information-technology-project-management/)

## Master's Programs

- Master of Computer Information Systems, Plan C (M.C.I.S.) (http://catalog.colostate.edu/general-catalog/colleges/business/computer-information-systems/plan-c-mcis/)

## Courses
## Computer Information Systems (CIS)

**CIS 120  Business Programming Fundamentals  Credits: 3 (3-0-0)**
**Course Description:** File and operating systems for business application development. Business program development using a high-level programming language.
**Prerequisite:** None.
**Registration Information:** Credit not allowed for both CIS 120 and CIS 210.
**Terms Offered:** Fall, Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 200  Business Information Systems  Credits: 3 (3-0-0)**
**Course Description:** An introduction to information systems (IS) in business and society, focusing on the management and use of IS by diverse individuals, groups, and organizations.
**Prerequisite:** None.
**Registration Information:** Sections may be offered: Face-to-Face, Mixed Face-to-Face, or Online.
**Terms Offered:** Fall, Spring, Summer.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 210  Information Technology in Business  Credits: 3 (3-0-0)**
**Prerequisite:** CIS 200, may be taken concurrently.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 240  Application Design and Development  Credits: 3 (3-0-0)**
**Course Description:** Software engineering methods including design, implementation, and testing using structured and event-driven techniques, logic, and data structures.
**Prerequisite:** CIS 200.
**Terms Offered:** Fall, Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 301  End User Computing  Credits: 3 (3-0-0)**
**Course Description:** End user applications in a Graphical User Interface environment including spreadsheet, word processing, and presentation graphics; Internet concepts.
**Prerequisite:** None.
**Registration Information:** Sections may be offered: Online.
**Terms Offered:** Fall, Spring, Summer.
**Grade Modes:** S/U within Student Option, Trad within Student Option.
**Special Course Fee:** No.

**CIS 310  Data Preparation for Business Analytics  Credits: 3 (3-0-0)**
**Course Description:** Focus on the knowledge and skills used for identifying, collecting, transforming, refining, integrating, and structuring data for performing analytics.
**Prerequisite:** CIS 200.
**Terms Offered:** Fall, Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 320  Project Management for Information Systems  Credits: 3 (3-0-0)**
**Course Description:** Project management concepts including work breakdown structure, estimating, scheduling, tools, and reports.
**Prerequisite:** CIS 200 or CS 165.
**Terms Offered:** Fall, Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 340  Advanced Application Design and Development  Credits: 3 (3-0-0)**
**Course Description:** Design and construction of business applications using object-orientation and advanced data structures.
**Prerequisite:** CIS 240.
**Registration Information:** Credit not allowed for both CIS 340 and CIS 220.
**Terms Offered:** Fall, Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 350  Operating Systems and Networks  Credits: 3 (3-0-0)**
**Course Description:** Multiuser and network operating systems; basic networking concepts including security, transmission, performance, and topologies.
**Prerequisite:** CIS 240.
**Term Offered:** Fall.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 355  Business Database Systems  Credits: 3 (3-0-0)**
**Course Description:** Physical and logical design, implementation, and administration of databases.
**Prerequisite:** CIS 200.
**Registration Information:** Sections may be offered: Online.
**Terms Offered:** Fall, Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 360  Systems Analysis and Design  Credits: 3 (3-0-0)**
**Course Description:** Introduction to the systems development life cycle and related methodologies. Emphasis on analysis and design activities, such as business process analysis, system requirements determination and specification, user interface design, and implementation alternative evaluation (e.g., custom in-house development, outsourcing, and cloud-based solutions).
**Prerequisite:** CIS 240 or CS 253.
**Terms Offered:** Fall, Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 370  Business Analytics  Credits: 3 (3-0-0)**
**Course Description:** Concepts, processes, techniques, and tools to extract, cleanse, organize, transform, store, analyze, and visualize data to support business decision making.
**Prerequisite:** CIS 200 and STAT 204.
**Terms Offered:** Fall, Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 410  Web Application Development  Credits: 3 (3-0-0)**
**Prerequisite:** CIS 355 and CIS 240.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 411  Enterprise Resource Planning Systems  Credits: 3 (3-0-0)**
**Course Description:** Introduction to enterprise resource planning (ERP) systems concepts, business processes impacted by ERP, systems and software integration.
**Prerequisite:** ACT 220 and CIS 200.
**Terms Offered:** Fall, Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 413  Advanced Networking and Security  Credits: 3 (3-0-0)**
**Course Description:** Modern communication standards, protocol systems; network security, security policies, attack and protection mechanisms, legal and ethical issues.
**Prerequisite:** CIS 350.
**Registration Information:** Sections may be offered: Online.
**Term Offered:** Fall.
**Grade Modes:** S/U within Student Option, Trad within Student Option.
**Special Course Fee:** No.

**CIS 455  Advanced Database Management  Credits: 3 (3-0-0)**
**Course Description:** Advanced data management topics including performance tuning, concurrency control, security, object-oriented databases, and data warehousing.
**Prerequisite:** CIS 355.
**Term Offered:** Spring.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 487  Internship  Credits: 3 (0-9-0)**
**Course Description:** Supervised and planned work experience paralleling concentration in industry.
**Prerequisite:** CIS 355 and CIS 360.
**Terms Offered:** Fall, Spring, Summer.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 492  Seminar  Credits: 3 (3-0-0)**
**Course Description:** Current topics in computer-based information systems.
**Prerequisite:** None.
**Term Offered:** Spring.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 495  Independent Study  Credits: Var[1-18] (0-0-0)**
**Course Description:**
**Prerequisite:** None.
**Terms Offered:** Fall, Spring, Summer.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 496B  Group Study: Small Business Information Systems  Credits: Var[1-18] (0-0-0)**
**Course Description:**
**Prerequisite:** None.
**Terms Offered:** Fall, Spring, Summer.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 496C  Group Study: Communications and Distributed Systems  Credits: Var[1-18] (0-0-0)**
**Course Description:**
**Prerequisite:** None.
**Terms Offered:** Fall, Spring, Summer.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 496D  Group Study: Information Systems Performance Measurement  Credits: Var[1-18] (0-0-0)**
**Course Description:**
**Prerequisite:** None.
**Terms Offered:** Fall, Spring, Summer.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 496E  Group Study: Current Issues in Business Computing Systems  Credits: Var[1-18] (0-0-0)**
**Course Description:**
**Prerequisite:** None.
**Terms Offered:** Fall, Spring, Summer.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 498  Research  Credits: Var[1-3] (0-0-0)**
**Prerequisite:** None.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 505  Database Concepts  Credit: 1 (1-0-0)**
**Course Description:** An introduction to business database systems for non-CIS majors. Covers introductory database concepts, terminology, structures, relationships, and querying with SQL.
**Prerequisite:** None.
**Restriction:** Must be a: Graduate.
**Registration Information:** Graduate standing. This is a partial semester course. Offered as an online course only.
**Term Offered:** Summer.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 563  Information Assurance and Security  Credits: 3 (3-0-0)**
**Course Description:** Examine information assurance and security from an enterprise risk management perspective. Enterprise risk management provides a framework for identifying, evaluating, prioritizing, and mitigating IT-related risks based on the organization's objectives, strategy, risk appetite, and culture. Information assurance is the practice of managing information-related risks to ensure that (only) authorized parties have access to the "right" information at the "right" time.
**Prerequisite:** None.
**Registration Information:** Sections may be offered: Online.
**Term Offered:** Fall.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 570  Business Intelligence  Credits: 3 (3-0-0)**
**Course Description:** Harnessing vast data stores to solve problems, enhance decision-making, discover new business opportunities, and to derive additional benefits.
**Prerequisite:** None.
**Registration Information:** Admission to the MACC, MBA, or the MCIS program. Sections may be offered: Online.
**Term Offered:** Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 575  Applied Data Mining and Analytics in Business  Credits: 3 (3-0-0)**
**Course Description:** Data mining is a process of selecting, exploring and modeling large amounts of data to identify patterns and relationships among key variables.
**Prerequisite:** STAT 204.
**Registration Information:** Sections may be offered: Online.
**Term Offered:** Fall.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 576  Business Data Visualization  Credits: 3 (3-0-0)**
**Course Description:** Methods to solve data visualization problems; critique and evaluate current systems; develop skills in the construction of data visualization.
**Prerequisite:** None.
**Registration Information:** Sections may be offered: Online.
**Term Offered:** Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 600A  Project Management: Information Technology  Credits: 3 (3-0-0)**
**Course Description:** Strategic role in and management of information technology and software development projects.
**Prerequisite:** None.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Sections may be offered: Online. Credit not allowed for both CIS 600A and CIS 600B.
**Terms Offered:** Fall, Spring, Summer.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 600B  Project Management: Impact Enterprise  Credits: 2 (2-0-0)**
**Course Description:** Fundamentals of managing projects in impactful enterprises including coverage of common tools and techniques such as work breakdown structures, project networks, cost estimating and risk planning.
**Prerequisite:** None.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** This is a partial semester course. Sections may be offered: Online. Credit not allowed for both CIS 600A and CIS 600B.
**Term Offered:** Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 601  Enterprise Computing and Systems Integration  Credits: 3 (3-0-0)**
**Also Offered As:** MGT 601.
**Course Description:** Integrated extended enterprise planning and execution systems concepts including ERP, CRM, SCM, MRP II, business processes, front/back office systems.
**Prerequisite:** None.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Admission to the MACC or MCIS program. Sections may be offered: Online. Credit not allowed for both CIS 601 and MGT 601.
**Term Offered:** Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 605  Business Visual Application Development  Credits: 3 (3-0-0)**
**Course Description:** Design, construction, and testing of business application systems including leading-edge visual, E-commerce languages, and tools.
**Prerequisite:** None.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Admission to the M.B.A., M.C.I.S., M.S.B.A., or M.E. program. Sections may be offered: Online.
**Term Offered:** Fall.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 606  Application Software Infrastructure  Credits: 3 (3-0-0)**
**Course Description:** Design, construction, and testing of business application software infrastructure including hardware, operating software, and communications network.
**Prerequisite:** None.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Admission to the M.B.A., M.C.I.S., M.S.B.A., or M.E. program. Sections may be offered: Online.
**Term Offered:** Fall.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 610  Software Development Methodology  Credits: 3 (3-0-0)**
**Course Description:** Methods for all phases of software development focusing upon the establishment of economical software that is reliable and cross platform.
**Prerequisite:** None.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Admission to the MCIS or ME program. Sections may be offered: Online.
**Term Offered:** Fall.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 611  Object-Oriented Systems  Credits: 3 (3-0-0)**
**Course Description:** Object-oriented and web-based software; object model describing classes; relationships to other objects, attributes, and operations.
**Prerequisite:** None.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Admission to the MCIS or ME program. Sections may be offered: Online.
**Term Offered:** Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 620  IT Communications Infrastructure  Credits: 3 (3-0-0)**
**Course Description:** Technical aspects of information communications, business considerations; wireless technology, architecture, and applications.
**Prerequisite:** CIS 606, may be taken concurrently.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Admission to the MCIS program. Sections may be offered: Online.
**Term Offered:** Fall.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 623  Cybersecurity  Credits: 3 (3-0-0)**
**Course Description:** Detailed examination of modern security topics, blending coverage of many of the domains of the CISSP with those of the CEH: Access Control, Network Security, Risk Management, Software Development Security, Cryptography, Architecture, Operations, Business Continuity, Legal/Ethical issues, as well as attack, defense and counter-measure mechanisms.
**Prerequisite:** CIS 620.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Graduate standing. Sections may be offered: Online.
**Term Offered:** Fall.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 655  Business Database Systems  Credits: 3 (3-0-0)**
**Course Description:** Database analysis, design, administration; data modeling; data sublanguages, query facilities; distributed database systems.
**Prerequisite:** CIS 605 or CIS 611.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Admission to the MCIS program. Sections may be offered: Online.
**Term Offered:** Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 665  E-Business Application Technologies  Credits: 3 (3-0-0)**
**Course Description:** Developing E-business (B2B and B2C) through construction and deployment.
**Prerequisite:** CIS 610 and CIS 655, may be taken concurrently.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Admission to the MAS, MBA, or MCIS program. Sections may be offered: Online.
**Term Offered:** Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 670  Advanced IT Project Management  Credits: 3 (3-0-0)**
**Course Description:** Advanced tools, techniques and skills for advanced risk management, change movement, and performance/control measures in cross-functional projects.
**Prerequisite:** CIS 600 or CIS 600A.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Sections may be offered: Online.
**Term Offered:** Spring.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 675  Agile Management and Product Development  Credits: 3 (3-0-0)**
**Course Description:** Business model process optimization; managing rapid product development; incorporating constituent feedback throughout the product life cycle.
**Prerequisite:** CIS 600A or CIS 600.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Sections may be offered: Online.
**Term Offered:** Fall.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 676  Information Technology Management  Credits: 3 (3-0-0)**
**Course Description:** Strategic information technology management of business, technical, system and information services.
**Prerequisite:** None.
**Restriction:** Must be a: Graduate, Professional.
**Registration Information:** Admission to graduate program in business. Sections may be offered: Online.
**Term Offered:** Spring.
**Grade Mode:** Traditional.
**Special Course Fee:** No.

**CIS 695  Independent Study  Credits: Var[1-18] (0-0-0)**
**Course Description:**
**Prerequisite:** None.
**Restriction:** Must be a: Graduate, Professional.
**Terms Offered:** Fall, Spring.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 696  Group Study  Credits: Var[1-18] (0-0-0)**
**Course Description:**
**Prerequisite:** None.
**Restriction:** Must be a: Graduate, Professional.
**Terms Offered:** Fall, Spring.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.

**CIS 699  Thesis  Credits: Var[1-18] (0-0-0)**
**Course Description:**
**Prerequisite:** None.
**Restriction:** Must be a: Graduate, Professional.
**Terms Offered:** Fall, Spring, Summer.
**Grade Mode:** Instructor Option.
**Special Course Fee:** No.