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. Vijayasarth, 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)
Course Description: Introduction to information systems: the IS profession; hardware, software, and programming; web and database applications; data analysis tools.
Prerequisite: CIS 200, may be taken concurrently.
Registration Information: Credit not allowed concurrently.
Terms Offered: Fall, Spring, Summer.
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 Mode: Traditional.
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.
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.
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.
Terms 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.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CIS 360  Systems Analysis and Design  Credits: 3 (3-0-0)
Course Description: Traditional and cutting-edge systems analysis and design techniques, with emphasis on object-oriented approaches.
Prerequisite: CIS 240.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CIS 361  End User Computing II  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 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)
Course Description: Web development techniques and strategies including Active Server Pages using VBScript, JavaScript, ColdFusion; security, web design.
Prerequisite: CIS 355 and CIS 240.
Terms Offered: Fall.
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.
Terms Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CIS 414  Data Warehousing  Credits: 3 (3-0-0)
Course Description: Introduction to data warehousing and data mining, including active and passive data warehousing, data mining, and business intelligence.
Prerequisite: CIS 355.
Terms Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CIS 417  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 419  Seminar  Credits: 3 (3-0-0)
Course Description: Current topics in computer-based information systems.
Prerequisite: None.
Terms Offered: Spring.
Grade Mode: Instructor 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.
Terms 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 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 498 Research  Credits: Var[1-3] (0-0-0)
Course Description:
Prerequisite: None.
Terms Offered: Fall, Spring, Summer.
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: CIS 575 or CIS 605.
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.
Term 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 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: CIS 610.
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 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 605 and CIS 606 and CIS 610.
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 countermeasure 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 605 and CIS 606 and CIS 610.
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: 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.