

INFORMATION SYSTEMS

Program Overview

Students with a major in information systems develop a solid understanding of the use, design, development, and management of information systems and information technology. Rider's information systems courses are designed to give students the opportunity to develop and manage a variety of projects that can be applied to real business settings immediately.

Increasingly, organizations that seek individuals with an information systems specialization expect excellent organizational, communication, and interpersonal skills as well as excellent analytical skills. All information systems students are encouraged to participate in a full semester co-op or summer internship experience during their junior year.

Curriculum Overview

The required freshman-level information systems core course trains students to apply practical knowledge in their use of computer-based productivity tools. Core courses also allow students to demonstrate an understanding of enterprise integration applications such as SAP R/3, and also explain the value of electronically integrating the major functional areas of an organization in order to facilitate more effective management decision-making.

Students demonstrate an understanding of the enabling information technologies (IT) that organizations use worldwide to develop and sustain a strategic and competitive position in the marketplace. Students also demonstrate knowledge of the benefits and drawbacks of adopting and using these information technologies.

Students with a major or a minor in information systems will be able to demonstrate their understanding of information technology by applying their technical knowledge and skills to provide a practical solution to a business problem, business need, or business opportunity.

Degree Offered

- B.S.B.A. in Information Systems
- Minor in Information Systems

Contact

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Program Website: Information Systems (<http://www.rider.edu/academics/colleges-schools/college-business-administration/undergraduate-programs/information-systems/>)

Associated Department: Department of Information Systems, Analytics and Supply Chain Management (<http://www.rider.edu/academics/colleges-schools/college-business-administration/undergraduate-programs/information-systems/>)

Related Programs:

- Business Administration (<http://catalog.rider.edu/undergraduate/colleges-schools/business-administration/majors-minors-certificates/business-administration/>)

- Global Supply Chain Management (<http://catalog.rider.edu/undergraduate/colleges-schools/business-administration/majors-minors-certificates/global-supply-chain-management/>)
- Management and Leadership (<http://catalog.rider.edu/undergraduate/colleges-schools/business-administration/majors-minors-certificates/management-leadership/>)

Information Systems Major Program Requirements

(21 credits)

Note: For graduation, students must achieve an overall GPA of 2.0 in the major, with no course grade less than 'C'.

Code	Title	Credits
Business Core		
See Business Core Requirements (http://catalog.rider.edu/undergraduate/colleges-schools/business-administration/core-requirements/)		
Required Courses:		
CIS 200	Application Development with JavaScript	3
CIS 270	Computer Networking	3
CIS 330	Database Systems	3
Electives		
Select four of the following:		12
CIS 220	Application Development with JavaScript and Python	
CIS 255	Intro to Game Design & Development	
CIS 260	Business Graphics	
CIS 300	Programming with Java	
CIS 309	Data Structures & Cmptr Archit	
CIS 315	Integrated Business with SAP	
CIS 319	Computer Forensics	
CIS 320	Cloud Computing Administration	
CIS 325	User-Centered Design	
CIS 340	Electronic Commerce	
CIS 350	Practical Business Analytics with Excel	
CIS 360	Data Mining	
CIS 370	Systems Analysis and Design Project	
CIS 375	Business Process Design for a Global Economy	
CIS 388	Design Thinking	
CIS 390	Project Management	
CIS 399	The Co-Operative Experience ¹	
CIS 410	Selected Topics in Information Systems	
CIS 430	Enterprise Integration	
CIS 491	Computer Information Systems Internship	
Total Credits		21

¹ The total credits that count towards the major from the CIS 399 experience cannot exceed 3.

Information Systems Minor Requirements

(15 credits)

This program is available to all Rider University students except Information System majors.

Code	Title	Credits
Gateway Course		3
CIS 185	Information Systems Essentials	
Required Courses		6
Select two of the following courses:		
CIS 200	Application Development with JavaScript	
CIS 270	Computer Networking	
CIS 330	Database Systems	
CIS Electives		6
Select two CIS courses from the following list to fulfill the remaining requirement:		
CIS 220	Application Development with JavaScript and Python	
CIS 255	Intro to Game Design & Development	
CIS 260	Business Graphics	
CIS 300	Programming with Java	
CIS 309	Data Structures & Cmptr Archit	
CIS 315	Integrated Business with SAP	
CIS 319	Computer Forensics	
CIS 320	Cloud Computing Administration	
CIS 325	User-Centered Design	
CIS 340	Electronic Commerce	
CIS 350	Practical Business Analytics with Excel	
CIS 360	Data Mining	
CIS 370	Systems Analysis and Design Project	
CIS 375	Business Process Design for a Global Economy	
CIS 388	Design Thinking	
CIS 390	Project Management	
CIS 399	The Co-Operative Experience	
CIS 410	Selected Topics in Information Systems	
CIS 430	Enterprise Integration ¹	
CIS 491	Computer Information Systems Internship	
Total Credits		15

¹ Permission of instructor is required

Notes:

1. The maximum number of credits students may use to count towards another minor (e.g., Business Analytics minor), is six (i.e., two courses, including CIS 185).

Courses and Descriptions

CIS 185 Information Systems Essentials 3 Credits

This course will provide students with a conceptual understanding and hands-on practice developing spreadsheets, creating effective visualizations, and utilizing relational databases. Students will also be expected to complete a project related to a current technology-related topic. At the completion of this course students will be able to apply the appropriate information systems technology tools (specifically spreadsheets, visualization applications, and relational databases) to a variety of problem solving activities.

CIS 200 Application Development with JavaScript 3 Credits

In the early 1990s, Tim Berners-Lee created a set of technologies to allow information sharing at the CERN particle accelerator in Europe. These technologies dramatically changed the face of computing and became what we know today as the Web. Understanding how to develop and manage applications for the Web is a requirement for the information system professional. Because of the ease of development, deployment, maintenance and general scalability of Web applications, this approach to building and managing applications has become the de facto standard for business application development. This class will examine Web application development in detail. Through a combination of lecture and labs, students will learn the architecture of Web applications, how to develop Web pages using HTML and CCS, how to control user interaction with those pages using the JavaScript programming language. The programming basics of variable declaration and usage, program flow of control, function declaration and calling, and object usage and declaration will also be shown. The use of the JQuery Javascript library to ease the development of Web pages will also be shown.

CIS 220 Application Development with JavaScript and Python 3 Credits

In the early 1990s, a set of network technologies was combined to create a platform for application development. These technologies are now referred to as the Web. Because of the ease of development, deployment, maintenance, and scalability of Web applications, this approach to building and managing applications has become the de facto standard for business application development. Understanding how to develop and manage applications for the Web is vital for information systems professionals. This class will examine Web application development in detail. Through a combination of lecture and labs, students will learn the architecture of Web applications, how to develop Web pages using the Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS), and managing user interaction in those pages using the JavaScript programming language. The process of creating dynamic web pages using the PHP programming language on the Web server will also be taught.

Prerequisite(s): CIS 200.

CIS 230 Introduction to Cybersecurity 3 Credits

This course introduces students to cybersecurity, the process of securing computers and the information they store. Coverage includes security attacks and attack prevention and mediation, security firewalls, PC and server security, authentication methods and procedures, and network security. Through lecture and hands-on labs students will learn how computer systems can be attacked and how computer professionals can manage the risks and potential damage from these attacks.

CIS 255 Intro to Game Design & Development 3 Credits

The basic concepts, logic, techniques, tools, and vocabulary associated with interactive, digital game and simulation development will be explored through a combination of lectures, discussions, and hands-on learning. Knowledge and skills derived can be applied to a wide variety of business and other organizational settings globally for interactive simulations, games, and education.

CIS 260 Business Graphics 3 Credits

Basic color theory, typography, and page/slide layout are presented. Students utilize presentation, word processing and photo editing applications to create and edit various documents through hands-on labs and projects.

Prerequisite(s): CIS 185 or permission of instructor.

CIS 270 Computer Networking 3 Credits

This course provides an introduction to business data communications and networking. The Internet and OSI models are discussed. Network technologies include local area networks, backbone, wide area networks, and the Internet. Introduction to network design, security, and network management are also provided.

Prerequisite(s): CIS 185.

CIS 300 Programming with Java 3 Credits

Students will learn the basic concepts of object-oriented programming as contrasted with traditionally structured programming and will develop applications using the Java programming language.

Prerequisite(s): CIS 200.

CIS 309 Data Structures & Cmptr Archit 3 Credits

An introduction to linked lists, stacks, queues, trees, pointers, and sorting and searching algorithms. Students will learn the technical details of data storage and manipulation along with the concepts of program execution, and will use tools such as hex-editors and debuggers.

Prerequisite(s): CIS 185 or permission of instructor.

CIS 315 Integrated Business with SAP 3 Credits

This course provides an introduction to enterprise resource planning (ERP) systems and addresses how integrated information systems improve business operations. Students will learn about functional business areas and business processes, and understand the problems inherent in un-integrated enterprise information systems. Using SAP software and case studies, students will learn how ERP systems are being used to facilitate integrated, real-time management decision making.

Prerequisite(s): CIS 185 and ACC 210.

CIS 319 Computer Forensics 3 Credits

Students will use computers to obtain and analyze evidence found on storage devices such as those confiscated under warrant, and learn how to trace digital activities. Criminal and investigative procedures will be explored in depth.

Prerequisite(s): CIS 185.

CIS 320 Cloud Computing Administration 3 Credits

Students will learn the process of creating or provisioning a cloud computing environment. Content will include the provisioning of operating system resources in a cloud environment, operating system installation, configuration and maintenance. Virtualization, the process of creating multiple operating system environments on a single piece of hardware will be covered in some detail. Troubleshooting problems in the virtualization environment and in the operating system environment will also be covered. Hands-on labs will be used throughout. Both Windows and Linux operating systems will be used.

Prerequisites: CIS 185.

CIS 325 User-Centered Design 3 Credits

This course introduces students to the design and evaluation of interactive and internet-based devices and systems, including methods to understand user needs and requirements, design and prototype alternative systems, and evaluate system usability. Topics include interaction design, human factors, requirement gathering techniques, protocol analysis, usability testing, and heuristics evaluation.

Prerequisite(s): Junior standing.

CIS 330 Database Systems 3 Credits

This course involves the study of computer databases. Major topics include relational databases, use of the structured query language (SQL) to query relational databases, and design and maintenance of relational databases.

Prerequisite(s): CIS 185.

CIS 340 Electronic Commerce 3 Credits

Students will learn about the most current e-commerce technologies and business models through readings, case studies, and hands-on projects. Students will gain experience using business data analytics tools to understand and evaluate the value of data that is generated and collected from various e-commerce platforms on the Internet.

CIS 350 Practical Business Analytics with Excel 3 Credits

This is a required course for the Business Analytics major/minor. This course will provide the student with an opportunity to gain proficiency in analyzing and visualizing data using Excel. The learning experience includes not only classic data tools, such as PivotTables, VLOOKUP, and data visualization, but also more advanced data tools such as descriptive statistics, inferential statistics, predictive analytics, and optimization using Excel Solver.

Prerequisite(s): BDA 201.

CIS 360 Data Mining 3 Credits

This course deals with modern technologies for data analysis. Hands-on exercises for data retrieval, data visualization and predictive analytics will be carried out using up-to-date methodologies and software tools. The full data mining life cycle will be covered from recognizing business problems and opportunities amenable to data mining analysis through deploying and monitoring solutions.

Prerequisite(s): CIS 185 with a minimum grade of D .

CIS 370 Systems Analysis and Design Project 3 Credits

Topics include modeling techniques and methodologies to address the planning, analysis, design, and implementation of high quality systems, delivered on time and within budget. Using rapid application development tools, students will also construct an operational system within the span of a single semester. Issues and tools related to the management of project teams are also discussed.

Prerequisite(s): CIS 330.

CIS 375 Business Process Design for a Global Economy 3 Credits

The course is aimed at generating a comprehensive understanding of the emergent domain of global business process outsourcing. Various referred to as knowledge process outsourcing, IT-enabled services outsourcing, and business services outsourcing, the industry has seen enormous growth over the last decade and continues to grow. India commands the single largest share of this market but South Africa, Eastern Europe, Philippines, Morocco and Egypt have all emerged as other contenders in this global sector. The course is divided into four modules: the political economy of global outsourcing, process modeling, outsourcing management, and industry analysis. Please note: Students will not receive credit for both CIS 375 and GSC 375.

Prerequisite(s): junior standing.

CIS 377 Risk Management and Compliance for Information Security 3 Credits

This course will use a holistic approach to examine the management of information security risk in relation to the strategic goals of the business organization. Students taking this course will learn to identify threats, threat agents, potential exploits and the information assets which will be impacted by those exploits. The risk management process will specifically examine threat agents, and the amplifiers, catalysts, and inhibitors to those threats. Using a process which assigns a weight to various threats, and a comprehensive risk analysis model will be developed.

CIS 385 Management Information Systems 3 Credits

This course will enhance students' digital dexterity and familiarity with existing and emerging information technologies, emphasizing skills of abstraction in relation to digital strategy and organizational change, innovation, analytics, and ethics. This course will also provide hands-on experience with at least one essential business technology. At the completion of the course, students will have an understanding of the business-related, policy, societal, and ethical implications associated with modern information systems.

Prerequisite(s): CIS 185 and junior or senior standing.

CIS 388 Design Thinking 3 Credits

This undergraduate course on Design Thinking provides students with a framework for dealing with unstructured problems to create innovative business solutions. Students in this course will learn about the complex and iterative process of design thinking and its several phases, including problem finding, observation, visualization and sense making, ideation, prototyping and testing, and explore the value of design thinking for creating business solutions with lasting impact. Students who have earned credits for CIS 388 or equivalent cannot take PMBA 8352 for credit.

Prerequisite(s): JR/SR, 54+ credits, or POI.

CIS 390 Project Management 3 Credits

This course introduces students to general project management, the process of organizing resources to achieve business goals. Topics include the identification, approval, analysis, and general management of complex business projects. Project management tools, reports, techniques, and approaches will be covered.

Prerequisite(s): CIS 185.

CIS 399 The Co-Operative Experience 6 Credits

The co-op program provides students with an opportunity to work full-time in a company and apply what they have learned in their computer information systems and other business classes. It also enhances students' employment opportunities since many employers use a co-op program as a first step before they hire full-time employees. Eligible students include junior computer information systems majors with a minimum overall GPA of 3.0, and a minimum GPA of 3.0 in any computer information systems coursework completed prior to submission of the co-op application. Three of the co-op credits can be applied toward the computer information systems major, and three credits can be applied toward business or free elective requirements. Grading is on a pass/fail basis.

Prerequisite(s): Completion of two of the three courses: CIS 200, CIS 270, and CIS330.

CIS 410 Selected Topics in Information Systems 3 Credits

Information and communication technologies are evolving rapidly and continually. The Special Topics course facilitates the exploration of a selected topic (or combination of topics) that represents a recent technological advance with important and direct implications in the field of computer information systems. Current research, readings, lectures, discussions and/or hands-on computer experience or other appropriate measures will be employed to stimulate student learning.

Prerequisite(s): to be determined by instructor.

CIS 430 Enterprise Integration 3 Credits

The major focus of this course includes the forces driving enterprise integration as well as the management decisions associated with the design and implementation of enterprise systems. Students will use SAP ERP extensively to configure, build, test, and implement an enterprise system for a real business environment from the ground up.

Prerequisite(s): CIS 315.

CIS 490 Independent Study: Research and Creative Expression 1-4 Credits

Topic to be approved by professor and chairperson. Available for juniors and seniors. No more than 12 credits allowed toward graduation.

Prerequisite(s): permission of instructor.

CIS 491 Computer Information Systems Internship 3 Credits

This is an honors course that provides the student with approximately two months of supervised employment with participating companies. Students are given a variety of information technology experiences. They are required to complete a term paper and/or to make an oral presentation to the faculty. Grading is on a pass/fail basis.

Prerequisite(s): permission of instructor.