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, along with communication and interpersonal skills and excellent analytical skills. All information systems students are encouraged to participate in a full semester co-op or summer internship experiences during their junior year.

Curriculum Overview

The required freshman-level information systems core course trains student 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 explains 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 worldwide use to develop and sustain a strategic and competitive position in the marketplace. Students also demonstrate knowledge about 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

Contact

Boris Vilic
Dean, College of Continuing Studies
Bart Luedeke Center
609-896-5033
ccs@rider.edu

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

Associated Department: Department of Information Systems 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 Program Requirements

(21 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Core Courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIS 200</td>
<td>Web Application Development I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 270</td>
<td>Networking and Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 330</td>
<td>Database Management</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select four of the following:</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>CIS 220</td>
<td>Web Application Development II</td>
<td></td>
</tr>
<tr>
<td>CIS 255</td>
<td>Into to Game Design &amp; Development</td>
<td></td>
</tr>
<tr>
<td>CIS 260</td>
<td>Business Graphics</td>
<td></td>
</tr>
<tr>
<td>CIS 300</td>
<td>Object-Oriented Programming</td>
<td></td>
</tr>
<tr>
<td>CIS 309</td>
<td>Data Structures &amp; Comp Archit</td>
<td></td>
</tr>
<tr>
<td>CIS 315</td>
<td>Integrated Business with SAP</td>
<td></td>
</tr>
<tr>
<td>CIS 319</td>
<td>Computer Forensics</td>
<td></td>
</tr>
<tr>
<td>CIS 320</td>
<td>Cloud Computing Administration</td>
<td></td>
</tr>
<tr>
<td>CIS 325</td>
<td>User-Centered Design</td>
<td></td>
</tr>
<tr>
<td>CIS 340</td>
<td>Electronic Commerce</td>
<td></td>
</tr>
<tr>
<td>CIS 350</td>
<td>Practical Business Analytics with Excel</td>
<td></td>
</tr>
<tr>
<td>CIS 360</td>
<td>Data Mining</td>
<td></td>
</tr>
<tr>
<td>CIS 370</td>
<td>Systems Analysis and Design Project</td>
<td></td>
</tr>
<tr>
<td>CIS 375</td>
<td>Adv. Sem in Global Outsourcing</td>
<td></td>
</tr>
<tr>
<td>CIS 390</td>
<td>Project Management</td>
<td></td>
</tr>
<tr>
<td>CIS 399</td>
<td>The Co-Operative Experience ¹</td>
<td></td>
</tr>
<tr>
<td>CIS 410</td>
<td>Selected Topics: Game Design and Dev.</td>
<td></td>
</tr>
<tr>
<td>CIS 420</td>
<td>Enterprise Security</td>
<td></td>
</tr>
<tr>
<td>CIS 430</td>
<td>Enterprise Systems Configuratn</td>
<td></td>
</tr>
<tr>
<td>CIS 491</td>
<td>Computer Information Systems Internship</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>21</td>
</tr>
</tbody>
</table>

¹ The total credits that count towards the major from the internship and co-op experience cannot exceed 3.

Note:

1. For graduation, the student must achieve an overall GPA of 2.0 in the major, with no course grade less than “C-“.

Information Systems Minor Requirements

(15 credit program is available to all Rider University students)
### Courses and Descriptions

**CIS 185 Information Systems Essentials 3 Credits**
This course will enable students to use Microsoft Excel and Access to design and create complex applications to support effective decision making. Students will use Excel to design and create spreadsheets to support business analytics. Access will be used to understand, design, create, and utilize relational databases.

**CIS 200 Web Application Development I 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 CSS, 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 200 Web Application Development II 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 255 Into 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 Networking and Telecommunications 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 Object-Oriented Programming 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 Management 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.
Prerequisite(s): CIS 185, MSD 200 & MSD 201.

CIS 350 Practical Business Analytics with Excel 3 Credits
CIS 350 – Practical Business Analytics with Excel is a required course for the proposed Business Analytics 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 tools, such as pivot tables and VLOOKUP, but also more advanced Excel data tools such as building Excel data models, creating data mash ups, and using the Power Pivot add-in. The course also requires students to complete a data analysis project along with a presentation about the business insights drawn from the data analysis results. The project requires students to understand the business problem, identify and apply the appropriate analytic and visualization tools, and communicate the insight in an intuitive and effective manner.
Prerequisite(s): CIS 185, MSD 200 & MSD 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.

CIS 370 Systems Analysis and Design Project 3 Credits
This course is designed to provide students with an opportunity to apply system analysis and design techniques to the development of an IS. The course is divided into four modules: the political economy of global outsourcing, process modeling, outsourcing management, and industry analysis. The course also requires students to complete a data analysis project along with a presentation about the business insights drawn from the data analysis results. The project requires students to understand the business problem, identify and apply the appropriate analytic and visualization tools, and communicate the insight in an intuitive and effective manner.
Prerequisite(s): CIS 330.

CIS 375 Adv. Sem in Global Outsourcing 3 Credits
The course is aimed at generating a comprehensive understanding of the emergent domain of global business process outsourcing. Variously 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 receive credit for both CIS 375 and GSC 375.
Prerequisite(s): Junior standing.

CIS 385 Management Information Systems 3 Credits
The course focuses on the management and use of information systems and technology for the strategic and operational advantage of the firm. Students explore the business value of information resources including current communication, database, as well as hardware and software technologies. GSC 385 can fulfill the CIS 385 requirement for all business majors. Please note: Students will not receive credit for both GSC 385 and CIS 385 without prior approval by the Dean’s office.
Prerequisite(s): CIS 185 and junior or senior standing.
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 CIS 330.

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 420 Enterprise Security 3 Credits
This course introduces students to computer security. Coverage includes hardware, software, and network security issues. Through hands-on labs students will learn how computer systems can be comprised and how computer professionals can prevent and provide counterattacks for security intrusions.
Prerequisite(s): CIS 270 or permission of 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.