The Aviation Program is offered in affiliation with the Mizzou Aviation Company of Joplin, Missouri. Special fees above tuition are required for this course.

For additional information contact:
Dr. Tia M. Strait
Office: Public Safety Center 126
Phone: 417.625.3155
Email: strait-t@mssu.edu

Course Descriptions

**AV 0200 (Demand)** 5 hrs. cr.
**Basic Pilot Training**
An integrated course designed to meet ground school and flight training requirements for eligibility to take the Federal Aviation Administration examination for a Private Pilot Certificate. In addition to scheduled ground school classes, the course requires approximately 45 hours of dual and solo flight and check flight. Credit is awarded when the FAA certificate is obtained. Special fees and a third class medical certificate are required. Special fees for this course include plane rental and examiners test fee. Course grade is recorded as Pass or Fail.

**Computer Information Science**

**Faculty**
Oakes - Head, Collins, Herr, Pinet, Schiavo, Tunnell

**Mission**
The Computer Information Science (CIS) Department provides opportunities for a broad undergraduate education in the many aspects of computer information technology. The program offers courses of instruction that develop a thorough understanding of current methods used in the design and implementation of computer based solutions.

**Fundamental Values:** Pursuant to the department’s educational mission, the faculty:
- Maintains the currency of the curriculum through ongoing research and consultation with industry representatives.
- Engages in professional development that allows its members to remain current in their fields and to provide technological leadership to the university community.
- Is committed to the success of its students, both during and after college.

**Program Goals:** The Computer Information Science program will produce graduates who:
- Understand and can utilize core information technologies.
- Can analyze, design and implement effective technology based solutions.
- Have requisite communication and quantitative skills.
- Work effectively as team members.
- Are committed to lifelong personal and professional development.
- Conduct themselves in an honorable and ethical manner.

**Curricula Options:** Within this context, the Department offers the following curricula options:
- Bachelor of Science in CIS–Information Technology
- Bachelor of Science in CIS–Information Systems
- Bachelor of Science in CIS–Computational Mathematics
- Bachelor of Science in CIS–Bioinformatics
- Bachelor of Science in CIS–Computer Forensics
- Bachelor of Science in CIS–Computer Technology
- Minor in CIS–Network Systems Administration
- Minor in CIS–Information Systems
- Minor in CIS–Website Administration
- Minor in CIS–Information Assurance and Security
- Associate of Science in CIS

The six Bachelor of Science in CIS alternatives prepare the student for graduate school or entry-level positions such as systems programmer, systems analyst, applications programmer, database administrator, bioinformatics specialist, computer forensics analyst, user support specialist, network administrator or website administrator.

Information Technology and Information Systems are distinguished by selected courses that develop the student’s understanding of an organization’s information requirements and procedures for designing and implementing an information system that will facilitate its management. The Information Systems option results in a minor in Business while Information Technology allows the most flexibility in selecting supporting courses.

Computational Mathematics meets the requirements for a double major in Computer Information Science and Mathematics. The student takes CIS and mathematics classes that develop an expertise in applied mathematics and the theoretical foundations of computer science. Such knowledge is required to design and implement computer solutions for a wide range of problems encountered in science and engineering.

Bioinformatics provides for a double major in Computer Information Science and Biology. Bioinformatics is an emerging discipline that is concerned with designing and implementing computational algorithms for managing, processing and analyzing databases of genetic sequences.

Computer Forensics fulfills the requirements for a double major in Computer Information Science and Criminal Justice Administration. Computer Forensics involves techniques for securing computer networks as a precaution against criminal threat. In addition, it includes the identification, extraction, preservation and documentation of computer evidence for the purpose of identifying and prosecuting perpetrators of computer-based crime.

The Computer Technology option not only meets the requirements for a Bachelor of Science in CIS, but also qualifies the student for an Associate of Science degree in Drafting and Design Engineering Technology (DDET).

A minor or associate of science provides the student pursuing some other major with a credential and expertise in computing, an enhancement that is becoming increasingly important in almost every area of science, education, business and the arts. The Network Systems Administration alternative is designed to provide the student with the knowledge base necessary for managing local/wide area computer networks, as well as being able to provide user support and training in the area of personal computer hardware and application software. The Website Administration curriculum focuses on the knowledge and skills needed to build and provide on-going support for effec-
Elective and useful Internet websites. The Information Assurance and Security minor develops the skills needed for the protection of computer networks and institutional data.

In addition to these options, the Computer Information Science Department and the School of Business Administration have developed a curriculum alternative that will qualify the student for a Bachelor of Science in CIS, along with a Bachelor of Business Administration degree with a selected emphasis such as accounting, finance and economics, marketing, management, international business or general business.

The nature of Computer Information Science is such that a student selecting this major should enjoy and have a talent for solving problems. The effectiveness of the CIS curricula is measured by the success of our graduates. Their average starting salaries are among the highest when compared to other majors and placement records indicate that they have enjoyed an excellent placement rate. Many hold positions as middle and upper-level managers for a wide range of organizations and several have earned graduate degrees.

Only courses in which a student has earned a grade of 'C' or above will satisfy departmental requirements for the major or minor in Computer Information Science.

**Computer Information Science**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 110</td>
<td>Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 202</td>
<td>Information Systems I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 210</td>
<td>Programming II</td>
<td>3</td>
</tr>
<tr>
<td>CIS 310</td>
<td>Database Management</td>
<td>3</td>
</tr>
<tr>
<td>CIS 315</td>
<td>Computer Networks</td>
<td>3</td>
</tr>
<tr>
<td>CIS 345</td>
<td>UNIX System Administration</td>
<td>3</td>
</tr>
<tr>
<td>CIS 350</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CIS 375</td>
<td>IT Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CIS 410</td>
<td>Information Systems II (WI)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 425</td>
<td>Database Management II (WI)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 450</td>
<td>Operating Systems (WI)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total CIS Core Requirements</strong></td>
<td></td>
<td><strong>33</strong></td>
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</tbody>
</table>

**Bachelor of Science in CIS – Information Technology Option**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 130</td>
<td>College Algebra or above</td>
<td>3</td>
</tr>
<tr>
<td><strong>General Education Requirements</strong></td>
<td></td>
<td><strong>44</strong></td>
</tr>
<tr>
<td><strong>CIS Core Requirements</strong></td>
<td></td>
<td><strong>33</strong></td>
</tr>
<tr>
<td><strong>Professional Electives</strong></td>
<td></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td>(Choose 2 pairs from the following 3 pairs of courses)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIS 230</td>
<td>Programming with RPG and</td>
<td></td>
</tr>
<tr>
<td>CIS 321</td>
<td>Advanced RPG</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIS 234</td>
<td>Programming with COBOL and</td>
<td></td>
</tr>
<tr>
<td>CIS 334</td>
<td>Advanced COBOL</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIS 308</td>
<td>Website Administration I</td>
<td></td>
</tr>
<tr>
<td>CIS 340</td>
<td>Website Administration II</td>
<td></td>
</tr>
<tr>
<td>CIS Electives**</td>
<td></td>
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<tr>
<td><strong>Supporting Concentration</strong></td>
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<td><strong>15</strong></td>
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<tr>
<td>IET 205</td>
<td>Computer Applications and Cost Analysis</td>
<td>3</td>
</tr>
<tr>
<td>IET 315</td>
<td>Probability and Statistics for Engineers</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 310</td>
<td>Elementary Statistics</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GB 321</td>
<td>Business Statistics</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSY 320</td>
<td>Applied Statistics for the Behavioral and Natural Sciences</td>
<td>3</td>
</tr>
<tr>
<td>IET 320</td>
<td>Applied Statistical Control</td>
<td></td>
</tr>
<tr>
<td>IET 355</td>
<td>Work Measurement Ergonomics</td>
<td></td>
</tr>
<tr>
<td>IET 440</td>
<td>Six Sigma Methodology</td>
<td></td>
</tr>
<tr>
<td>IET 460</td>
<td>Competitive Industrial Practices</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>124</strong></td>
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</tbody>
</table>

**Bachelor of Science in CIS and Minor in General Business – Information Systems Option**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 201</td>
<td>Principles of Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 202</td>
<td>Principles of Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics (Macro)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202</td>
<td>Principles of Economics (Micro)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 350</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>GB 301</td>
<td>Legal Environment of Business I</td>
<td>3</td>
</tr>
<tr>
<td>GB 320</td>
<td>Business Communication (WI)</td>
<td>3</td>
</tr>
<tr>
<td>GB 321</td>
<td>Business Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>IB 310</td>
<td>International Business</td>
<td>3</td>
</tr>
</tbody>
</table>

*Math course in major requirements satisfies three hours of the General Education Requirements.

**May not select CIS 101, 105 or 305.

***Must be approved by the student’s adviser and the CIS department head.
**Bachelor of Science in CIS and Bachelor of Science in Criminal Justice Administration – Computer Forensics Option**

Major Code CI05

<table>
<thead>
<tr>
<th>General Education Requirements (p. 45) 47*</th>
<th>39</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS Core Requirements</td>
<td>33</td>
</tr>
<tr>
<td>Mathematics Core</td>
<td>34</td>
</tr>
<tr>
<td>MATH 150 Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH 250 Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH 260 Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 300 Fundamentals of Math Thought</td>
<td>3</td>
</tr>
<tr>
<td>MATH 340 Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 350 Introduction to Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 351 Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 361 Probability and Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 371 Operations Research (WI)</td>
<td>3</td>
</tr>
<tr>
<td>MATH Elective above 320</td>
<td>3</td>
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<tr>
<td>Supporting Requirements</td>
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<tr>
<td>PHYS 250 General Physics I</td>
<td>2</td>
</tr>
<tr>
<td>PHYS 260 General Physics II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 151 General Chemistry I / Lab</td>
<td>5</td>
</tr>
<tr>
<td>General Electives</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>124</td>
</tr>
</tbody>
</table>

*Math and physics courses in major requirements satisfy eight hours of the General Education Requirements.

| CIS 110 Programming I                               | 3  |
| CIS 202 Information Systems I                       | 3  |
| CIS 210 Programming II                              | 3  |
| CIS 310 Database Management I                        | 3  |
| CIS 315 Computer Networks                            | 3  |
| CIS 345 UNIX System Administration                   | 3  |
| CIS 350 Data Structures                             | 3  |
| CIS 410 Information Systems II (WI)                  | 3  |
| CIS 425 Database Management II (WI)                  | 3  |
| CIS 440 Computer Forensics I                        | 3  |
| CIS 445 Computer Forensics II                       | 3  |
| CIS 450 Operating Systems (WI)                       | 3  |
| CJAD Requirements                                   | 33 |
| LE 100 Introduction to Criminal Justice             | 3  |
| LE 200 Crime Scene Investigation I                   | 3  |
| LE 210 Criminal Procedures                          | 3  |
| LE 232 Ethics Criminal Justice                      | 3  |
| LE 250 Criminal Law                                 | 3  |
| LE 280 Interview & Report Writing (WI)              | 3  |
| CJAD 330 Asset Protection                            | 3  |
| CJAD 340 Crime Scene Investigation II                | 3  |
| CJAD Upper Division Electives                        | 9**|

**Supporting Requirement**

| MATH 130 College Algebra or above                   | 3  |
| General Electives                                   | 8  |
| Total                                               | 124|

*Math course in major requirements satisfies three hours of the General Education Requirement.

**One upper division elective needs to be writing intensive.

**Bachelor of Science in CIS and Associate of Science in Drafting & Design Engineering Technology (DDET) – Computer Technology Option**

Major Code CI06

<table>
<thead>
<tr>
<th>General Education Requirements (p. 45) 47*</th>
<th>44</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS Requirements</td>
<td>36</td>
</tr>
<tr>
<td>MATH 130 College Algebra or above</td>
<td>3</td>
</tr>
<tr>
<td>General Electives</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>124</td>
</tr>
</tbody>
</table>

*Math, physics and biology courses in major requirements satisfy twelve hours of the General Education Requirements.

**Choose from the following courses: BIO 301, BIO 303, BIO 304, BIO 308, BIO 350, BIO 362, BIO 431, BIO 440, BIO 442, BIO 450, BIO 456, BIO 464, BIO 499.

**Bachelor of Science in CIS and Bachelor of Science in Drafting & Design Engineering Technology (DDET) – Computer Technology Option**

Major Code CI06

<table>
<thead>
<tr>
<th>General Education Requirements (p. 45) 47*</th>
<th>44</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS Requirements</td>
<td>36</td>
</tr>
<tr>
<td>MATH 130 College Algebra or above</td>
<td>3</td>
</tr>
<tr>
<td>General Electives</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>124</td>
</tr>
</tbody>
</table>

*Math, physics and biology courses in major requirements satisfy twelve hours of the General Education Requirements.

**Choose from the following courses: BIO 301, BIO 303, BIO 304, BIO 308, BIO 350, BIO 362, BIO 431, BIO 440, BIO 442, BIO 450, BIO 456, BIO 464, BIO 499.
DDET 230  Elementary Surveying ........................................ 3
DDET 260  Engineering Graphics III .............................. 3
MET 100  Introduction to Machine Tools ...................... 3
MET 240  Industrial Materials ....................................... 3
**Supporting Requirements ........................................ 3
MATH 135  Trigonometry ............................................ 3
**General Electives .................................................. 14
Total ................................................................. 124

*May not select CIS 101, 105 or 305.

Minor in CIS – Network Systems Administration
Minor Code CI82

**Semester Hours**
CIS Requirements ................................................... 21
CIS 110  Programming I ............................................ 3
CIS 210  Programming II ........................................... 3
CIS 315  Computer Networks ..................................... 3
CIS 325  Windows LAN Administration ....................... 3
CIS 345  UNIX System Administration ......................... 3
CIS 355  Network Security ......................................... 3
CIS  Electives** .................................................... 3
Total ................................................................. 21

*May not select CIS 101, 105 or 305.

Minor in CIS – Information Systems
Minor Code CI80

**Semester Hours**
CIS Requirements ................................................... 21
CIS 110  Programming I ............................................ 3
CIS 202  Information Systems I ................................... 3
CIS 210  Programming II ........................................... 3
CIS 310  Database Management Systems I ................. 3
CIS 410  Information Systems II (WI) ......................... 3
CIS  Electives** .................................................... 6
Total ................................................................. 21

*May not select CIS 101, 105 or 305.

Minor in CIS – Website Administration
Minor Code CI83

**Semester Hours**
CIS Requirements ................................................... 21
CIS 110  Programming I ............................................ 3
CIS 210  Programming II ........................................... 3
CIS 308  Website Administration I ............................ 3
CIS 310  Database Management Systems I ................. 3
CIS 340  Website Administration II ............................ 3
CIS 345  UNIX System Administration ......................... 3
CIS 370  Programming with Java ................................ 3
Total ................................................................. 21

Minor in CIS – Information Assurance and Security
Minor Code CI84

**Semester Hours**
CIS Requirements ................................................... 27
CIS 110  Programming I ............................................ 3
CIS 210  Programming II ........................................... 3
CIS 315  Computer Networks ..................................... 3
CIS 325  Windows LAN Administration ....................... 3
CIS 345  UNIX System Administration ......................... 3
CIS 355  Enterprise Network Admin & Security ............ 3
CIS 405  Cryptography and .NET Security .................... 3
CIS 440  Computer Forensics I ................................ 3
CIS 445  Computer Forensics II ................................ 3
CIS  Electives** .................................................... 6
Total ................................................................. 27

**Associate of Science in CIS – Information Systems**
Major Code CI07

**Semester Hours**
General Education Requirements (p. 46) 27-28** .......................... 24-25
CIS Requirements ................................................... 27
CIS 110  Programming I ............................................ 3
CIS 202  Information Systems I ................................... 3
CIS 210  Programming II ........................................... 3
CIS 310  Database Management Systems I ................. 3
CIS 410  Information Systems II (WI) ......................... 3
CIS  Electives** .................................................... 12
Supporting Requirements ........................................... 3
MATH 130  College Algebra or above ......................... 3
**General Electives .................................................. 9-10
Total ................................................................. 64-65

*May not select CIS 101, 105 or 305.

For additional information contact:
Dr. Jack Oakes, Department Head of Computer Information Science
Plaster Hall, Room 223E
Phone: 417.625.9383
Fax: 417.659.4450
Email: oakes-j@mssu.edu

Course Descriptions

CIS 0101  (Demand)  3 hrs. cr.
Internet Computing: Getting Connected
Introduces the student to the effective use of the various resources of the Internet. Topics will include hardware requirements, software setup, browsing, searching, publishing, sharing and communicating. The course will consider the social issues of using the Internet in a safe and ethically responsible way. The student will develop and post personal web pages. Prerequisite: A basic background in using Windows.

CIS 0105  (F,S)  3 hrs. cr.
Introduction to Microcomputer Use
Instruction in the fundamental use of microcomputers through packaged software and operating systems. The course provides a broad introduction to hardware, software, computer networks, online social networking and library database searches. Major application areas are discussed, such as word processing, spreadsheets and presentation tools.
CIS 0110  (F,S)  3 hrs. cr.
Programming I
Introduces programming in a personal computer-based environment. The student will learn the fundamentals of PC hardware, operating systems and programming. Special emphasis is placed on proper program style, including modularity and structured design. The language of implementation is Visual C#. Co-requisite: MATH 130 or above.

CIS 0202  (F,S)  3 hrs. cr.
Information Systems I
This course provides an overview of the broad field of information systems and technology. Explores the function of information systems and technology in modern organizations. Explores the options for graduates in the field. Introduces terms and concepts that are used throughout the field. Examines options for professional development in the field. Examines the design of information systems. Emphasizes the student’s ability to clarify problem statements and define objectives with discussion of analysis of information systems using standard methodologies.

CIS 0210  (F,S)  3 hrs. cr.
Programming II
Continued development of the programming and problem solving skills introduced in CIS 110. Structured programming and the object-oriented paradigm are emphasized. Includes an in-depth coverage of strings, arrays, files, classes and namespaces. Introduces Windows application programming. The language of implementation is Visual C#. Prerequisite: CIS 110 with a grade of ‘C’ or above.

CIS 0230  (S)  3 hrs. cr.
Programming with RPG
Introduces the programming language RPG in an OS/400 environment. Includes language syntax and practice in preparing, compiling and executing applications of increasing complexity. Prerequisite: CIS 210 with a grade of ‘C’ or above.

CIS 0234  (F)  3 hrs. cr.
Programming with COBOL
Methods and techniques for solving business related problems using the business oriented language COBOL. Applications may include payroll processing, inventory control, billing systems. Syntax of the language, report production using both sequential and indexed files and structured methodologies are major topics. Prerequisite: CIS 210 with a grade of ‘C’ or above.

CIS 0298  (Demand)  1-3 hrs. cr.
Topics in Computer Information Science
Addresses emerging topics in computer science and management information systems. Each offering will be on a subject not normally included in another course. Prerequisites may be specified in each course syllabus.

CIS 0305  (F,S)  3 hrs. cr.
Microcomputer Applications
Provides an overview of the most common environment and software tools for the serious user of microcomputers. Hardware topics are included to allow the student to compare and select from system configurations according to their application's requirements. An introduction to the basic elements of an operating system and a graphic user interface is followed by intensive practice with the major components of an integrated software suite of applications: word processing, spreadsheets, graphics and presentation software. A variety of data communications topics are included from the use of a local area network through connections to a world-wide system. Prerequisite: CIS 105 (or higher) or MM237 or DDET 115 or consent of the department head.

CIS 0308  (S)  3 hrs. cr.
Website Administration I
Provides an introduction to the administration of a World Wide Website. Includes Internet concepts, design strategies, graphic and multimedia construction, legal and ethical implications, dynamic HTML and client-side programming. Prerequisite: CIS 110 with a grade of ‘C’ or above.

CIS 0310  (F,S)  3 hrs. cr.
Database Management Systems I
Introduces the fundamentals of database management, relational database management systems and programming for GUI. Database topics covered include entities, attributes, relationships, transactions, queries and integrity rules. Server side database concepts are illustrated with MS Access. The client side user interface and business logic is implemented in Visual Basic. Prerequisite: CIS 210 with a grade of ‘C’ or above.

CIS 0315  (F,S)  3 hrs. cr.
Computer Networks
Introduces the hardware and software that are integrated to form a computer network. Topics include an in-depth look at TCP/IP, data communication hardware, public networks such as the Internet and LAN and WAN network standards. Co-requisite: CIS 110 or CIS 305 or DDET 115 or MM 237.

CIS 0321  (F)  3 hrs. cr.
Advanced RPG
Emphasizes online programming of business applications. Major topics include file creation and maintenance, structured methodologies, advanced features of RPG, IBM OS environment, CL programming, Queries, Database, SQL and Internet application connectivity. Prerequisite: CIS 230 with a grade of ‘C’ or above.

CIS 0325  (S)  3 hrs. cr.
Windows LAN Administration
Provides a thorough introduction to the design, installation and management of Microsoft Server local area networks. Network configuration, security, backup and recovery are major topics. User rights and privileges, file and device sharing and Web applications are also covered. Prerequisite: CIS 315 with a grade of ‘C’ or above.

CIS 0334  (S)  3 hrs. cr.
Advanced COBOL
On-line programming and special considerations implicit in real-time business applications are studied. Creation and maintenance of indexed and sequential files and advanced features of COBOL are major topics. Prerequisite: CIS 234 with a grade of ‘C’ or above.

CIS 0340  (F)  3 hrs. cr.
Website Administration II
Continued development of subjects related to the administration of a World Wide Website. Emphasizes server-side programming issues. Particularly concerned with the creation and maintenance of a commercial site. Includes syntax and practice in ASP, CSS, CGI/Perl, VBScript, JavaScript and XML. Prerequisites: CIS 308 and CIS 310, with a grade of ‘C’ or above.

CIS 0345  (F,S)  3 hrs. cr.
UNIX System Administration
Introduces the UNIX operating system. Topics covered include basic UNIX commands, system configuration, the file system, process control, shell programming, the network file system, CGI programming and system security. Prerequisites: CIS 210 and CIS 315 with a grade of ‘C’ or above.
CIS 0350  (F,S)  3 hrs. cr.  
Data Structures  
Provides for the continued development of the student’s knowledge of data structures and object-oriented programming. Includes an in-depth coverage of linked lists, stacks, queues, trees and graphs. Special emphasis is placed on the coverage of algorithms that are designed to efficiently manipulate these structures and techniques for selecting the most appropriate data structures for a given application. The language of implementation is Visual C#. Prerequisite: CIS 310 with a grade of ‘C’ or above.

CIS 0355  (S)  3 hrs. cr.  
Enterprise Network Administration and Security  
Covers essential techniques and best practices for securing an enterprise inter-network. Major topics include routing and inter-network design, firewalls, proxy servers, authentication and encryption, virtual private networks, security policy design, disaster recovery planning, hardware troubleshooting and performance analysis. Prerequisites: CIS 315 and CIS 345 with a grade of ‘C’ or above. Co-requisite: CIS 325.

CIS 0365  (S)  3 hrs. cr.  
Programming Computer Games  
This course will study basic concepts and techniques for developing computer games. It will cover the basic game programming techniques using XNA Game Studio and various aspects of related knowledge including game architecture, computer graphics, user interaction, audio, networks and artificial intelligence. The implementation is through Visual C# and XNA Game Studio. Prerequisite: CIS 210 with a grade of ‘C’ or above.

CIS 0370  (F)  3 hrs. cr.  
Programming with Java  
Introduces the student to the Java programming platform. Applications and problems considered include in-depth object oriented design strategies, graphical user interfaces, exception handling, Internet programming and multimedia. Prerequisite: CIS 210 with a grade of ‘C’ or above.

CIS 0375  (F)  3 hrs. cr.  
Information Technology Project Management  
Emphasizes managerial and analytical skills more than technological skills. The course will provide an introduction to Project Management Body of Knowledge (PMBOK®) and will use industry standard project management software to model skills in project definition and planning, and also the response to unexpected changes in environment, resources, or other features. Finally, it will include a section on the human side of management, in particular management of high-tech employees. Prerequisites: CIS 202 - Information Systems I and Junior or above standing or permission of the instructor.

CIS 0401  (F,S)  1-3 hrs. cr.  
Internship in Computer Information Science  
A limited number of computer information science students may serve an internship of 15 to 20 hours per week for up to 16 weeks. Credit hours will be arranged through the coordinator of the internship program. The intern will work for a local-cooperating firm in a production information technology environment gaining valuable experience in programming and/or systems analysis and design. The on-site work will be supervised by a professional employee of the firm and overseen by an MSSU faculty member. Prerequisites: Upper division standing, department head approval and an overall GPA of 3.0. This course may be repeated at most one time for additional credit.

CIS 0405  (F)  3 hrs. cr.  
Cryptography & .NET Security  
This course provides an introduction to implementing the security and cryptography features found in the .NET platform. Students will gain a knowledge of basic cryptography theory and learn to use symmetric algorithms, asymmetric algorithms and digital signatures. Prerequisite: CIS 210 with a grade of ‘C’ or above or permission of the instructor.

CIS 0410  (F)  3 hrs. cr.  
Information Systems II  
Continued development of the ability to analyze and design computer-based information systems. Includes coverage of analysis and design methodologies, computer-aided software engineering tools and project management techniques. Topics are illustrated with in-depth case studies. Emphasizes teamwork. Prerequisites: CIS 202 and 310 with a grade of ‘C’ or above.

CIS 0425  (S)  3 hrs. cr.  
Database Management Systems II  
Includes a survey of database management theories with experience in the application of database technology. An emphasis will be placed on the relational model. Functions of database management systems, data modeling and database systems design and implementation in a client/server environment are stressed through case studies. Prerequisites: CIS 310 and CIS 410, with a grade of ‘C’ or above.

CIS 0430  (Demand)  3 hrs. cr.  
Introduction to Artificial Intelligence  
Introduces the process of developing intelligent computer software. Topics covered include knowledge abstraction and representation, heuristic search techniques, game playing, expert systems and meta-programming. Prerequisite: CIS 350 with a grade of ‘C’ or above.

CIS 0435  (Demand)  3 hrs. cr.  
Data Mining  
Introduces data warehousing and data mining. The former being a standard approach to archiving summary data for analysis; the latter being techniques of analysis intended to discover subtle and unexpected relationships in the historical data, for use in design, marketing, research and engineering. Topics include concepts, principles and architectures and the design and implementation of Data Mining applications. Prerequisites: CIS 310 and (GB 321 or MATH 310 or MATH 361 or BIO 290) with a grade of ‘C’ or above.

CIS 0440  (S)  3 hrs. cr.  
Computer Forensics I  
Introduces the basics of computer forensics. Topics covered include backups and data recovery, hard drive imaging and forensic analysis of recovered data, data hiding and encryption techniques, reconstruction of past events, techniques used to compromise and safeguard computers, surveillance tools, analysis of data and collection and preservation of electronic evidence. Students will be introduced to forensic techniques and available electronic tools for forensic analysis. A basic knowledge of networks and UNIX/Linux, as well as a thorough knowledge of Windows is assumed. Prerequisites: CIS 315 and CIS 345 with a grade of ‘C’ or above.

CIS 0445  (F)  3 hrs. cr.  
Computer Forensics II  
A continuation of Computer Forensics I with an emphasis on the use of the professional forensic software tools like Access Data’s Forensic Tool Kit and Guidance Software’s EnCase. Prerequisite: CIS 440 with a grade of ‘C’ or above.
CIS 0450  (F)  3 hrs. cr.
Operating Systems  (Writing Intensive)
Fundamental concepts of operating system design. Emphasis is placed on identifying the problems an operating system must solve and considering the range of alternative solutions that may be implemented. Topics include process management, memory management, processor management, auxiliary storage management and security. The Linux operating system is highlighted. Prerequisite: CIS 350 with a grade of ‘C’ or above. Corequisite: CIS 345.

CIS 0498  (Demand)  1-3 hrs. cr.
Advanced Topics in Computer Information Science
Addresses emerging topics in computer science and management information systems. Each offering will be on a subject not normally included in another course. Prerequisite: May be specified in each course syllabus.

CIS 0499  (Demand)  1-3 hrs. cr.
Independent Study
The adviser, with approval of the department head, structures an independent study course. Prerequisite: Upper division standing with an overall GPA of 3.0 or above. The adviser, the department head and the dean of the school must approve registration in the course.

Faculty  Spencer – Interim Director, Adams, Scott, Spurlin, Wilson

Mission
The mission of the Criminal Justice Administration Department is to encourage lifelong learning and scholarship, to produce qualified and knowledgeable graduates and to foster development of ethical professionals prepared for leadership positions in the criminal justice and justice fields. The department is devoted to emphasizing quality teaching and learning, to providing an international perspective and to promoting the value of community service. The Department seeks to further the study and understanding of criminal justice through our teaching, service to the University and service to the community.

In addition to the extremely versatile Bachelor of Science degree in Criminal Justice Administration and the Associate of Science in Law Enforcement, the Criminal Justice Department offers the Bachelor of Science in Juvenile Justice. Another recent addition is the dual degree in Computer Forensics, offered with the Computer Information Science Department.

These exciting degree programs are complemented by four minors, including criminal justice administration, juvenile justice, corrections and the very popular CSI-Crime Scene Investigation. The many new combinations offer a myriad of opportunities for students who are seeking careers in the justice system and justice related fields.

The Criminal Justice Administration degree offers academic training coupled with “real world” practical training for students pursuing careers as criminal justice professionals. The Criminal Justice program provides a varied and flexible curriculum, small classes, faculty who provide individual academic attention, international educational opportunities and a unique learning environment.

The Criminal Justice Administration degree program offers a varied curriculum to meet the needs of a diverse student body. The program prepares students for a wide variety of careers as criminal justice professionals as well as graduate programs in law, criminal justice and other related fields. The Criminal Justice program prepares students for careers in traditional fields such as law enforcement, juvenile justice, corrections, probation and parole and private or industrial security. The program also prepares students for investigative positions with federal agencies, state and local agencies, insurance companies and other private enterprises. In addition, a criminal justice administration degree will prepare students for the many new opportunities in the areas of safety and security.

The Criminal Justice Department offers a flexible curriculum to serve the needs of the student body. In addition to day and evening courses, students can obtain the Criminal Justice Administration degree and the Associate of Science degree over the Internet. The many hybrid courses combine the benefits of the classroom experience with the flexibility of the Internet courses by meeting on campus weekly, monthly or at other intervals, but conducting much of the course via the Internet. The Department offers criminal justice professionals who have experience in the field college credit for work experience through the portfolio process. The Department also recommends that all students participate in the internship program, where students receive college credit for working side by side with practicing criminal justice professionals.

Our faculty members are attentive to student needs and strive to prepare students for challenging criminal justice careers. They have 100 years of combined practical experience in criminal justice fields, including experience as law enforcement officers, juvenile officers, assistant prosecutors, legal advisers, criminal investigators and child abuse investigators. In addition, our faculty members have experience in private law practice, security administration, mental health coordination and non-profit agency administration.

The Criminal Justice Department emphasizes the international mission and provides students with opportunities to study and travel abroad to view firsthand other criminal justice systems around the globe. Our faculty and students have explored the justice systems in England, France, Australia, New Zealand, Morocco, Italy, Israel, Spain and Costa Rica. In the years since the international mission was implemented, approximately 350 criminal justice students have studied abroad.

The state-of-the-art Mills Anderson Public Safety Center is the busy home of the Criminal Justice Administration Department at Missouri Southern State University. The Department boasts a high-tech mobile Crime Scene Investigation Unit. The facility features a modern indoor “live-fire” firearms range and two firearms training simulation systems. The auditorium provides a forum for lectures and meetings as well as for advanced training seminars for practicing criminal justice professionals. These seminars are taught by nationally recognized criminal justice professionals, allowing students to learn from the experts and network with potential employers.

The Criminal Justice Department at Missouri Southern State University also operates the 600-hour Basic Law Enforcement Training Academy. (See Law Enforcement.)

The Criminal Justice Administration degree will allow students to take advantage of the many traditional career opportunities as well as the multitude of new opportunities in criminal justice, especially in the areas of homeland security and global security.