1305. Business Computer Applications. 3(3-0)
Students will study computer terminology, hardware, and software, security and privacy related to the business environment. Introduce and develop foundational skills in applying essential and emerging business productivity information technology tools. The focus of this course is on business productivity software applications and professional behavior in computing, including word processing (as needed), spreadsheets, databases, presentation graphics, and business-oriented utilization of the internet. Students will study the use of web-based technologies to conduct ethical business research.

2301. Microcomputer Assembly Language. 3(3-0)
Theory, concepts and terminology required for competency in microcomputer assembly language programming including machine instructions; basic data types; addressing modes; arithmetic, logical and character string operations; interrupts and I/O interfaces. Prerequisites: CSCI 1337, CSCI 1137.

2302. Business Applications Using C++. 3(3-0)
Concepts and applications of the C++ programming language for business and industry. Prerequisites: CSCI 1336 and CSCI 1136.

2305. Java Programming. 3(3-0)
This course discusses concepts and applications of the Java programming languages for business and industry. Topics include the fundamentals of Java programming, control structures, methods, arrays, object-oriented programming, concepts, and other advanced topics. Prerequisites: CSCI 1336 and CSCI 1136.

2306. Computer Networks. 3(3-0)
This course covers subjects related to computer networks including TCP/IC and OSI models, network applications, distributed systems and an introduction to network security. The course focuses on concepts, principles and technologies that enable the integration of information and telecommunications systems for support of internal and external business activities. Prerequisites: MATH 1314.

2354. COBOL Programming I. 3(3-0)
Fundamentals and techniques of programming in the COBOL language including program design and structure, flow charting and documentation. Prerequisites: CSCI 1336 and CSCI 1136.

3101. Jaguar Tracks III: Computer Information Systems. 1(1-0)
In this course students will identify their skills, strengths, interests, and values as it relates to future career goals within their discipline. Students will seek opportunities to gain transferable and direct skills to apply to future career goals. Through mock interviews, writing a professional and concise resume and cover letter, and researching professional organizations, students will be prepared to become active members of the community within their discipline. Prerequisites: UNIV 2101 or 60 or more earned academic semester credit hours.

3304. Database Systems. 3(3-0)
This course examines file and database organization techniques including network, hierarchical, relational, object and NoSQL data models, commercially available and open source database systems, database design and implementation, query language, transaction processing, database administration and database security. Prerequisites: CSCI 1336, CSCI 1136 and CISA 3351.

3309. Scripting Languages. 3(3-0)
This course introduces students to common scripting languages used in computing. It examines the overall design of scripting languages as well as the specific syntax of common scripting languages. Students will develop projects in each of the languages examined and will determine the best application environment for each of the languages examined. Prerequisites: CSCI 1337 and CSCI 1137.

3311. Project Management. 3(3-0)
This course examines the concepts, principles, and applications of project management in the business environment, including the study of project management procedures, project management tools, organizational structure, management of project team members, and the planning, organizing, and control activities necessary for good projects. There will be an emphasis of information technology (IT) in the course lectures; however, projects do not have to include an IT component. Prerequisite: Completed 30 hours.

3321. Information Security. 3(3-0)
This course examines the concepts, principles, and applications of computer security in the business environment including privacy, information security, and critical infrastructure and explores the knowledge and skills needed to ensure security of information and information systems within organizations. Prerequisite: CISA 2306.

3325. Network Security. 3(3-0)
The course explores mechanisms for protecting networks against attacks with an emphasis placed on network security applications for the Internet and corporate networks. The course also investigates various networking security standards and explores methods for enforcing and enhancing those standards. Prerequisites: CISA 2306 or CSCI 4406 and CISA 3321 or CSCI 3321.

3328. Internship in Computer Information Systems. 3(3-0)
An off-campus learning experience allowing the acquisition and application of information technology skills in an actual work setting. Prerequisites: CSCI 1336 and CSCI 1136.

3351. Database Design and SQL. 3(3-0)
Basic database design and introduction to structured query language (SQL). Includes instruction on creating user interface forms for a database. Prerequisites: CSCI 1336 and CSCI 1136.

3352. Mobile Application Development. 3(3-0)
This course introduces the student to the concepts, principles, and development in the major platforms including iOS, Android, and Windows. Its objective is to provide students with the tools and knowledge necessary to create applications that can run on mobile and/or smart devices. Differences between mobile and desktop computing will be investigated, sample mobile apps will be dissected, and tool suites for the development of mobile software will be covered. Prerequisites: CSCI 1336 and CSCI 1136.

3355. COBOL Programming II. 3(3-0)
Refinement and expansion of programming competencies in the COBOL language including structured programming, sorting, merging, file systems and access methods. Prerequisites: CSCI 1336, CSCI 1136 and CISA 2354.

3356. Systems Analysis and Design. 3(3-0)
Analysis and design techniques required for implementing medium to large-scale computer information systems. Development of requirements for personnel, software and equipment for typical applications.

3358. Management Information Systems. 3(3-0)
A comprehensive study of the use of information technology as an organizational resource, including the implementation of disciplined processes and management development to effectively exploit the power of modern information technology. This course is specifically designed for non-computer information systems majors. **Prerequisites:** CISA 1305 or CSCI 1336.

**3367. Advanced Microcomputer Applications and Systems. 3(3-0)**
Study of advanced microcomputer hardware and software technologies having application in business administration. **Prerequisites:** CSCI 1336.

**4101. Jaguar Tracks IV: Computer Information Systems. 1(1-0)**
In this course, students will identify the various ethical issues and values as it relates to future careers within their discipline. Students will study various cases and identify the ethical issues, and seek mechanisms for addressing and resolving the issues. Through mock debates, studying, writing and presenting professional ethical analysis studies, students will be prepared to understand and address the ethical issues within their discipline. **Prerequisites:** CISA 3101 or 90 or more earned academic semester credit hours.

**4303. Client/Server Application Development. 3(3-0)**
Client/Server application development practices and tools. Emphasis on developing distributed database applications that support the information processing needs of business. Topics include: object-oriented program design, programming with object-oriented development platforms and the use of embedded Structured Query Language for database transaction processing. **Prerequisites:** CSCI 1336 and CSCI 1136.

**4312. Risk Management. 3(3-0)**
This course is an overview of the basic components of risk as they pertain to technical projects. Topics include risk identification, risk impact analysis, risk response planning, mitigating risk, and risk management techniques. **Prerequisites:** CISA 3311 and Senior standing.

**4313. Programming for Data Analytics. 3(3-0)**
This course introduces students to a common scripting language used in data analytics. Students will explore the latest tools techniques to help tackle the world of data acquisition and analysis. Students will review topics like scientific computing, data manipulation, machine learning, Textual Data Analysis, and Data Visualization. **Prerequisite:** CSCI 1337, CSCI 1137.

**4322. Information Policy Assurance. 3(3-0)**
This course explores information security policies. The course includes both sociological and psychological issues in policy implementation in general, a dialogue on information security specific policies, the structure of a policy, and the lifecycle of policy from creation to enactment. The course also exposes the student to issue specific policies in different domains of security to assist the students learn in context of real life situations. **Prerequisites:** CISA 3321.

**4323. Computer Forensics. 3(3-0)**
This course is an overview of the methods and tools utilized for collecting and preserving electronic digital evidence for the computer forensic process. Topics include the forensic examination, analysis, and report writing; and preparing for courtroom testimony about the forensic results. **Prerequisites:** CISA 3321.

**4324. Security Risk Analysis. 3(3-0)**
This course examines concepts of risk analysis, risks in engineered systems, environmental risks, security risks; methods of risk analysis, fault trees and event trees. Students will study risk assessment using penetration testing methods. **Prerequisites:** CISA 3321.

### 4326. Security and Operation Project. 3(3-0)
This course combines the theoretical foundation of system security with hands-on practical application on real systems. Students will practice roles of network and system administrators and system architects from both security and business operations perspectives. Meets College of Business Experiential Learning Requirements. **Prerequisites:** CISA 4324 or CISA 3325.

### 4331. Enterprise Resource Planning Systems. 3(3-0)
This course examines the concepts, principles, and applications of Enterprise Resource Planning (ERP) systems. This course helps students understand the key processes of business organizations. It also improves the student’s understanding of how key business processes are managed and integrated in enterprise level software used by large organizations. **Prerequisites:** Senior Standing

### 4332. Business Intelligence/Data Mining. 3(3-0)
This course provides an integrative foundation in the field of business intelligence and data mining. It focuses on business data warehousing, multidimensional data modeling, online analytic processing, business reporting and planning, and data mining. **Prerequisites:** CISA 3351.

### 4333. Supply Chain Integration. 3(3-0)
Supply chain management is the successful cross-functional integration of key business processes from the original suppliers of products, services, and information through the firm to its customers and stakeholders with an emphasis on value-added benefits. This course emphasizes the use of information technology in the supply chain management process. **Prerequisites:** Senior standing.

### 4334. Business Process Integration. 3(3-0)
This course provides a foundation for information system professionals who are often called upon to configure and integrate business processes. Information system professionals are often called upon to install and configure computer information systems including packages such as SAP. They must also demonstrate an understanding of how data is shared throughout the organization. This course helps students understand the key processes of business organizations. It also improves the student’s understanding of how key business processes are managed and integrated in enterprise level software used by large organizations. **Prerequisites:** CISA 4331.

### 4335. ABAP SAP Programming. 3(3-0)
This course will introduce the student to the concepts, principles, and development in programming in ABAP. Its objective is to provide students with the tools and knowledge necessary to create applications that can run on mobile and/or smart devices. **Prerequisites:** CSCI 1336 and CSCI 1136.

### 4358. Senior Project and Seminar. 3(3-0)
This course will introduce the student to the concepts, principles, and applications of information systems technology in the business environment, including a study of organizational structure, management and personnel of a data center, and the planning, organizing, and control activities necessary for good management of the information systems resource. Students will also complete an information system development project. Meets College of Business Experiential Learning Requirements. **Prerequisites:** CISA 3351, CISA 3356.
4359. Advanced Problems in Computer Information Systems. 3(3-0)
Research in selected fields of computer information systems. Prerequisite: consent of instructor. May be repeated once for additional credit. Prerequisites: CSCI 1336, CSCI 1136 and Senior standing.

CISA Graduate Courses

5309. Computer Tech Applications. 3(3-0)
Study of databases, enterprise systems, decision support systems, business intelligence, and IS security from a managerial standpoint. The course provides insights on systems used for collecting data to assist with operational and strategic decision making.

5310. Organization and Management of Business Databases. 3(3-0)
A study of important issues in the design and implementation of databases for business enterprises with emphasis on the relational model. Study of non-relational database models such as object-oriented, hierarchical and network. Hands-on experience will be provided using a current rational database product. Prerequisite: CISA 5309 or permission of the instructor.

5311. Project Management. 3(3-0)
This course examines the concepts, principles, and applications of project management in the business environment, including the study of project management procedures, project management tools, organizational structure, management of project team members, and the planning, organizing, and control activities necessary for good project. Cross-listed with MGMT 5311.

5312. Risk Management. 3(3-0)
This course is an overview of the basic components of risk as they pertain to technical projects. Topics include risk identification, risk impact analysis, risk response planning, mitigating risk, and risk management techniques. Cross-listed with MGMT 5312. Prerequisite: CISA 5311 or MGMT 5311.

5320. Decision Support Systems. 3(3-0)
A study of computer-based systems that support unstructured and semi-structured decision-making by individuals or groups. These systems include: decision support systems, group decision support systems, executive information systems and expert systems. Prerequisite: CISA 5309 or permission of the instructor.

5321. Information Security. 3(3-0)
This course is an overview of the basic components of risk as they pertain to technical projects. Topics include risk identification, risk impact analysis, risk response planning, mitigating risk, and risk management techniques. Prerequisite CISA 5330 or undergraduate equivalent in telecommunications or computer networks.

5322. Information Policy Assurance. 3(3-0)
This course explores information security policies. The course includes both sociological and psychological issues in policy implementation in general, a dialogue on information security specific policies, the structure of a policy, and the lifecycle of policy from creation to enactment. The course also exposes the student to issue specific policies in different domains of security to assist the students learn in context of real life situations. Prerequisite: CISA 5330 and CISA 5321.

5323. Computer Forensics. 3(3-0)
This course is an overview of the methods and tools utilized for collecting and preserving electronic digital evidence for the computer forensic process. Topics include the forensic examination, analysis, and
report writing; and preparing for courtroom testimony about the forensic results. *Prerequisite:* CISA 4321 or CISA 5321.

**5324. Risk Analysis. 3(3-0)**
This course examines concepts of risk analysis, risks in engineered systems, environmental risks, security risks; methods of risk analysis, fault trees and event trees; quantification of probabilities, use of data, models, and expert judgements; risks and decisions, interlinking risk analysis with risk management; applications to homeland security decisions. *Prerequisite:* CISA 4306 or CISA 5330.

**5325. Network Security. 3(3-0)**
The course explores mechanisms for protecting networks against attacks with an emphasis placed on network security applications for the Internet and corporate networks. The course also investigates various networking security standards and explores methods for enforcing and enhancing those standards. *Prerequisite:* CISA 4306 or CISA 5330.

**5326. Security and Operations Practicum. 3(3-0)**
This course combines the theoretical foundation of system security with hands-on practical application on real systems. Students will practice roles of network and system administrators and system architects from both security and business operations perspectives. In addition, students will design and build a small network with DMZ and internal subnet systems. *Prerequisites:* CISA 5330 or undergraduate equivalent in telecommunications or computer networks, CISA 5321, and CISA 5324 or CISA 5325.

**5330. Telecommunications. 3(3-0)**
A study of concepts, principles and technologies allowing the integration of information and telecommunications systems to support the internal and external activities of business enterprises.

**5331. Enterprise Resource Planning Systems. 3(3-0)**
This course examines the concepts, principles, and applications of Enterprise Resource Planning (ERP) systems. This course helps students understand the key processes of business organizations. It also improves the student’s understanding of how key business processes are managed and integrated in enterprise level software used by large organizations. Cross-listed with ACCT 5307. *Prerequisite:* CISA 5309.

**5332. Business Intelligence/Data Mining. 3(3-0)**
This course provides an integrative foundation in the field of business intelligence and data mining. It focuses business data warehousing multidimensional data modeling, online analytic processing, business reporting and planning, data mining, along with other advanced topics relevant to the field of business intelligence. *Prerequisite:* CISA 5309.

**5333. Supply Chain Integration. 3(3-0)**
Supply chain management is the successful cross-functional integration of key business processes from the original suppliers of products, services, and information through the firm to its customers and stakeholders with an emphasis on value-added benefits. This course emphasizes the use of information technology in the supply chain management process. Cross-listed with MGMT 5333.

**5334. Business Process Integration. 3(3-0)**
The course provides a foundation for information system professionals who are often called upon to configure and integrate business processes. Information system professionals are often called upon to install and configure computer information systems including packages such as SAP. They must also demonstrate an understanding of how data is shared throughout the organization. This course helps students understand the key processes of business organizations. It also improves the student’s
understanding of how key business processes are managed and integrated in enterprise level software used by large organizations. Prerequisite: CISA 5309 and CISA 5331.

5340. Systems Analysis, Design and Implementation. 3(3-0)
A study of systems analysis, design and implementation techniques that can be used to analyze and improve or create organizational information and communications systems.

5359. Special Problems in Computer Information Systems. 3(3-0)
Study, research or internship in CISA. May be repeated once for credit.