

# COMPUTER INFORMATION SYSTEMS (CIS)

## CIS 24053 INTRODUCTION TO COMPUTER APPLICATIONS 3 Credit Hours

(Equivalent to IT 11000) Develop competency in the operation of contemporary software and hardware applications. To develop an appreciation for the contribution of computers, software and the Internet to society.

**Prerequisite:** None.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**Attributes:** TAG Business

## CIS 24065 WEB PROGRAMMING 3 Credit Hours

Principles of visual design as applied to Web site interface development. The course exposes students to the basics of programming and relational database and how to develop a Web-based database driven interactive information system.

**Prerequisite:** CIS 24053.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture, 2 lab

**Grade Mode:** Standard Letter

## CIS 24093 VARIABLE TITLE WORKSHOP IN MANAGEMENT AND INFORMATION SYSTEMS 1-6 Credit Hours

(Repeatable for credit) Special workshop in management and information systems. Credits depend on scope of project.

**Prerequisite:** Special approval.

**Schedule Type:** Workshop

**Contact Hours:** 1-6 other

**Grade Mode:** Satisfactory/Unsatisfactory

## CIS 24165 CLOUD SYSTEMS COMPUTING 3 Credit Hours

This course explores the history, current state, and projected future of cloud approach to providing computing resources. Almost all new startups today use "the cloud" because it allows fast time to market, flexibility, and the ability to "test" new ideas and product offerings very quickly. Kent State even uses this approach for things like student email and Blackboard. Most existing companies realize the "cloud" is in their future; the goal of the course is to expose students to the knowledge they need to be able to help their future employers with cloud migration.

**Prerequisite:** Minimum C+ grade in CIS 24053.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## CIS 24167 CLOUD INFRASTRUCTURE AND APPLICATIONS 3 Credit Hours

Information systems is critical to the efficient operation of any organization today, such as in hiring employees, performing background checks, ordering/creating products, transacting businesses, and providing follow-up services, among others. These can be large "integrated systems" or ERPs or loose collection of "Apps." This class explores the various alternatives available today and the likely future of new products in the future. Different viewpoints and debates will be explored in the class with opportunities for students to discuss and present their thoughts.

**Prerequisite:** Minimum C+ grade in CIS 24053; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## CIS 34032 DATA AND FILE TECHNOLOGY 3 Credit Hours

An introduction to file architecture and data base management systems. The application of these technologies is detailed.

**Prerequisite:** MIS 34068.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## CIS 34034 BUSINESS MODELING AND AGILE DESIGN 3 Credit Hours

Introduction to methods, tools, and techniques used to analyze and develop information systems, with emphasis on application of methods and concepts to real-world problems. The course is the cornerstone upon which all subsequent IS activities are based. Skills developed in the course would have immediate applicability for IS students and help non-IS students gain knowledge they need to appreciate the role of IS in their organization, so they can better understand how to manage and support IS-related projects.

**Prerequisite:** Minimum 2.500 overall GPA.

**Pre/corequisite:** CIS 24167.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## CIS 34036 ENTERPRISE SYSTEMS AND BUSINESS PROCESSES 3 Credit Hours

Overview of the basics of business processes and Enterprise Resource Planning systems solutions in the cloud. The course prepares students for business process and other cloud related courses, with hands-on experience with a professional ERP system such as SAP. Topics covered include data navigation, client server systems, virtualization, database, security, accounting and procurement processes, and ERP simulation games.

**Prerequisite:** CIS 34034; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## CIS 34045 SMALL SYSTEMS TECHNOLOGY 3 Credit Hours

An examination of the role of small computer systems within an organization's information systems environment.

**Prerequisite:** CIS 34068.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 34068 SYSTEMS ANALYSIS AND DESIGN 3 Credit Hours**

This is an introductory course in Systems Analysis and Design. Students will be presented with the concepts, techniques, and methodologies that are required for the successful development of information systems. Application of methods and concepts to real-world problems will be emphasized.

**Prerequisite:** Minimum C grade in CIS 24053 or IT 11000; and minimum C grade in the following courses CIS 24065, ENG 21011, COMM 15000 and MATH 11010; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 34070 PROGRAMMING THEORY AND APPLICATIONS 3 Credit Hours**

Programming in a strongly-typed language environment with an emphasis on problem-solving.

**Prerequisite:** Minimum C grade in CIS 24053 and CIS 24065; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 34080 COMPUTER PROGRAMMING FOR BUSINESS I 3 Credit Hours**

Introduces a programming language currently used in business and industry for data processing, decision making and other information systems applications.

**Prerequisite:** CIS 34070.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 34167 CREATING INTUITIVE SYSTEMS 3 Credit Hours**

The process of creating products that are intuitive, simple, useful and easy-to-use is difficult and always evolving. However, organizations such as Apple Incorporated and Google that can adopt this approach to product or service development are often on top of their industry. This course will explore this process, its value and how to make it work to help a business prosper and thrive in today's highly competitive market and short product lifecycles.

**Prerequisite:** Minimum C+ grade in CIS 24053; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 34170 TECHNOLOGY BOOTCAMP 3 Credit Hours**

The course covers important current topics and innovations in information system technologies. Students are taught to develop skills that help them to identify and investigate emerging important technologies and learn how to research and master them. Topics covered each semester will be different from those covered in past semesters, with examples of what were covered in the past.

**Prerequisite:** Minimum C+ grade in CIS 24053; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44007 PROJECT MANAGEMENT AND TEAM DYNAMICS 3 Credit Hours**

Overview and hands-on experience of the principles, tools, and techniques of project management with emphasis on practical aspects of initiating, planning, executing, costing and closing out information systems related projects. The course begins with the Myers-Briggs personality inventory which will help in later class team exercises and uses the PMBOK. Students will work in teams to perform exercises that will help them learn team dynamics and leadership.

**Prerequisite:** Minimum C+ grade in CIS 24053; and minimum 2.500 overall 2.500 GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44033 ADVANCED COMPUTER PROGRAMMING FOR BUSINESS 3 Credit Hours**

Covers Java programming language, including applications and applets, with emphasis on object-oriented programming. The course also emphasizes problem solving, developing systems, structured programming and programming style conventions.

**Prerequisite:** Minimum C grade in the following courses CIS 24053 and CIS 24065 and CIS 34070; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44040 PROGRAMMING FOR THE CLOUD 3 Credit Hours**

Cloud development programming course that is based on the client-server architecture. The course begins with a review of HTML and CSS used to build the user interface. Document Object Model (DOM) is investigated as the basis for all web interfaces. Interface stylistic formatting is achieved by use of CSS, and JavaScript for interface in the web browser, while server-based language such as PHP and Python are used to process user actions. The course also introduces jQuery for interface animation.

**Prerequisite:** Minimum 2.500 overall GPA.

**Pre/corequisite:** CIS 24167.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44042 NETWORK THEORY AND APPLICATIONS 3 Credit Hours**

Presentation of current and emerging network technologies and services in business applications and performance issues. Topics include transmission media, modulation and signaling schemes, switching and multiplexing techniques, local and wide area network protocols and standards, and internetworking devices.

**Prerequisite:** Minimum C grade in CIS 24053 and CIS 24065; and minimum overall 2.500 GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44043 DATA MANAGEMENT AND BUSINESS INTELLIGENCE I 3 Credit Hours**

The processing, storage, retrieval, manipulation, and management of often massive and complex business data is an essential part of most information systems. This course will expose students to key database concepts such data integrity, conceptual and logical data modeling, and structured query language (SQL). Some of the SQL skills include data definition language (DDL), data manipulation language (DML), transaction control concepts, joins, grouping, and subqueries. The course will also introduce database management concepts related to managing users and physical storage space. Current and future database trends and issues will also be discussed including security, introduction to emerging topics in big data, data acquisition, analytics and visualization.

**Prerequisite:** CIS 44040; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44044 SYSTEMS ANALYSIS II 3 Credit Hours**

Physical system implementation: mapping logical data models and process models to physical data bases and system design; system coding, testing, installation, conversion, training and automated tools.

**Prerequisite:** CIS 34068.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44045 INFORMATION SYSTEMS MANAGEMENT 3 Credit Hours**

Management of information systems resources in organizations of all types and sizes; IT best practices; the effective and efficient use of IS in support of the organization's mission and to achieve competitive advantage in today's global economy; the impact of IT on enterprises, users, customers, society, and the environment.

**Prerequisite:** Minimum C grade in the following courses CIS 24053 and CIS 24065; minimum 2.500 overall GPA; and senior standing.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44048 CLOUD SYSTEMS INTEGRATION (ELR) (WIC) 3 Credit Hours**

As a writing intensive course the primary objective is that students or team of students write and rewrite their reports to consistently produce high quality, clear, and to the point written and verbal communication with feedback from their instructor. Students participate as a member of a project development team that builds cloud-based information system using a cloud platform for a real client. To be completed successfully, the projects often require knowledge, content, and skills from all prior IS courses.

**Prerequisite:** Minimum 2.500 overall GPA.

**Pre/corequisite:** CIS 44043.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**Attributes:** Experiential Learning Requirement, Writing Intensive Course

**CIS 44049 NETWORK MANAGEMENT AND CYBERSECURITY 3 Credit Hours**

The course explores technologies and business issues related to computer networking and security, with emphasis on the protocols in modern business networking such as Ethernet and TCP-IP. Topics also include cybersecurity threats and defenses, privacy, cloud and parallel computing, and map-reduce.

**Prerequisite:** Minimum C grade in the following courses CIS 24053 and CIS 24065; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44093 VARIABLE TITLE WORKSHOP IN MANAGEMENT AND INFORMATION SYSTEMS 1-6 Credit Hours**

Repeatable for credit) Variable title workshop courses offered under management and information sciences.

**Prerequisite:** Minimum 2.500 overall GPA.

**Schedule Type:** Workshop

**Contact Hours:** 1-6 other

**Grade Mode:** Satisfactory/Unsatisfactory

**CIS 44095 SPECIAL TOPICS IN COMPUTER INFORMATION SYSTEMS 3 Credit Hours**

(Repeatable for credit) Offered on a semester basis with different CIS topics and different faculty involved each time the course is offered.

**Prerequisite:** Minimum 2.500 overall GPA; and junior standing.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44140 APPLICATION DESIGN AND DEVELOPMENT 3 Credit Hours**

The focus of this course is about making apps for mobile and other devices. Techniques that permit apps to be developed and then used as native on Android and iOS platforms are covered, with emphasis on interface design, client programming, server programming, database use for storage and retrieval, and security. The Model-View-Controller (MVC) architecture is used as the basis for app development, including interface, programming and data management.

**Prerequisite:** CIS 44040; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44243 DATA MANAGEMENT AND BUSINESS INTELLIGENCE II 3 Credit Hours**

The course explores advanced topics in the acquisition, management and use of data. The knowledge and skills presented in Data Management and Business Intelligence I, big data, data acquisition, analytics and visualization are extended with an emphasis on machine learning, artificial intelligence, and NoSQL. There is also an introduction to blockchain concept using software platforms.

**Prerequisite:** CIS 44043; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**CIS 44292 BUSINESS EXPERIENCE AND INTERNSHIP (ELR) 3 Credit Hours**

(Repeatable for credit) Learning by experience and practice in an IT related company. The course exposes students to the various areas and activities related to the information systems profession in a cooperating organization.

**Prerequisite:** Minimum C+ grade in CIS 24053; and minimum 2.500 overall GPA.

**Schedule Type:** Practicum or Internship

**Contact Hours:** 3 other

**Grade Mode:** Standard Letter

**Attributes:** Experiential Learning Requirement

**CIS 44293 WORKSHOP IN PROFESSIONAL IS CERTIFICATION 3 Credit Hours**

Supervised workshop designed to help students pass at least one VMware, Microsoft or other vendors' professional certification credentials. The student chooses the exam to take, with the course providing a supported self-study opportunity to prepare for the exam.

**Prerequisite:** Minimum C+ grade in CIS 24053; and minimum 2.500 overall GPA.

**Schedule Type:** Workshop

**Contact Hours:** 3 other

**Grade Mode:** Standard Letter

**CIS 44295 SPECIAL TOPICS IN INFORMATION SYSTEMS 3 Credit Hours**

(Repeatable for credit) Special topics course on newest advances in information systems technology and how they support business activities. New and emerging topics in information systems are presented in an experimental way, with the content of the course changing from one offering to the other.

**Prerequisite:** Minimum C+ grade in CIS 24053; and minimum 2.500 overall GPA.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter