

# COMPUTER INFORMATION SYSTEMS (CISB)

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## Courses

### **CISB 101 Business Information Technology 3 Credits**

Introduction to computing and software, including computing systems in a business environment and applicable software.

### **CISB 205 Advanced Business Software 3 Credits**

Use of electronic spreadsheets and database management software. Lectures, demonstrations, and hands-on projects. Developing customized applications with macros in spreadsheets. Creating tables, reports, forms, and queries to creating appropriate relationships and developing customized database software applications.

### **CISB 206 Introduction to Business Application Programming 3 Credits**

Beginning programming with emphasis on solving problems in the context of business applications.

### **CISB 210 Fundamentals of Information Systems 3 Credits**

Exploration of information systems in a business environment. Use of information systems to improve business processes and organizational goals. Introduction to hardware, software, ethical issues, career opportunities, and organizational uses of information systems.

### **CISB 211 Introduction to Cybersecurity 3 Credits**

Introduction to cybersecurity in a business environment. Topics include policy and governance, frameworks, risk and asset management, data loss prevention, access control management, and cybersecurity incident response.

**Terms Typically Offered:** Fall.

### **CISB 241 Introduction to Business Analysis 3 Credits**

Introduction to descriptive, predictive, and inferential analysis techniques with business applications. Topics include summarizing data graphically and numerically; elementary probability; discrete and continuous probability distributions; sampling distributions; intervals and tests for one and two samples; correlation and regression; chi-squared tests; and one-way analysis of variance. Appropriate business and statistical software will be used.

**Prerequisites:** MATH 113 or higher.

**Equivalent Course(s):** STAT 241

**Terms Typically Offered:** Fall, Spring.

### **CISB 295 Independent Study 1-3 Credits**

Course may be taken multiple times up to maximum of 6 credit hours.

### **CISB 301 Digital Forensics 3 Credits**

In-depth exploration of computer and digital forensics, with emphasis on advanced techniques for investigating cybersecurity incidents.

Topics include: forensic principles applied to networks, hardware, operating systems, and mobile devices. The course emphasizes legal considerations, investigative methodologies, and the use of professional tools to conduct digital forensic analyses.

**Terms Typically Offered:** Spring.

### **CISB 305 Solving Problems Using Spreadsheets 3 Credits**

Critical analysis and problem solving using tools in spreadsheets. Decision support utilizing spreadsheet tools covered by hands-on cases, book tutorials, and lecture materials. Structured problems, semi-structured problems, and what-if scenarios explored.

**Terms Typically Offered:** Fall.

### **CISB 306 Solving Problems Using Databases 3 Credits**

For students who have minimal background in databases. Assists in understanding the importance of data management in organizations through hands-on experience in solving business problems using relational database management software.

### **CISB 309 Enterprise Systems 3 Credits**

Theoretical and practical issues of enterprise systems within organizations. Demonstrates how enterprise systems integrate information and organizational processes across functional areas with a unified system comprised of a single database and shared reporting tools.

**Prerequisites:** CISB 210.

### **CISB 311 Fundamentals of Cloud Security 3 Credits**

Introduction to cloud-based cybersecurity and related concepts. Topics include architectural concepts and design requirements, cloud data security, cloud platform and infrastructure security, cloud application security, and cloud computing legal compliance. Special application on applying learned principles to real world case studies.

**Prerequisites:** CISB 211.

**Terms Typically Offered:** Fall.

### **CISB 315 Information Systems Infrastructure 3 Credits**

Information systems infrastructure, computer architecture and communications networks in an organizational context.

**Prerequisites:** CISB 210.

### **CISB 331 Advanced Business Programming 3 Credits**

Procedural and object-oriented software engineering methodologies using modern business languages. Emphasis on data definition and measurement, record and file processing, report generation and other traditional business information systems applications using modern methods of top-down, structured design. Other concepts include developing screen editors, abstract data types, and data structures including sequential, random and indexed files.

**Prerequisites:** CISB 206 or CSCI 110.

### **CISB 341 Quantitative Decision Making 3 Credits**

Application of inferential statistics to realistic business situations; use of quantitative tools to enhance business decision-making ability. Descriptive statistics for data summarization, probability theory, distributions, estimation, and index numbers with emphasis on hypothesis testing, analysis of variance, regression/correlation, time series, and introduction to operations research and linear programming.

**Prerequisites:** MATH 113 or higher, and CISB 241 or STAT 241.

### **CISB 342 Data Mining and Visualization 3 Credits**

Application of data mining and visualization tools to business related data sets. Using a blend of data mining and visualization techniques, hands-on experience will be gained in discovering how data can inform the business decision-making process.

**Prerequisites:** CISB 205, CISB 241 or STAT 241, and CISB 341.

**Terms Typically Offered:** Fall.

### **CISB 343 Big Data Analytics 3 Credits**

Analysis of large data sets for emergent patterns using modern software tools. Topics can include: NoSQL, cloud computing, and text mining tools.

**Prerequisites:** CISB 205, CISB 241 or STAT 241, and CISB 341.

**Terms Typically Offered:** Fall.

### **CISB 393 Cooperative Education 3-12 Credits**

Course may be taken multiple times up to maximum of 15 credit hours.

### **CISB 395 Independent Study 1-3 Credits**

Course may be taken multiple times up to maximum of 6 credit hours.

**CISB 396 Topics 1-3 Credits**

Course may be taken multiple times up to maximum of 15 credit hours.

**CISB 410 Project Management 3 Credits**

Processes, techniques and tools of project management. Evaluating, initiating, planning, staffing, executing, controlling, and closing projects using project management software.

**Prerequisites:** CISB 210 is a prerequisite or corequisite if the student has reached junior status.

**CISB 442 Systems Analysis and Design 3 Credits**

Analysis and logical design of information systems. Practice in project management during team-oriented analysis and design of a departmental level system.

**Prerequisites:** CISB 210, CISB 309, CISB 315 (may be taken concurrently), CISB 410, and CISB 206 or CSCI 110 or CSCI 111, or permission of instructor.

**CISB 451 Database Administration 3 Credits**

Continuation of CISB 442 Systems Analysis and Design. Covers development and implementation of conceptual and detailed physical system design using proper database tools and methods.

**Prerequisites:** CISB 205, CISB 442, and ACCT 202.

**CISB 460 Electronic Commerce Systems 3 Credits**

Comprehensive examination of electronic commerce, how it is conducted and managed, and its opportunities, limitations, issues and risks.

Coverage of technological infrastructure that supports e-commerce systems, plus the implications of such systems in the business environment. Exercises include exploration of e-commerce web sites and features, plus discussion and demonstration of state-of-the-art e-commerce tools.

**Prerequisites:** CISB 210 or permission of instructor.

**CISB 470 Management of Information Systems 3 Credits**

Reviews the development of analyzing information use by organizations with different types of information systems. The conceptual foundations of information systems and the development, operation, management, uses, parties, control, structure, and impact of these systems will be addressed. Analysis and design of information systems is stressed through case study projects, emphasizing the role of computing in information systems and design of computer-based systems, expert systems, decision support systems and executive information systems.

**Prerequisites:** Junior or senior status.

**CISB 471 Advanced Information Systems 3 Credits**

Capstone course for the BS in CISB and the BAS in CISB. Integrates management information needs, decision-making criteria, and design of interactive user interfaces. Design and development of computerized management control systems for major functional modules of an organization will be investigated using database management systems, distributed processing, and structured systems development.

**Prerequisites:** CISB 210, CISB 331, CISB 410, CISB 442, CISB 451, and CISB 470.

**Terms Typically Offered:** Spring.

**CISB 491 Directed Readings in Computer Information Systems 1-3 Credits**

Study of a leading edge topic within Computer Information Systems under direction of CIS faculty. Prior to registering, the student must meet with the CIS instructor to determine a topic and a method for reporting. For each credit hour registered, the student will read and report on at least 200 pages of scholarly readings.

**Prerequisites:** CIS major, junior or senior status, and permission of instructor.

**CISB 493 Cooperative Education 3-12 Credits**

Course may be taken multiple times up to maximum of 15 credit hours.

**CISB 495 Independent Study 1-3 Credits**

Course may be taken multiple times up to maximum of 6 credit hours.

**CISB 496 Topics 1-3 Credits**

Course may be taken multiple times up to maximum of 15 credit hours.

**CISB 500 Management of Information Systems 3 Credits**

Reviews the development of an overall framework for analyzing the use of information by organizations along with examples of different types of information systems. The conceptual foundations of information systems and the development, operation, management, uses, parties, control, structure, and impact of these systems will be addressed. The analysis and design of information systems is stressed through case study and projects, emphasizing the role of computing in information systems and design of computer-based systems, expert systems, decision support systems and executive information systems.

**CISB 501 Business Analytics 3 Credits**

Examination of quantitative decision making for managers. Descriptive and predictive analytical tools in a management context will be covered along with current topics in data science and data analytics.

**Terms Typically Offered:** Fall.

**CISB 505 Advanced Project Management 3 Credits**

Processes, techniques and tools of project management. Evaluating, initiating, planning, staffing, executing, controlling, and closing projects using project management software. Projects, writing, and presentation to demonstrate mastery at the graduate level.

**Prerequisites:** CISB 210 and permission of instructor.

**CISB 560 Electronic Commerce Systems 3 Credits**

A comprehensive examination of the modern paradigm of electronic commerce, how it is conducted and managed, and its major opportunities, limitations, issues, and risks. Coverage of technological infrastructures that support e-commerce systems, plus the implications of such systems in the business environment. Exercises will include exploration of e-commerce web sites and features, plus discussion and demonstration of state-of-the-art e-commerce tools.

**Prerequisites:** Graduate status at Colorado Mesa University.