AI FRAMEWORK AND ANALYTICS, MINOR

Why take this minor?

This program will provide a solid foundation for students wishing to study and implement AI solutions in different areas. The program provides students with overviews of the AI implementation to help them select the best solution for the problem that will be solved. The program also reflects on the areas surrounding the use of this technology, as well as providing specific examples that use these in business cases.

Required for Graduation

- Courses
  - 6
- Credits
  - 19

Requirements

Code	Title	Credits
CSC 230	Programming Concepts and User Interfaces	4
MTH 260	Discrete Structures I	3
CSC 456	Artificial Intelligence	3
BUS 205	Business Systems for Analytics	3
Select one of the following:		3
BSA 385	Business Intelligence and Knowledge Management	
BSA 405	Emerging Trends in Business Systems and Analytics	
Select one of the following:		3
PHL 341	Minds, Brains, And Zombies	
CSIT 300	Computers, Ethics, And Social Values	
ISBT 411	Intelligent Systems	
Total Credits		**19**

Possible Course Sequence

Actual course sequence will depend on when courses are offered.

Course	Title	Credits
Third Year		
First Semester		
CSC 230	Programming Concepts and User Interfaces	4
MTH 260	Discrete Structures I	3
	Credits	**7**
Second Semester		
BUS 205	Business Systems for Analytics	3
CSC 456	Artificial Intelligence	3
	Credits	**6**
Fourth Year		
First Semester		
Select one of the following:		3
CSIT 300	Computers, Ethics, And Social Values	
ISBT 411	Intelligent Systems	
PHL 341	Minds, Brains, And Zombies	
	Credits	**3**
Second Semester		
Select one of the following:		3
BSA 385	Business Intelligence and Knowledge Management	
BSA 405	Emerging Trends in Business Systems and Analytics	
	Credits	**3**
	Total Credits	**19**

CSC 230 Programming Concepts and User Interfaces
This course addresses problem solving and programming using problem-based learning; variables, control flow, iteration, modules, arrays, file processing, classes, and objects; and basic graphical-user interface concepts (forms/pages and controls) for desktop and/or Web or mobile environments. The course consists of three hours of lecture and three hours of laboratory per week. Prerequisite(s): MTH 101 or Math Placement Score 102M Corequisite(s): CSL 230

MTH 260 Discrete Structures I
This course is the first half of a two-semester course in discrete mathematics. Topics in the course include logic, sets, functions, numeric bases, matrix arithmetic, divisibility, modular arithmetic, elementary combinatorics, probability, graphs, and trees. There will be an emphasis on applications of mathematics. Prerequisite(s): MTH 101 or a Mathematics Placement of 102M

CSC 456 Artificial Intelligence
Intelligent systems technologies that have or may become practical for organizational use will be addressed in this course. Topics may include simple expert systems and expert systems with certainty factors, case-based reasoning, machine learning, neural networks, genetic algorithms, fuzzy logic, and two-person game playing. (offered in alternate years) Prerequisite(s): CSC 230 and MTH 260

BUS 205 Business Systems for Analytics
This course studies how business systems work and examines challenges confronting business organizations in the information age and beyond. One major challenge is to efficiently and effectively use three most important organizational resources, information, technology, and people, to provide service and value. To meet this challenge, the course studies business systems and strategies that organizations can utilize to organize data into information and synthesize information into knowledge. The course examines design and development of relational database management systems using Microsoft Access (structured query language), decision support systems using Microsoft Excel (what-if analysis, pivot tables, and decision tree analysis), enterprise information systems using SAP (ERPsim), and web-based systems using Google Analytics. The concepts, models, and frameworks are derived from both academic and professional sources. Prerequisite(s): CSC 155

BSA 385 Business Intelligence and Knowledge Management
This course is about the manager's responsibilities for decision making in the Information Age using Decision Support Systems (DSS) and Expert Systems (ES). DSS topics include: Data Management, Modeling and Model Management, User Interface, Executive and Organizational Systems, Group Decision Support Systems (GDSS), and DSS Building Process and Tools, including Spreadsheets, Natural Language Programming, and Influence Diagramming. ES topics include: Applied Artificial Intelligence, Knowledge Acquisition and Validation, Knowledge Representation, Inferencing, and ES Building Process and Tools. Students are required to apply DSS and ES software packages in a hands-on environment. Prerequisite(s): BUS 205 or equivalent

BSA 405 Emerging Trends in Business Systems and Analytics
This course is designed to introduce students to one of several areas of multi-disciplinary emerging trends in Business Systems and Analytics. Students will learn the fundamental principles and concepts of a specific topic, its applicable technology, the design and implementation of the systems that support the area of study, and methods for measuring efficacy. Evolving technologies will be addressed as appropriate, and their relevance to business pursuits will be discussed and analyzed. Lectures and case studies will be used to give the student a solid understanding of the topic. A group project to develop and present an area initiative/concept will be the capstone of this course. This course is offered under different titles and can be repeated for additional credit when taken as a different topic. Prerequisite(s): Varies by topic

PHL 341 Minds, Brains, And Zombies
This course examines human consciousness. Topics include the relation between the mind and the brain, the possibility of building conscious machines, the mental life of animals, and conceptual puzzles posed by zombies.

CSIT 300 Computers, Ethics, And Social Values
The topics in this course include privacy and information use/misuse offline and online, intellectual property, the First Amendment, e-waste, accuracy of information, ethics, effects of computers on work and society, responsibilities and risks of computing, current issues such as credit cards and associated debt, cyberwar, and cloud computing. (offered in alternate years) Prerequisite(s): CSIT 220, CSC 240 Corequisite(s): ENG 210

ISBT 411 Intelligent Systems
This course presents a systematic introduction to the fundamentals of computational intelligence, including in-depth examination of artificial neural networks, evolutionary computing, swarm intelligence, and fuzzy systems. Computational intelligence is the study of adaptive mechanisms to enable or facilitate intelligent behavior in complex and changing environments. Specific environments examined will include Laboratory Automation, Automated Process Control, Robotics, and Business Decision Support.