

upon completion of the major. Satisfactory completion of this project, including a written and oral presentation, will demonstrate a solid understanding of the major, as well as the confidence and skills to work with existing and emerging aspects of the professional field, to do independent research and effective problem solving, and to communicate effectively. *Prerequisite: Interdisciplinary Studies 206, Business 215 or Social Science 217, senior standing, and permission.*

## **Information Science and Technology (IST)**

### **307 Database Design and Development (3)**

A study of the methods of organizing data on peripheral devices and of accessing this information in an efficient manner. Upon completion of this course, students will understand the relationship between file systems and database systems, and will design and implement a database application using a popular DBMS. *Prerequisite: Information Science and Technology 145.*

### **341 Principles of Programming Languages (3)**

A study of the principles governing the design of modern programming languages including: language syntax - representation and parsing; language processors - compilers and interpreters; language representations - data/control structures and binding; language styles - procedural, functional, object, logic, and data flow. One or more example languages are studied in some detail. Upon completion of this course, the student will have an understanding of how programming languages are developed and of the common principles that relate various programming languages. *Prerequisite: Permission.*

### **352 Operating Systems (3)**

An introduction to operating systems. Students will leave the course with a better understanding of multiprogramming concepts such as CPU scheduling, deadlocks, memory management, virtual memory and protection, operating systems structures, and distributed operating systems. Current operating systems will be surveyed and discussed as they relate to these concepts. *Prerequisite: Permission.*

## **Information Systems Management (ISM)**

### **101 Software Development I (3)**

This course provides, through the development of small software applications, an understanding of the process of developing software, including the identification of a problem, and the design, analysis, and implementation of algorithms and data/file structures to solve that problem. Students learn how to implement algorithms and data/file structures in a high-level language, and how to test and verify that implementation. *Prerequisite: Information Systems Management 100. (Students may demonstrate competence to fulfill this requirement.)*

### **102 Software Development II (3)**

A continuation of Information Systems Management 101, this course provides, through the development of larger software applications, an under-