CMPL 502 Excel (2 Credits)
A comprehensive examination of spreadsheet software. Students will build a variety of spreadsheets using simple and complex formulas, functions, graphics, database features, sorts, linkages within spreadsheet and between spreadsheets, and macros.
Prerequisite(s): Basic Algebra and knowledge of computer operating system. This course is valuable for all Business students and Computer Science Students. It provides competency and fluency in the standard software used for business analysis and as a link between large computer software systems and the end user.

CMPL 511 Software Tools (4 Credits)
This introductory course serves as a foundation for all other computer courses or for General Education as needed. The focus of the course is on personal computers and their applications, concentrating on computers using a Windows operating system. Basic hardware and software concepts are reviewed and examined in depth. The lab activities concentrate on gaining proficiency in the use of a common operating system; software applications, including word-processing, spreadsheets, and presentation software; tools such as the World Wide Web, including electronic mail; and information resources and research databases. Students are introduced to databases and networking.

CMPL 515 Programming Fundamentals (4 Credits)
The course is designed to provide students with a sound background in structured programming logic and design. These foundational concepts can be applied regardless of which programming languages a student eventually uses to write programs. The demonstration language for programming concepts will be Microsoft Visual Basic. The course covers the key mathematical and logical constructs that are the basis of much programming. Topics include the software development life cycle, particularly the programming phase; structured programming techniques; problem-solving and algorithm development; decision control structures, including selection (IF/CASE) and repetition (looping) structures; variables and arrays; and data structures.
Prerequisite(s): MATH 502; Proficiency in Excel is necessary for success in this course.

CMPL 525 Foundations of Cybersecurity (4 Credits)
This course addresses the foundations of cybersecurity, including threats and vulnerabilities as well as the tools, technologies, and strategies used to manage those threats and vulnerabilities. PREQUISITE(S): None

CMPL 530 Introduction to Programming with Python (4 Credits)
In this introductory programming with Python course, students will have the opportunity to learn about data types, control flow, object-oriented programming, and graphical user interface-driven applications. The examples and problems used in this course are drawn from diverse areas such as text processing, simple graphics creation, and image manipulation. This course will explore the large standard library of Python 3, which supports many common programming tasks.
Prerequisite(s): CMPL 515 Programming Fundamentals

CMPL 537 Intermediate Programming with Python (4 Credits)
Students will have the opportunity to take their Python programming skills to the next level with this intermediate course. This course includes a review of basic concepts such as lists, strings, and dictionaries, and more advanced topics such as threading, multiprocessing, context managers, and generators.
Prerequisite(s): CMPL 530 Introduction to Programming with Python

CMPL 538 Databases in the Workplace (2 Credits)
Database Management Systems come in many shapes and sizes and range from low cost options for individual users to complex solutions requiring significant organizational investment. Since there are a variety of DBMSs available for a large number of uses, knowledge workers in any field can benefit from familiarity with some of the basic features, as well as strengths and weaknesses, of the major types. This introductory course focuses on the ways in which databases function in the workplace and provides a starting point for understanding the issues involved in selecting, designing, and making decisions about a DBMS. NOTE: Prior basic computer experience is recommended. This course is not appropriate for Information Technology majors and may not be combined with other IT courses to satisfy degree requirements.

CMPL 540 Best Practices in Website Design (2 Credits)
This hands-on course outlines the fundamentals of web design. Students consider ethical use of information and best practices when creating websites using free web page design programs. Working with a basic design program, students explore layout, graphics, text, color, links, tables, frames and content. Students use website design software to create a simple website of their own, as well as examine publication and promotion options. NOTE: Basic computer competence is required. This course is not appropriate for Information Technology majors and may not be combined with other Information Technology courses to satisfy degree requirements.

CMPL 612 Advanced Software Tools (4 Credits)
This is a project-oriented software applications course to help the student gain competency with advanced features of office productivity software and to introduce more advanced database application concepts. NOTE: Excel is recommended for success in this course.

CMPL 614 Computer and Network Systems (4 Credits)
This course offers a practical study of the hardware and software of modern computing systems and networks. Participants increase their knowledge of hardware and operating system software by studying the functions and interactions of computer and peripheral components such as central processing units (CPU), memory, storage, print engines, etc. Learners also study the workings of network components such as protocols, hubs, routers, and switches. Through exposure to a mix of theory, extensive vocabulary, and specific knowledge about trends in contemporary systems, learners develop skills to effectively communicate with others regarding the specification, purchase, and installation of an office or home computer system/network.
Prerequisite(s): CMPL 515 Programming Fundamentals or CMPL 612 Advanced Software Tools.

CMPL 620 Virtualization and Cloud Computing (4 Credits)
In this course students will have the opportunity to learn the fundamental concepts, components, infrastructure, as well as security and privacy considerations of cloud computing and virtualization systems. Course activities will address the skills and knowledge necessary to install, configure, and manage virtual environments and how to effectively plan, implement, and manage cloud computing.
Prerequisite(s): CMPL 614 Computer and Network Systems, CMPL 525 Foundations of Cybersecurity.
CMPL 622  Human Computer Interaction  (4 Credits)
This course builds an understanding of human behavior with interactive objects, focusing on how to develop and evaluate interactive software using a human-centered approach. This includes examining the many different types of interactive software, understanding the principles of effective graphical user interface design, evaluating human-centered software and software development and exploring aspects of collaboration and communication as they affect individual and group interaction with software systems.

CMPL 625  Advanced Programming with Python  (4 Credits)
In this course, students will have the opportunity to take a deep dive into several advanced concepts of Python programming and explore larger-scale application development using the language. Students will also develop an understanding of the issues associated with more extensive software projects and undertake code reviews. This course also surveys web application development tools, along with specialized skills such as Client/Server application development.

Prerequisite(s): CMPL 537 Intermediate Programming with Python

CMPL 633  Mobile Application Development  (4 Credits)
This course introduces students to programming technologies, design, and development related to mobile applications. Topics include accessing device capabilities, industry standards, operating systems, and programming for mobile applications using an OS Software Development Kit (SDK). Through course activities, students will have the opportunity to develop the skills needed to create basic applications for mobile devices.

Prerequisite(s): CMPL 625 Advanced Programming with Python

CMPL 638  Web Application Development  (4 Credits)
This course addresses modern website development using contemporary languages like PHP and Python. Development skills include presenting and receiving information through a website, validating entered information, and storing entered information in text files or databases. Students will have an opportunity to develop an understanding of the principles of web page and website design; standard object models, and the use of server-side programs for database and file access; testing, software quality assurance; and the process of publishing websites.

Prerequisite(s): CMPL 625 Advanced Programming with Python

CMPL 650  Best Practices in Information Technology  (4 Credits)
This course is a project-oriented capstone learning experience that is designed to integrate learning from coursework with related work or other experience. Students focus on best practices in information technology and project management, with specific attention to their area of specialty. Students will complete an integrative project related to their program option and career interests.

Prerequisite(s): CRIT 602 Advanced Critical Analysis and Strategic Thinking, IDIS 601 Interdisciplinary Seminar, and all major requirements must be completed prior to enrollment in this course. Academic Advisor approval is required for registration to be processed.