COMPUTER SCIENCE - BLOOMFIELD COLLEGE (CMP)

CMP 100 Introduction to Informatics (3 credits)
This course provides a foundational overview of informatics, focusing on how information is collected, managed, and used through technology. Students will explore core topics such as information systems, human-computer interaction, data ethics, and the role of informatics in society. Designed for students pursuing studies in computing, information science, or related fields, the course emphasizes real-world applications of informatics in areas like healthcare, business, and social systems. Through hands-on assignments and discussions, students will begin developing the technical and analytical skills necessary for further study in the discipline. No prior programming experience is required.

CMP 108 Spreadsheet Essentials (3 credits)
Students will develop essential spreadsheet skills to solve business problems. Students will learn how to create and format a workbook and work with formulas, functions, charts, and graphics. Students will also learn to use PivotTables and PivotCharts, advanced formulas and functions, how to manage multiple worksheets, and other advanced techniques.

CMP 120 Cyber Crime (3 credits)
This course provides an overview of the various forms of cyber crime and the methods, thought process and tools used by criminals. Criminology theories such as conflict, control and strain will also be discussed. The impact of cyber crime and public policy implications will also be explored.

CMP 126A Programming I (3 credits)
An introduction to the problem-solving process, numerical methods, algorithms and algorithm design. Basic principles of software engineering, program design, coding, debugging, and documentation are introduced. Structured and object-oriented programming is taught using the Python platform.

CMP 130 Introduction to Data Visualization (3 credits)
Prerequisite(s): CMP 140, CMP 141, CMP 160, CMP 161, OR MTH 131. The class will discuss contemporary visualizations and critique their effectiveness in conveying information. Students will learn techniques for visualizing multivariate, temporal, text-based, geospatial, hierarchical, and network-based data. Students will learn how to acquire, parse, and analyze datasets and the process of encoding data visualizations to achieve aesthetically pleasing, effective communication.

CMP 211 Mobile Applications (3-4 credits)
This course will provide instruction on developing, deploying and maintaining applications for mobile devices that use the Android and IOS platforms. Students will develop applications that function solely on the device and applications that integrate with Web Services.

CMP 226B Programming II (3 credits)
Prerequisite(s): CMP 126A with a grade of C or higher. A continuation of CMP 126. Continued development of design, coding, debugging, and documentation. Topics covered include Servlet, Java Server Pages, Web Application, polymorphism, overloading along with the most common aspects of Java.

CMP 228A Data Structures (3 credits)
Prerequisite(s): CMP 226B with a C or higher. Emphasis is placed on the importance of efficient data structures and algorithms in design and implementation. The classic data structures include arrays, strings, list, linked lists, stacks, queues, trees, and graphs and iterative and recursive programming techniques. Algorithms include sorting and searching with emphasis on complexity and efficiency.

CMP 235 Web Programming (3-4 credits)
Prerequisite(s): CMP 226 may be taken concurrently. An introduction to web design concepts and technology, this course covers the fundamentals of the Internet, browsers, web servers, and web programming languages. Students will gain extensive experience using HTML and CSS.

CMP 300A Systems Analysis and Design (3 credits)
Prerequisite(s): CMP 126A. An introduction to the fundamental concepts of systems analysis and design. The role of the system analyst and the training skills required to function in this position are presented. Students will do application analysis, including modeling of processes and data and transformation of analysis results into a design for a specific computer environment. Design of programs, system testing, evaluation, conversion and documentation will also be discussed. The life cycle concept and its application to business systems are also discussed.

CMP 322B Introduction to Operating Systems (3 credits)
Prerequisite(s): CMP 225 or CMP 228B.

CMP 330B Database Management (3 credits)
Prerequisite(s): CMP 300A. This course focuses on modern database theory and use. Students will learn and have hands-on practice with major Databases topics including database use in application and analytics, relational table structure, unstructured data, SQL language, efficient data structures and indexing, secure data storage and access, triggers, and search and analysis functionality. Students will design their own databases and will implement code that interacts with these databases to CRUD (create, read, update, delete) and analyze data.

CMP 333 SPECIAL TOPICS IN CIS (4 credits)
CMP 333 SELECTED TOPICS IN COMPUTER SCIENCE* , Special topics of current interest in computer, and information systems. Topics may include, Expert Systems, Data mining, Computer graphics,, Assembly language, etc. Content varies each, offering. Course may be repeated for credit as, topics change. 1 c.u., Prerequisite: CMP 226 with a grade of C or higher.

CMP 342 Management Information Systems (3 credits)
Prerequisite(s): BUS 200. Information requirements, planning, design, implementation, facilities, equipment, replacement of equipment, and control. Analysis of cost/benefit relationships to the total management effort.

CMP 460 Applied Systems Development Project (3 credits)
Restriction(s): Senior Standing. Students function as teams of analysts and programmers to complete a comprehensive system development project(s). Teams analyze selected programs, design a system to solve the problem including project specifications, system flow-chart and timeline for completion. Systems analysis and programming skills will be emphasized. Teams will make formal presentations of their results.