The requirements for a minor in Computer Programming and Information Systems will meet all the requirements of a minor as stated in the college catalog.

About Academic Minors

Farmingdale State College students are invited to enhance their studies with an "Academic Minor." A minor is a cluster of thematically related courses drawn from one or more departments. In addition to department based minors (e.g. computer programming & info systems), interdisciplinary minors are also available (e.g. legal studies).

Academic minors are approved by the College-Wide Curriculum Committee and the Provost. Students must make application for an academic minor through the department offering the minor in conjunction with the Registrar's Office. Specific course work must be determined in consultation with a faculty member in the department offering the minor. A statement of successful completion of the academic minor will appear on the student's transcript at the time of graduation.

- A minor is considered to be an optional supplement to a student's major program of study.
- Completion of a minor is not a graduation requirement and is subject to the availability of the courses selected. However, if the requirements for a minor are not completed prior to certification of graduation in the major, it will be assumed that the minor has been dropped. Consequently, the student will only be certified for graduation in their primary major.
- Only students in 4 year baccalaureate programs can apply for a minor.
- A minor should consist of 15 to 21 credits, with the exception of the Chemistry and Air Force ROTC minors which require 22 credits.
- At least 12 credits must be in courses at the 200 level or higher.
- At least 9 credits must be residency credits.
- Specific requirements for each minor are determined by the department granting the minor. Each minor and criteria are described in the Academic Minors Information Guide.
- Students must maintain a minimum cumulative GPA of at least 2.0 in their minor. Some minors may require a higher GPA.
- Students are prohibited from declaring a minor in the same discipline as their major (e.g. one cannot combine an applied math minor with an applied math major). Academic minors may not apply to all curricula.
- Students are permitted to double-count minor courses with liberal arts courses, general education courses and free electives but can only double-count up to 6 credits of required major coursework toward the minor.
- Students are only permitted to take more than one minor with appropriate written approval of their Department Chair or School Dean.
Fall 2017 - Subject to Revision

Required Courses:

BCS 120 Foundations of Computer Programming I
BCS 160 Computers, Society, and Technology
BCS 230 Foundations of Computer Programming II
Choose 3 out of 5 of the following courses
BCS 130 Website Development I
BCS 215 UNIX Operating Systems
BCS 260 Database
BCS 262 Data Communications

BCS Elective – To be determined in consultation with the Department Chair

When it is deemed necessary, substitutions may be made at the discretion of the department chair.

Course Descriptions

BCS 120 Foundations of Computer Programming I
This course introduces the C++ Programming Language as a means of developing structured programs. Students will be taught to develop algorithms using top-down stepwise refinement. Students will be introduced to the concept of Object Oriented programming. In addition, students will get a thorough exposure to C++ syntax and debugging techniques. Credits: 3

BCS 160 Computers, Society, and Technology
This is an introductory course that provides students with the knowledge to stay current and informed in a technology-oriented, global society. Students will receive instruction in basic computer concepts and terminology, the fundamentals of the Windows operating system and have hands-on experience at the beginning to intermediate level using Microsoft Excel and Access. The Internet will be used to supplement textbook and lecture materials. Note: Students taking this course may not receive credit for BCS 102 or 202. Credits: 3

BCS 230 Foundations of Computer Programming II
This course expands the knowledge and skills of Foundations of Computer Programming I. Among the topics covered are: arrays, pointers, strings, classes, data abstraction, inheritance, composition and overloading. Prerequisite(s): BCS 120 with a grade of C or higher Credits: 3

BCS 130 Website Development I
This is an introductory course in Web page authoring in which students will create Web pages using HTML (HyperText Markup Language) and CSS (Cascading Style Sheets). In addition to the introductory topics of changing text appearance, creating hyperlinks, and inserting images into a Web page, advanced topics such as layout, tables, and forms will also be covered. Credits: 3

BCS 215 UNIX Operating Systems
This course develops the fundamental knowledge of computer operating systems using UNIX. Topics include basic understanding of the UNIX system, utilizing the file system, programming language and security system. BCS 120 may be taken as a Prerequisite or Corequisite. Prerequisite(s): BCS 120 Corequisite(s): BCS 120 Credits: 3

**BCS 260 Database**
This course provides the fundamental knowledge of database concepts. Topics studied will include the history and advantages of database systems, and the process of database design including entity-relationship diagrams and database normalization. Students will have hands-on experience using SQL (Structured Query Language). Prerequisite(s): BCS 120 and BCS 160 all with a grade of C or higher Credits: 3

**BCS 262 Data Communications**
This course is an introduction to the concepts and applications of computer networking and its role in the business world today. Topics include: history of networking and applications, voice and data communications, hardware, transmission, network topologies, network analysis, the OSI model, design, implementation and management issues. Credits: 3

Admission to Farmingdale State College - State University of New York is based on the qualifications of the applicant without regard to age, sex, marital or military status, race, color, creed, religion, national origin, disability or sexual orientation.