Program of Study

**Liberal Arts and Sciences (60 credits)**

- EGL 101 Composition I: College Writing (GE) ................. 3
- EGL 102 Composition II: Writing About Literature ........... 3
- Basic Communication (GE) .................................. 3
- The Arts (GE) ................................................. 3
- Foreign Language (GE) ...................................... 3
- Social and Behavioral Science (GE) .......................... 6
- American/Other World/ Western Civilization History (GE) .... 3
- Humanities (GE) ............................................. 3
- Natural Science (GE) ........................................... 4
- PHY 135 College Physics I (GE) ............................... 4
- PHY 136 College Physics II .................................... 4
- MTH 110 Statistics (GE) ...................................... 3
- MTH 116 College Algebra and Trigonometry .................. 4
- MTH 129 Pre Calculus ........................................ 4
- MTH 130 Calculus with Applications ......................... 4
- Liberal Arts and Sciences Elective ............................ 3

Please refer to the General Education and Writing Intensive Requirement Sections of the catalog and consult with your advisor to ensure that graduation requirements are satisfied.

**Software Technology Core (38 credits)**

- EET 104 DC/AC Circuits .................................... 4
- EET 105 Introduction to Digital Electronics ................... 2
- EET 220 Internetworking ..................................... 3
- SET 230 Wireless Technology and Applications ................. 3
- SET 310 Software Applications for ERP Solutions ............. 3
- SET 320 Software Applications in Supply Chain Management ..... 3
- SET 400 Network Planning and Implementation ................. 3
- SET 402 Software Applications in Statistical Analysis & Manufacturing Mgmt ........................................... 3
- SET 405 Software Applications in Manufacturing & Service Functions ........................................... 3
- SET 410 Senior Project .......................................... 3
- EET 440 Networking & Data Communications .................. 4
- EET 441 Advanced Networking ................................ 4

**Related Courses (15 credits)**

- BCS 120 Foundations of Computer Programming I ............ 3
- BCS 230 Foundations of Computer Programming II ............ 3
- BCS 345 Java Programming .................................... 3
- BCS 260 Database ............................................. 3
- BCS 301 Systems Analysis and Design ......................... 3
- Electives: ................................................................ 12

Can be selected from BCS, BUS, EET, MET, GPH, IND courses (by advisement only)

**Total Credits** ................................................................ 125

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**Curriculum Summary**

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<tr>
<th>Degree Type:</th>
<th>BS</th>
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<td>Total Required Credits:</td>
<td>125</td>
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For additional information:

Dr. Hazem Tawfik, Chair
Automotive & Mechanical Engineering Department
631-420-2046

Office of Admissions: 631-420-2200

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.
SET 104 DC/AC Circuits
An introductory course to the fundamentals and basic principles of DC and AC circuits. Topics covered include: the definition of current, voltage and passive circuit elements such as, resistors, capacitors, and inductors, through their I-V characteristic relationships, Ohm’s Law, Kirchoff’s Current and Voltage Law, Superposition, Thevenin’s and Norton’s equivalent circuits and Maximum Power Transfer. AS signal waveforms and their Average and RMS values; alternating current, voltage and power, resistors, capacitors and inductors in AC circuits, ideal transformers and the concept of resonance. Introduction to the operation and basic applications of first order passive, low and high pass, RC filters. Corequisites: MTH 129
(3,1,2) Credits: 4

SET 105 Introduction to Digital Electronics
An introduction to the fundamental concepts of Digital Electronics. Topics covered: Number systems, Boolean Algebra, Logic Gates, Combinational Circuits, Karnaugh Map Minimization Techniques, Adders, Signed Numbers, Multiplexers, Code-Converters, Decoders, Demultiplexers, Comparators and 7-segment displays. The laboratory component of the course reinforces the topics covered in the theory through relevant experiments performed by each student on logic trainers. Corequisites: EET 111 or EET 104
(1,3) Credits: 2

SET 220 Internetworking
The course will focus on developing the skills needed to design, build and utilize wireless networks. The topics will include function of a wireless system, basic technologies for wireless, wireless applications, wireless internet, hardware and standards for wireless networks, and building and maintaining a wireless system. Prerequisites: EET 104
(2,2) Credits: 3

SET 230 Wireless Technology and Applications
The course will focus on designing, implementing and evaluating software applications for such functions as manufacturing, product life cycle management, and supply chain management. This course assumes that the student will have basic understanding of the network technologies, engineering cost estimation, and project implementation. Laboratory projects will focus on a real world experience in networking planning and implementation. Prerequisites: SET 310 or ECS 208
(2,2) Credits: 3

SET 400 Network Planning and Implementation
This course will focus on developing skills needed to plan and implement networking systems. As a higher level course, it will prepare the students to design, build and implement a network system. The course assumes that the student will have basic understanding of network requirements, network protocols, network architecture, security of network systems, selection on network technologies, engineering cost estimation, and project implementation. Laboratory projects will focus on a real world experience in networking planning and implementation. Prerequisites: EET 440 or ECS 208
(2,2) Credits: 3

SET 402 Software Applications in Statistical Analysis and Manufacturing Management
The objective of this course is to develop competencies in the application of software for gathering and analysis of information, and preparation of scientific, technological and management reports in such functions as engineering manufacturing, banking, pharmaceutical and regulatory control. Industry standard software such as SAS will be used for analysis and reporting. Prerequisites: MTH 110 and SET 310
(3,0) Credits: 3

SET 405 Software Applications in Manufacturing and Service
The objective of the course will be to develop skills and competencies to apply software for such service functions as quality management and finance, and human resources management in an enterprise. The primary focus will be to define, configure and apply software for service functions in manufacturing and service industries. Prerequisites: EET 440 or BCS 208
(3,0) Credits: 3

SET 410 Senior Project
This is a capstone course which will require the student to utilize the skills and competencies gained in the program to develop and implement real world projects. With the guidance of the instructor, students may address specific problems in a company or industry and develop solutions involving software applications. The skills and competencies gained in software applications, the student will be able to determine research methodologies, selection of a project setting limitations for a project, defining the problem conducting an industry study, establishing process flow for the configures system, going alive with the new system, turning over the control of the system, and providing maintenance and service support. Prerequisites: Senior Status and Departmental Approval.
(3,0) Credits: 3

EET 440 Data Communications and Networking
This course covers the basic concepts of networking and computer connectivity. Several network topologies and related media access techniques are explored. The rudiments of Data Communications and Open System Interconnection (OSI) are discussed in detail. Students will learn the components of a client server environment using the Novell’s NetWare/Intra NetWare. Certain protocols such as TCP/IP and S/UX/UX are also discussed. Laboratory experiments are designed to give students a hands on experience in Network administration, configuration and resource management. Completion of this course includes a final project related to the design of a local area network, complete with Layers I and II, as well as the Directory Tree Structure based on the netware. An oral presentation by each student of his/her project is required. Prerequisite(s): Knowledge of digital electronics; familiarity with a real time operating system; ability to program in a high level language.
(3,3) Credits: 4

EET 441 Advanced Networking
This course is a continuation of EET 440, Networking and Data Communications. The principles of Architecture Layering, Multiplexing and Encapsulation are discussed. TCP/IP, IPX, PP, ISDN and Frame Relay Protocols are covered. Network equipment such as repeaters, bridges router hubs and switches are studied in detail. Equipment examples are drawn from key vendors such as CISCO, 3COM and Cabletron. The laboratory portion of the course will concentrate on experiments and projects designed using CISCO Systems networking equipment, such as 2500 and 2600 series routers, 1900 and 2900 catalysts switches. The students will also learn how to design networks using VLANs on the above mentioned equipment.
(3,3) Credits: 4