BIO 109 - General Biology I
4 Cr.

This course represents the first semester of a two-semester study of topics in General Biology. Initial emphasis is placed on the chemistry of living organisms. This knowledge is applied to the second major area of study, the cell. Energy utilization, protein synthesis, cell structure, and general cellular metabolism will be discussed. The third major area of emphasis will be the study of the classification, structure, and function of representative members from the five major kingdoms of living organisms. Meets SUNY General Education requirement for Natural Sciences (NS)

Co-Requisites: BIO 109L

BIO 109L - General Biology Lab
0 Cr.

This is the required lab course associated with BIO 109. (See the BIO 109 course description for details.) Usually offered Fall, Spring and Summer.

Co-Requisites: BIO 109

BIO 110 - General Biology II
4 Cr.

This course represents the second semester of a two-semester study of topics in General Biology. Basic knowledge acquired in the first semester is applied to the study of the diverse structural and physiological adaptations of living organisms. Systems of support, movement, control, reproduction, internal transport, gas exchange, waste excretion, and nutrition will be discussed. Topics of genetics and evolution are presented as a final unit. Meets SUNY General Education requirement for Natural Sciences (NS)

Pre-Requisites: BIO 109
Co-Requisites: BIO 110L

BIO 110L - General Biology Lab
0 Cr.

This is a required lab course associated with BIO 110. (See the BIO 110 course description for details.) Usually offered Fall and Spring semesters

Pre-Requisites: BIO 109 Lecture and Lab
Co-Requisites: BIO 110
**BIO 136 - Contemporary Environmental Issues**  
3 Cr.

This course is an introduction to select principles of ecology associated with human impact on the biosphere. Local and global effects of human interaction will be studied with special attention paid to population growth, water and air pollution, land use, energy use, and atmospheric problems. Meets SUNY General Education requirement for Natural Sciences (NS) (Usually offered Fall and Spring semesters.)

**CIS 100 - Introduction to Computer Applications**  
3 Cr.

This course is an introduction to computer applications. Topics include an overview of personal computer hardware and software, Windows, and a variety of software applications (word processor, spreadsheet, database and presentation software) using a Windows environment. (Usually offered Fall, Spring, Summer I and Summer II.)

**DIG 102 - Interactive Media: Flash**  
3 Cr.

In this course students are introduced to the planning and production of interactive media. Students will learn how to integrate graphics, still images, text, animation, audio, and video into interactive media projects. Students will gain a thorough grounding in basic design and animation techniques using the multimedia authoring software: Adobe Flash. (Usually offered Fall and Spring semesters.)

**DRF 173 - Introduction to Computer Aided Drafting Design**  
2 Cr.

This course will introduce each student to the concepts and principles of engineering drawing preparation using a computer. Common methods to retrieve and store drawings as well as developing and editing drawings will be covered. All common 2D commands (basic and advanced) relating to engineering drawing are covered in depth and an introduction to 3D modeling will also be covered.

*Pre-Requisites: A basic knowledge of engineering drawing/drafting, such as MET 110, high school mechanical drawing (2 semesters minimum), or industrial experience.  
Co-Requisites: DRF173L*

**ENG 101 - Writing I**  
3 Cr.

This course, based on writing as a process as well as rhetorical principles, is designed to develop effective non-fiction prose. Students will learn the use of documentation within the Modern Language Association (MLA) format. They will use writing to promote critical thinking. Meets SUNY General Education requirement for Basic Communication (BC) (writing portion only) (Usually offered Fall, Spring, and Summer semesters.)

*Pre-Requisites: ENG 099, AAC 042, or waiver through testing*
**ENG 102 - Writing II & Introduction to Literature**  
3 Cr.

This course reinforces writing skills emphasized in ENG 101, Writing I; presents more sophisticated writing skills, not included in ENG 101; and introduces students to the study of literature. Students will use writing to promote critical thinking. (Usually offered Fall, Spring, and Summer semesters.)

*Pre-Requisites: ENG 101*

**FRE 203 - Intermediate French I**  
3 Cr.

Continued development of audio-lingual skills and review of French grammar. Improvement of reading skills through selected prose and writing assignments. Meets SUNY General Education requirement for Foreign Languages (FL) (Usually offered Fall semester.)

*Pre-Requisites: FRE 102 or permission of the instructor.*

**FRE 204 - Intermediate French II**  
3 Cr.

FRE 204 is sequential to FRE 203 and a continuation of the development of the audio-lingual skills and a review of the grammar. The course emphasizes the development of reading skills through selected short stories and serves also as an introduction to the fundamentals of composition. Meets SUNY General Education requirement for Foreign Languages (FL) (Usually offered Spring semester.)

*Pre-Requisites: FRE 203 or permission of the instructor.*

**GER 203 - Intermediate German I**  
3 Cr.

Continuing study of the language with a continuation of audio-lingual skills. There is a special emphasis on the student’s ability to differentiate and identify grammatical structure.

*Pre-Requisites: GER 102*

**GER 204 - Intermediate German II**  
3 Cr.

Continuation of the audio-lingual skills with an emphasis on the development of reading skills.

*Pre-Requisites: GER 203*
**HED 201 - Healthful Living**  
3 Cr.

A comprehensive overview of current health and wellness themes that will assist students in critical thinking and making well informed decisions regarding health related issues. Topic areas include drug misuse and abuse, nutrition and weight management, human sexuality, stress reduction, cancer prevention, cardiovascular disease and others. State mandated Child Abuse identification and Reporting and Safe Schools Against Violence in Education workshops will be made available in this course. (Usually offered Fall and Spring semesters.)

**MAT 116 - Pre-calculus Mathematics**  
4 Cr.

To prepare for MAT 120M, Calculus and Analytic Geometry I. Topics include an introduction to the theory of functions and transformations; polynomial, logarithmic, exponential and trigonometric functions and equations; complex numbers; DeMoivre’s Theorem and the Binomial Theorem. Meets SUNY General Education requirement for Mathematics (M)

*Pre-Requisites: MAT 111 or equivalent.*

**MAT 120 - Calculus and Analytic Geometry I**  
4 Cr.

The first of a three-semester sequence to present derivatives and integrals of basic functions. Topics include limits, rates of change, derivatives of algebraic and trigonometric functions with applications, integration of algebraic functions and trigonometric functions with applications. Meets SUNY General Education requirement for Mathematics (M) (Usually offered Fall and Spring semesters.)

*Pre-Requisites: MAT 116 or equivalent.*

**MAT 121 - Calculus and Analytic Geometry II**  
4 Cr.

The second of a three-semester sequence to present transcendental functions, methods of integration, sequences, infinite series, power series, parametric equations, and polar coordinates. Meets SUNY General Education requirement for Mathematics (M) (Usually offered Fall and Spring semesters.)

*Pre-Requisites: MAT 120 or equivalent*
**MAT 164 - Introduction to Statistics**
3 Cr.

Introduction to statistical concepts including descriptive statistics, basic probability rules, conditional probability, probability distributions, estimation of parameters, hypothesis testing using one or two samples, correlation and regression. Computer applications and simulations are done using MINITAB, EXCEL, or other tools of technology. Meets SUNY General Education requirement for Mathematics (M) (Usually offered Fall and Spring semesters.)

*Pre-Requisites: MAT 106 or MAT 110 or equivalent algebra background.*

**MET 110 - Engineering Drawing I**
2 Cr.

Basic lettering, orthographic projection, sectioning, dimensioning, pictorial drawing, fasteners, auxiliaries, and working drawings will be accomplished by use of freehand sketching instrument drawings and use of CADD. (Usually offered Fall and Spring semesters.)

*Pre-requisites that may be met concurrently: MAT 005*

**MUS 101 - Music Appreciation**
3 Cr.

This course is a general introduction to the musical styles and forms. Material is discussed in terms of the nature and aesthetics of music, the elements of music, musical instruments, and performing ensembles as it relates to the human experience from around the world. The ability to read musical notation is not necessary. The course is recommended for the non-music major or students without previous music experience. It presumes no prior music training. (Usually offered Fall and Spring semesters.)

**MUS 102 - Foundations of Music Theory**
3 Cr.

This course is an introductory course that presents the basics of musical notation. Topics covered include melodic and rhythmic notation, clefs, scales, key signatures, principles of rhythm and chord symbols. The ability to read music notation is the course content. The course is recommended for the non-music major or students without previous music experience. (Usually offered Fall and Spring semesters.)

**MUS 171 – Written Theory I**
3 Cr.

This course is an introduction to tonal harmony, including elements of pitch, rhythm, triads, voice leading, harmonic progression, form and analysis. (Usually offered in the Fall semester). Reserved for music majors or permission of Music Department Coordinator.
**PED 135 - Adventure Education**
1 Cr.

This is an activity course designed to encourage participants to develop greater self confidence and at the same time acquire a sense of trust and commitment to their classmates. Students are given the opportunity to test themselves against physical and emotional limits through exploration of a series of group and personal challenges to attain higher levels of performance. Experiences include initiatives, trust activities, team building experiences, and the low and high challenge ropes course. (Usually offered Fall and Spring semesters.)

**PHS 101 - Introduction Physical Science**
4 Cr.

The course is divided into three parts: mathematical computations used in basic science courses; physics: Newton’s Laws of Motion, work, energy, and levers. The remainder of the course is devoted to the basic laws of chemistry, atomic structure, periodic chart, nomenclature, chemical reactions and solution chemistry. A basic algebra based approach is taken in the physics and chemistry. Meets SUNY General Education requirement for Natural Sciences (NS)

*Pre-Requisites: MAT 002 or waiver through testing.*

**PHY 112 - Our Solar System**
1 Cr.

A modular course oriented specifically toward a fuller understanding of the members of our solar system. An in-depth study of the planets will be supplemented with the reasons for the habitability of our planet. An awareness on how to prevent self destruction and promote environmental protection of Earth is given. Meets SUNY General Education requirement for Natural Sciences (NS) (Usually offered Fall and Spring semesters.)

**PHY 113 - The Universe**
1 Cr.

A modular course which stresses an understanding of the evolutionary theories of the universe. Discussions will include such subjects as supernova, pulsars, nova, black holes, red shift, matter, anti-matter, and space-time. Meets SUNY General Education requirement for Natural Sciences (NS) (Usually offered Fall and Spring semesters.)

*Pre-Requisites: PHY 112 or permission of the instructor.*

**PHY 114 - Extraterrestrial Life**
1 Cr.

A modular course examining the possibility of the existence of life outside the Earth. Known life processes will be discussed with other possible processes relevant to existing conditions near other stars. Course principles will be applied to the investigation of extraterrestrial civilizations and possible modes of contact. Meets SUNY General Education requirement for Natural Sciences (NS) (Usually offered Fall and Spring semesters.)

*Pre-Requisites: PHY 112 or permission of the instructor.*
**PHY 131 - General Physics I**

4 Cr.

As a survey course, PHY 131 132 is a two semester, non calculus sequence. Topics include vectors, forces, acceleration, linear and circular motion, gravitation, energy, momentum, fluids, gases, liquids, solids and thermodynamics. Meets SUNY General Education requirement for Natural Sciences (NS) (Usually offered Spring semester.)

Pre-Requisites: MAT 111 or equivalent.
Co-Requisites: PHY131L

**PHY 131L - General Physics I Lab**

0 Cr.

This is the required lab course associated with PHY131. (See the PHY131 course description for details.) Usually offered Fall semester

Pre-Requisites: MAT 111 or equivalent
Co-Requisites: PHY131

**PHY 132 - General Physics II**

4 Cr.

Continuation of PHY 131, General Physics I. General topics include wave motion, light, optics, electricity, magnetism, atomic and nuclear physics. Meets SUNY General Education requirement for Natural Sciences (NS) (Usually offered Spring semester.)

Pre-Requisites: PHY 131
Co-Requisites: PHY132L

**PHY 132L - General Physics II Lab**

0 Cr.

This is the required lab course associated with PHY132 (See the PHY132 course description for details.) Usually offered Spring semester

Pre-Requisites: PHY 131
Co-Requisites: PHY 132

**PHY 171 - Calculus-Based Physics and Mechanics**

4 Cr.

The first of four calculus-based, general physics courses supporting the customary baccalaureate science or engineering degree requirement. The subjects covered in PHY 171 are centered on mechanical phenomena. Topics include measurement and estimation, the description of motion, vectors and vector algebra, Newton’s Laws of Motion, energy, momentum, rotational motion, static equilibrium, elasticity and harmonic motion. Meets SUNY General Education requirement for Natural Sciences (NS) (Usually offered Fall and Spring semesters.)

Pre-requisite that may be met concurrently: MAT 120
Co-Requisites: PHY171L
PHY 171L - Calculus-Based Physics and Mechanics Lab
0 Cr.

This is the required lab course associated with PHY171 (See the PHY171 course description for details.) Usually offered in the Fall and Spring semesters

Prerequisite that may be met concurrently: MAT 120
Co-Requisites: PHY171

PHY 172 - Calculus-Based Physics II
4 Cr.

The second of four calculus-based general physics courses supporting the customary baccalaureate science or engineering degree requirement. The subjects covered in PHY 172 are centered on electromagnetic phenomena. Topics include static electricity, fields and potentials, capacitance, resistance, DC circuits, RC circuits, magnetic forces and fields, induction, RL circuits, AC circuits, RLC circuits and Maxwell’s equations. Meets SUNY General Education requirement for Natural Sciences (NS) (Usually offered fall semester.)

Pre-Requisites: MAT 120 and PHY 171
Pre-requisite that may be met concurrently: MAT 121
Co-Requisites: PHY172L

PHY 172L - Calculus Based Physics II Lab
0 Cr.

This is the required lab course associated with PHY172 (See the PHY172 course description for details.) Usually offered Fall semester

Pre-Requisites: PHY 171 and MAT 120
Prerequisite that may be met concurrently: MAT 121
Co-Requisites: PHY172

PSC 101 - American Government
3 Cr.

Basic structure, functions, and processes of the American government at the national level. Concepts of constitutionalism, federalism, and civil liberties are analyzed through study of the U.S. Constitution and significant Supreme Court cases. Meets SUNY General Education requirement for Social Sciences (SS) (Usually offered Spring semester.)

Pre-Requisites: AAC 042 and ENG 099 or waiver through testing.
**SPA 203 - Intermediate Spanish I**
3 Cr.

SPA 203 focuses on the development of audiolingual skills and the review of Spanish grammar. The course serves also as a reinforcement of reading skills through selected prose. Meets SUNY General Education requirement for Foreign Languages (FL) (Usually offered Spring semester.)

*Pre-Requisites: SPA 102 or permission of the instructor.*

**SPA 204 - Intermediate Spanish II**
3 Cr.

SPA 204 is sequential to SPA 203, Intermediate Spanish I, and serves as continued development of audiolingual skills and review of Spanish grammar. The course will also provide students with an opportunity to improve their reading and writing skills through selected prose and writing assignments. Meets SUNY General Education requirement for Foreign Languages (FL) (Usually offered Spring semester.)

*Pre-Requisites: SPA 203 or permission of the instructor.*

**SPE 102 - Public Speaking**
3 Cr.

This course is devoted to developing effective public speaking skills. Students will be provided with opportunities to prepare and deliver different types of speeches (informative, persuasive, special occasion) in a variety of modes (manuscript, memorized, impromptu, extemporaneous). Special attention will be paid to the art of preparing and delivering speeches through the study of the techniques of good delivery and composition. Meets SUNY General Education requirement for Basic Communication (BC) (Usually offered Fall and Spring semesters.)

**TEC 110 - Introduction to Technical Calculations**
1 Cr.

An introduction to the handling of technical data. Scientific functions of the hand held calculator and basic use of the personal computer are covered. Topics include scientific notation, significant figures, and computation by means of the calculator and computer. Basic use of the Computer Operating System and electronic spreadsheets for both computation and plotting graphs are included. (Usually offered Fall and Spring semesters.)

*Pre-Requisites: MAT 005*
TEC 250 - Introduction to Robotics
2 Cr.

This course will introduce the fundamental concepts and characteristics of industrial robots. Topics such as robot architecture, kinematics and capabilities will be studied. Features of end effectors, programming methods of both servo and non-servo robots, typical applications and major manufacturers will also be considered. Laboratory sessions will involve “hands on” programming with teach pendants and personal computers and determination of typical robot operating parameters leading to the operation of work cells. (Usually offered Spring semester.)

Pre-Requisites: Elementary Algebra
Co-Requisites: TEC250L