EXPLANATION OF CREDIT

The allocation of credits to courses is based on New York State Department of Education regulations in higher education.

Generally, the formula is that one semester-hour of credit is awarded in a course meeting for 15 weeks for each hour of class or lecture for which considerable out-of-class preparation is required; or for a unit of two or three “laboratory,” “gym,” or “clinic” hours.

- **rec** (recitation) — the traditional recitation-discussion-seminar form.
- **lect** (lecture) — several sections have been combined into a single group in which the presentation is sometimes accompanied by a demonstration and audiovisual material.
- **lab** (laboratory) — the class meets in a specially equipped area where students may do individualized work in experimentation with instruments, tools and similar equipment
- **clin** (clinic) — supervised, individualized clinical experience in a hospital setting including group and individual instruction.

**Prerequisites** must be completed with a passing grade before the subsequent course may be taken.

**Corequisites** may be taken simultaneously or before a given course.

The College reserves the right to limit the number of students registered in any course, or to cancel any course for which there is insufficient enrollment, or to make any changes in prerequisites, corequisites, course descriptions, credit allocations, schedule and section offering in the academic year as it may deem necessary for the proper and efficient functioning of the College.

Students who place in ENG 01 and RDL 01 are allowed to register only for the following credit-bearing courses:

- ELC 11 (corequisite MTH 06; recommended for Electrical Technology students only)
- ELC 15 (corequisite MTH 05; recommended for Electrical Technology students only)
- GEO 10
- HIS 11
- HLT 91 and Physical Education courses
- KEY 11
- MEC 11 (by placement)
- CMS 10 (entry into course dependent upon speech screening)
- CMS 12 (not open to students simultaneously registered for any ESL courses)
- Art studio courses
- Music performance courses
- Language courses (Level 12 or above, by placement)

Students who place in ENG 02 or RDL 02 may also register for the following credit-bearing courses:

- ART 10 MUS 10
- ART 11 MUS 11
- ART 12 MUS 12
- CMS 11 PEA (activity courses)
- DAT 30 PHL 11
- ECO 11 POL 11
- ECO 12 PSY 11
- HIS 10 or 11 SOC 11
■ ACCOUNTING
Business and Information Systems Department

ACC 11  5 rec  4 cr
Fundamental Accounting I
Corequisite: ENG 02 or RDL 02 if required.

ACC 12  5 rec  4 cr
Fundamental Accounting II
Extension of the principles of accounting to partnerships and corporations.
Prerequisite: ACC 11.

ACC 13  5 rec  4 cr
Intermediate Accounting
Theory and problems of accounting applied to preparation of financial statements; problems of valuation; and income determination.
Prerequisite: ACC 12.

ACC 15  3 rec  1 lab  3 cr
Accounting Information Systems
Information systems and their relationship to the accounting function. Emphasis on interaction of accounting and information systems, application of information systems to financial/accounting management decisions, and control of these systems. A computerized accounting information package will be explored.
Prerequisite: ACC 12.

■ ANIMAL CARE AND MANAGEMENT
Program Coordinator: Dr. Chris Robinson
Department of Biology and Medical Laboratory Technology

ACM 11  3 rec  3 cr
Introduction to Animal Care and Management
This course will focus on animal diversity, including general characteristics, adaptations, and evolutionary history of classes and families, as well as the natural history of representative species; animal behavior, with an emphasis on how to apply the concepts of ethology to maintain animals in captivity; anatomy/physiology of mammals, birds, reptiles, amphibians, fish and invertebrates; animal care and management procedures, including feeding, recordkeeping, cleaning, animal husbandry, etc.; principles of zoo education and interpretation. Requires department permission.
Corequisite: ENG 02 or RDL 02 if required.

ACM 90  500 hours  6 cr
This will be a 500-hour hands-on experience for students who successfully complete the Animal Care and Management course. The internship will provide valuable opportunities through which students will be able to put into action practices they learned in the classroom. There will be two main internship tracks available. The first will focus on both basic procedures and specific applications relating to feeding and nutrition, behavioral enrichment, animal handling, animal housing, and sanitation procedures. The second will focus on zoo education and interpretation. Students who choose this track will learn how to develop lesson plans and educational activities for a range of student achievement levels, learn to use live animals in educational demonstrations, and assist zoo instructors in classes for a variety of audiences. Requires permission of Department Chairperson.
Prerequisite: ACM 11 with a grade of C+ or better.

■ ANTHROPOLOGY
Department of Social Sciences

ANT 11  3 rec  3 cr
Introduction to Anthropology
Development of human societies and cultures from early origins to present day. Touches all major fields of anthropology, such as physical anthropology, linguistics, and archaeology, but focuses on cultural anthropology. Issues of economics, politics, family structure and religion from an anthropological point of view.
Prerequisite or corequisite: ENG 02 or RDL 02 if required.

■ ART
Department of Art and Music

ART 10  2 rec  1 cr
Art Survey
Survey of art in selected historical periods of Western civilization. Note: Not open to students taking ART 11 or ART 12.
Corequisite: ENG 02 or RDL 02 if required.

ART 11  3 rec  3 cr
Introduction to Art
Survey of our artistic heritage from the classical period of Western civilization to Modern Art. Discussion of social and philosophical influences. Art museum visits.
Corequisite: ENG 02 or RDL 02 if required.

ART 12  3 rec  3 cr
Introduction to Western and Non-Western Cultures
Includes African, pre-Colombian and Oceanic; their relationship to the art of the Western world. (May be taken to fulfill ART 11 requirement.)
ART 15  4 studio  2 cr
Design Basics
Studio course introducing the principals of two-dimensional design and color. Experiments in line, value, texture, space, and illusions of volume and their applications to creative and dynamic composition will be applied to conceptual thinking and the development of problem solving skills for graphic design projects of increasing complexity.

ART 21  4 studio  2 cr
Drawing
Studio course to develop basic skills and concepts in drawing. Emphasis on drawing anatomy and portraits. Use of different mediums and techniques. Students draw from professional models.

ART 22  4 studio  2 cr
Painting
Studio course to develop basic skills and concepts in painting in oil and acrylics. Fundamentals of form, color, texture, and composition as applied to still life, landscape, portraits, figure studies, and abstraction. Development of student's personal style.

ART 32  4 studio  2 cr
Printmaking
Practical studio course in silkscreen printing and intaglio/relief printing. Basic printmaking techniques are covered with an emphasis on proper use and care of equipment. Primary focus is on the use of photo-sensitive methods. Students will be introduced to graphic arts printing techniques concepts including transparency of ink, separations, registration and editioning. Through museum and gallery visits, as well as library resources, students are made familiar with the developments in printmaking of both the past and present. Portfolio presentation is explained including proper mounting and matting methods and the care of fine arts graphics.

ART 41  4 rec  2 cr
Ceramics I

ART 42  4 rec  2 cr
Ceramics II
Building, decorating, glazing techniques. Emphasis on three dimensional design and craftsmanship.

ART 52  3 rec  3 cr
Oriental Art*

ART 55  3 rec  3 cr
Modern Art
Important movements in Modern Art, including Impressionism, Post-Impressionism, Expressionism, Cubism, Dada, Surrealism, Abstract Expressionism, Pop Art, Minimal Art, Conceptual Art and Modern Architecture. Lectures, films and visits to museums, art galleries, architectural monuments.

ART 56  3 lect  3 cr
Graphic and Digital Design History
This course will cover the development of graphic design from the Industrial Revolution to the 21st Century. New digital art forms such as web design, computer animation, motion graphics design, interactive multimedia and 3-D graphics will also be examined. Coursework will include exams, written reports, online research, and museum visits.

Prerequisites: ART 11 or by departmental permission.

ART 71  4 studio  2 cr
Photography
Basic photographic techniques as a creative medium; emphasis on composition and lighting; developing, printing and enlarging. Students provide their own cameras and materials.

ART 72  4 studio  2 cr
Digital Photography and Motion Graphics
This course will emphasize the basics of composition, lighting, color correction and output. Students will study composition and lighting both in the field and in a commercial studio setting. Students will also examine various methods of digital image presentation including the use of graphic and audio elements in time-based media. This course requires students to have access to a digital camera.

ART 79  4 studio  2 cr
Typographic Design
Hands-on typographic survey covering history of type, from the stone age to the electronic age. Course work will focus on creative exercises that will reinforce the understanding of type; its style, structure, measurement and its design applications. Students will use current page layout software as applied to typographic studies.

Pre/Corequisite: Art 15 or by departmental permission.

ART 81  4 studio  2 cr
Typography and Layout
Employing typographic and imaging skills, students will strive to create effective page layouts for print design. Conceptual and professional production skills will be emphasized utilizing current layout software.

Pre/Corequisite: Art 79, Typographic Design or by departmental permission.

ART 82  4 studio  2 cr
Illustration
Problems of making illustrations and the direct relationship between technique, concept and execution. Practical aesthetic problems involved in illustrating work done in class can be used in a portfolio. Students will prepare comps and finished art work ready for reproduction. Assignments teach the student to solve problems of interpretation for children’s books, fiction and non-fiction, newspapers and magazines.

Students are helped to develop their own styles. Exploration of these concepts on the computer.

Prerequisite: ART 21 or by departmental permission.

*Not offered on a regular basis. Course descriptions available upon request.
ART 83  Graphic Design Principles  
The application of 2D design and typography skills applied to problem-solving in visual communications scenarios. From symbol-making, logo design, print ads and posters, and signage systems, students will produce hand and computer generated professional quality work. Emphasis will be placed on the creative process. Studio skills as well as presentation skills will be explored.

ART 84  Digital Imaging  
A course concerned with Digital Imaging for Print, the World Wide Web and Multimedia. Students will experiment with scanned and self-generated images using industry-standard (currently Photoshop) imaging software. Integration with other applications will be a goal. The software programs' prodigious versatility will be applied to the merging and transformation of photographic images in creative and unexpected ways. Professional level skills in this area, vital to a graphic design professional will be emphasized.

ART 86  Digital Illustration  
Computer-based instruction exploring advanced topics in illustration using current industry standard drawing programs. Emphasis on conceptualization through finish and technical excellence. Finished class assignments will provide portfolio samples.

ART 87  Web Design  
Building upon skills acquired in previous computer graphics courses, this hands-on computer laboratory workshop focuses upon advanced software and design proficiency. Students will learn professional Web Design and Web Multimedia software. Projects will include various graphics for the web as well as the creation of an interactive website.

ART 88  Intro to Multimedia and Animation  
This course introduces the principles and aesthetics of multimedia design. It explores fundamental multimedia elements such as text, image, animation, sound, etc. within the context of time-based visual presentation. Focus will be on developing the understanding of 2D computer animation. Topics include storyboarding, rotoscoping, key frame animation and morphing. Students in this class will create short animations for the Internet.

ART 90  Graphic Design Project  
This course encompasses both the development of a multifaceted graphic design project and the production procedures necessary for projects to be printed professionally. Design projects will explore the creation of identity programs that will include multiple components. The interaction of design and production will be emphasized. Topics will include project management, understanding font utility programs and file preparation. How to produce reliable digital color proofs, create color separations and understanding color calibration will be covered.

ART 91  Design Portfolio  
A project based seminar wherein the development of professional portfolios, print and/or multimedia is the goal, along with job-seeking skills.
Pre/Corequisites: ART 81 or by departmental permission.

ART 93  Interactive Multimedia Design  
This course develops the understanding of how people interact with computers, and how to design multimedia presentation systems or structures that are meaningful, easy, quick, and productive. The technical tools of this digital art form will be introduced, with an emphasis on non-linear structures, usability conventions, information architecture, and interface and interaction design. Students will design and develop interactive multimedia presentations that creatively integrate text, images, animation, audio and programming, and construct interactive learning objects that simulate complex objects and information systems.
Prequisite: Art 88 or by departmental permission.

ART 95  Introduction to 3D Graphics and Animation  
This course provides introductory studio experience in 3D computer graphics and animation. Topics include 3D modeling, texture mapping, virtual lighting, virtual lens, virtual camera, and 3D animation. Through lectures, viewings, tutorials, and projects, students develop a multi-purpose skill set that can be used for innovative content creation, product visualization, space planning, virtual object animation, and multimedia integration.
Prequisite: Art 86 or by departmental permission.

ART 97  Multimedia Portfolio  
This is an advanced class in interactive multimedia design, offering supervised career planning, and a chance for students to explore their individual artistic directions. Aesthetic input and training in appropriate technical skills will be provided to help individual students improve their existing art-works and construct an effective and artistic interactive multimedia presentation.
Prequisite: Art 87 or by departmental permission.

 ■ ASTRONOMY  
Department of Physics and Technology

AST 11  Stellar Astronomy  
Early astronomy; astronomical coordinate systems; structure and evolution of the sun, stars and stellar systems; spectroscopy; the Milky Way and external galaxies; cosmological models and implications.
Prequisite: MTH 03, or permission of the department;
Corequisite: ENG 02 or RDL 02 if required.

AST 12  Planetary Astronomy  
History of astronomy. Structure of the universe; origin and evolution of the solar system including the sun, planets, and minor bodies; architecture of the solar system with emphasis on orbital motions, planetary surfaces, atmospheres and internal structures; the expanding universe.
Prequisite: ENG 02 or RDL; MTH 03 or equivalent.
### AUTOMOTIVE TECHNOLOGY

**Department of Physics and Technology**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Description</th>
</tr>
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</table>
| ACS 11 | 3 rec 6 lab 6 cr | **Engine (Internal Combustion)**
Operation service procedures, diagnostic methods of an internal combustion engine. An internal combustion engine will be completely disassembled, inspected, precision measured, repaired, reassembled and tuned up. |
| ACS 12 | 1 rec 4 lab 3 cr | **Brakes**
Construction, servicing and repair of both disc and drum brakes of the automobile. |
| ACS 13 | 2 rec 2 lab 3 cr | **Fuel Systems**
Fundamentals of design, operation and assembly of the automotive system, integrated into repair service and overhaul of the essential components of the fuel systems. |
| ACS 14 | 1 rec 4 lab 3 cr | **Manual Transmission and Rear Axle**
Operation and service procedures for the automotive manual transmission and rear axle. A manual transmission and rear axle will be completely disassembled, inspected and reassembled. |
| ACS 21 | 2 rec 4 lab 4 cr | **Front Ends**
Diagnostic and service procedure, inspection, repair and alignment of the automobile’s front end. The rear suspension system and steering gears will be developed and related to the front-end system. |
| ACS 22 | 1 rec 6 lab 4 cr | **Automatic Transmission**
Operation and service of most conventional automatic transmissions. An automatic transmission will be completely disassembled, inspected and reassembled. **Prerequisite:** ACS 14. |
| ACS 23 | 2 rec 4 lab 4 cr | **Heating and Air-Conditioning**
Heating and air-conditioning system of an automobile. Emphasis on trouble-shooting and servicing the climate control system (heating and air-conditioning). |
| ACS 24 | 2 rec 2 lab 3 cr | **Electrical Systems**
Operation, service and repair of automotive electrical starting, lighting, generating and ignition systems. |

### BIOLOGY

**Department of Biology and Medical Laboratory Technology**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Description</th>
</tr>
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</table>
| BIO 11 | 2 lect 4 lab 4 cr | **General Biology I**
Chemical basis of life; cellular structure, function and reproduction; photosynthesis and cell respiration; human anatomy and physiology; plant structure and function. **Prerequisite:** MTH 03 or MTH 05, RDL 02 and ENG 02 if required. |
| BIO 12 | 2 lect 4 lab 4 cr | **General Biology II**
Continuation of BIO 11 with emphasis on plant and animal development; Mendelian and molecular genetics, evolution, animal and plant diversity and ecology. **Prerequisite:** BIO 11. |
| BIO 15 | 2 lect 4 lab 4 cr | **Zoology**
The diversity of the animal kingdom with emphasis on ecology, behavior, phylogeny, with medical and economic implications for humanity. **Prerequisite:** BIO 11. |
| BIO 18 | 4 lect 4 cr | **Human Biology**
A physiological study of the skeletal, muscular, integumentary, digestive, nervous, circulatory, excretory, respiratory, endocrine and reproductive systems of the human body; special senses. **Prerequisite:** RDL 02 and ENG 02 if required. |
| BIO 21 | 3 lect 3 lab 4 cr | **The Human Body**
Anatomy and physiology of the integumentary, digestive, nervous, circulatory, excretory, respiratory, endocrine and reproductive systems of the human body; special senses. **Prerequisite:** RDL 02 and ENG 02 if required. |
| BIO 22 | 2 lect 2 cr | **Medical Terminology**
Acquaintance with medical concepts, medical terms and scientific principles; various ailments and diseases; tests used in their analyses; treatments and therapeutic techniques for alleviation and cure. Required for Medical Secretarial Assistants. **Prerequisite:** RDL 02 and ENG 02 if required. |
| BIO 23 | 3 lect 3 lab 4 cr | **Human Anatomy and Physiology I**
An integrated lab-lecture method for the study of the structure and function of the human organism. Includes basic chemistry, cellular anatomy and physiology, tissues, integumentary, skeletal, muscular, nervous and endocrine systems. **Required for Allied Health Career Programs.** **Prerequisite:** MTH 03 or MTH 05, RDL 02 and ENG 02 if required. |
| BIO 24 | 3 lect 3 lab 4 cr | **Human Anatomy and Physiology II**
An integrated lab-lecture method for the study of the structure and function of the human organism. Includes cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems. **Prerequisite:** BIO 23. **Required for health career students.** |
| BIO 28 | 3 lect 3 lab 4 cr | **Microbiology and Infection Control**
Introduction to microbial structure, function and reproduction. Introduces the medical aspects of bacteriology, mycology, parasitology, virology, serology, immunology, epidemiology, and infection control. **Required for Allied Health Career Programs.** **Prerequisites:** BIO 23 and BIO 24 or permission of department chairperson. |
BIO 43  
**Microbiology**
Introduction to basic microbiological concepts, including microbial structure, physiology, metabolism, genetics, growth and ecology; and applied microbiology.  
**Prerequisites:** BIO 12 or BIO 24 and CHM 18.

BIO 44 
**Diagnostic Microbiology**
Advanced study of microorganisms with emphasis on diagnostic techniques for identifying pathogens. Included are morphological, cultural, biochemical, immunological and serological methods, and antibiotic testing.  
**Prerequisites:** BIO 43.

BIO 46 
**Clinical Techniques for Medical Personnel I**
Introduction to the physician's office, medical records, measurement of vital signs, electrocardiograph, preparation of the exam room and medical instruments, x-ray and radiograph methods  
**Corequisites:** BIO 18 or BIO 21, and BIO 22.

BIO 47 
**Clinical Techniques for Medical Personnel II**
Clinical laboratory techniques for a physician's office laboratory including sterilization and disinfection techniques, analysis of blood, urine and microbiology specimens. Use and care of the microscope and other laboratory instruments.  
**Prerequisites:** BIO 46.

BIO 50 
**Biology, Bioethics and Law**
Basic concepts on structure and function of the human body in conjunction with legal definitions and decisions, and ethical interpretations concerning biological/medical technology. Course includes material on contraception and sterilization, abortion, genetics, DNA manipulations, artificial insemination, in vitro fertilization, surrogate motherhood, death and dying, human experimentation, organ transplantation.  
**Required for paralegal students:** elective in other curricula.  
**Prerequisites:** RDL 02 and ENG 02 if required.

BIO 52 
**Immunology**
Principles of humoral and cellular immunity. Immunological techniques for identification of infectious diseases and immune disorders; introduction to immunohematology (blood cell antigens) and tissue typing.  
**Prerequisites:** BIO 12 and CHM 18, or department approval.
**BIO 91** 2 lect 1 rec 3 cr  
Biomedical Research I: Simulated Research/Symposium  
Scientific method and diverse symposium experiences. Students learn how to review scientific literature, evaluate research papers, present papers, and design experiments. The symposium experience consists of visits to research laboratories, on-campus seminars with leading scientists and a national science conference.  
Prerequisite: Admission to the REAP Program.

**BIO 92** 300 hrs lab 3 cr  
Biomedical Research II: Participatory Research  
Students have the opportunity to be part of a research team by working with leading scientific researchers in well-known research laboratories.  
Prerequisite: BIO 91 and admission to the REAP Program.

**Exemption for MLT Courses**  
*Students who have acquired knowledge and skills in clinical work experience or through specialized training in the armed forces are eligible for exemption exams. After completing such exemption exams, students will be granted credit with grade and index value for the appropriate courses. For further information, the student should consult the department chairman prior to registration.*

**BOTANY**  
Department of Biology and Medical Laboratory Technology  
Enrollment in Botany is limited to students in the Ornamental Horticulture curriculum or with special permission of the department. Offered at the New York Botanical Garden. See curriculum advisor, Dr. Annette Opler.

**BUSINESS**  
Business and Information Systems Department

**BIS 12** 4 rec 3 cr  
Multimedia Theory and Applications for Business  
Provides a theoretical understanding of multimedia technologies and fundamentals of multimedia software design and development. Students produce multimedia packages in business applications and their areas of specialization.  
Corequisites: ENG 02 or RDL 02 if required; KEY 10 or equivalent skill level with permission of the department.

**BIS 13** 4 rec 3 cr  
Introduction to the Internet and Web Development  
Introduction to using the Internet and World Wide Web (WWW) for business and general use. Emphasis on Internet tools which include E-mail, Chat rooms, Listservs, newsgroups, and Gopher as applied to business. Students optimize use of the Internet by learning how to identify and access information resources on the WWW through browsing, navigating, searching, and retrieving business-related information. Design and development of business-related Web pages.  
Prerequisites: ENG 01 or RDL 02 if required; KEY 10 or equivalent skill level with permission of the department.
Students who have completed one year of chemistry in high school and plan to major in Engineering Science, Medical Laboratory Technology, Nursing, and other science curricula are required to take a placement examination. Students with an insufficient background in high school chemistry or students who fail the placement examination and wish to specialize in one of the above curricula are required to take CHM 02. This course is not intended for non-science Liberal Arts students.

BUS 41
Business Statistics
Introduction to statistical methods as a basis for decision-making and operations control in business, utilizing principles of probability, sampling error, estimation and the descriptive methods of frequency distribution correlation, index number and time series analysis. Application to data pertinent to business and economic problems in such areas as accounting controls, production and marketing.
Prerequisite: Three years of high school mathematics or MTH 06;
Corequisite: ENG 02 or RDL 02 if required.

BUS 51
Business Organization and Management
An introduction to basic managerial concepts and practices. The nature of organizations and their relationships with external forces (social, economic, legal/political, competitive, technological and global) are explored. Key management functions, including decision-making, planning, organizing, directing and controlling are examined. Analytical and hands-on skills are further developed by introducing students to the application of mathematical models in the solution of managerial problems.
Corequisite: ENG 02 or RDL 02 if required and MTH 05 if required.

BUS 52
Organizational Behavior
This course explores the impact of individuals, groups, organizational structure, and the external environment on human behavior within organizations. A managerial perspective is established by examining how organizational behavior concepts are applied to improve performance in the workplace. Topics discussed include organizational design, corporate culture, motivation and reward systems, leadership, group dynamics, and decision-making.
Prerequisite: BUS 51

BUS 53
International Management
This course introduces the student to concepts and techniques employed in managing multinational organizations. It provides a basic understanding of the challenges confronted by management and the knowledge needed to operate successfully in global markets. The impact of rapidly changing cultural, political, legal, technological, and competitive forces on key managerial functions is also examined.
Prerequisite: BUS 51.

CHEMISTRY
Department of Chemistry and Chemical Technology

CHM 02
Introduction to Chemistry*
Introduction to types of matter, elements, compound, formulas, equations, use of arithmetic for chemical problem-solving, nomenclature, atomic structure and chemical bonding. Basic laboratory skills.
Corequisites: MTH 03 or 05 and RDL 02 or by departmental approval.

CHM 10
Chemistry in Everyday Life
An elementary course for Liberal Arts and other non-science students which shows the significant role that chemistry plays in our everyday lives. Topics include, in addition to applications of basic principles, pollution and the environment, proteins, chemicals of food, poisons, toxins, drugs, chemicals and the mind. Laboratory provides laboratory experience and illustrates relevant ideas in the lecture. It fulfills the laboratory science requirement for business, education associate and liberal arts students.
Corequisites: ENG 02 or RDL 02 if required.
<table>
<thead>
<tr>
<th>COURSE</th>
<th>DESCRIPTIONS</th>
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<tbody>
<tr>
<td>CHM 11</td>
<td>General College Chemistry I**&lt;br&gt;Fundamental principles and theories of chemistry, aspects of atomic structure and bonding, chemical calculations, states of matter, solutions. Laboratory: chemical techniques and principles.</td>
</tr>
<tr>
<td>CHM 12</td>
<td>General College Chemistry II&lt;br&gt;Solutions, kinetics, equilibria, electrochemistry, properties of non-metallic and metallic elements, nuclear chemistry, organic chemistry. Laboratory: chemical techniques and principles, and qualitative analysis. (Chemistry and other science majors should take CHM 22 in the second semester. Engineering Science majors may choose either CHM 12 or CHM 22 in the second semester.)</td>
</tr>
<tr>
<td>CHM 13</td>
<td>Chemistry in Daily Living&lt;br&gt;An elementary chemistry course for students in a curriculum which requires only a 3-hour science course. The course shows the significant role that chemistry plays in our everyday lives. In addition to applications of basic principles, topics include pollution and the environment, proteins, chemicals of food, poisons, toxins drugs, chemicals and the mind.</td>
</tr>
<tr>
<td>CHM 17</td>
<td>Fundamentals of General Chemistry I&lt;br&gt;Introductory course in general chemistry, atomic theory, formulas and equations, electron configurations, periodic table, chemical bonding, molecular structure, calculations, gas, liquid and solid states, solutions. Laboratory exercises illustrate principles of course and laboratory techniques.</td>
</tr>
<tr>
<td>CHM 18</td>
<td>Fundamentals of General Chemistry II&lt;br&gt;Continuation of CHM 17. Ionic reactions; acid-base theories, pH, chemical equilibria, structure, nomenclature and properties of hydrocarbons, alcohols, ethers, carboxylic acids, esters, fats, lipids, amino acids, and proteins.</td>
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<tr>
<td>CHM 22</td>
<td>General Chemistry II with Qualitative Analysis&lt;br&gt;Emphasis on solutions, equilibria, acids and bases, ionization equilibria, solubility product, complexation, oxidation-reduction and survey of metallic and non-metallic elements, organic and nuclear chemistry. Laboratory: qualitative analysis of solutions; salts and alloys.</td>
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<tr>
<td>CHM 27</td>
<td>Principles of Laboratory Safety&lt;br&gt;Presents the basic concepts of laboratory safety. Topics covered include legal issues, chemical and biological hazards, storage, laboratory design, and emergency responses.</td>
</tr>
<tr>
<td>CHM 32</td>
<td>Organic Chemistry II&lt;br&gt;Organic Spectroscopy (IR, NMR, UV, etc.), electronic theory applied on conjugated and aromatic systems, physical and chemical properties of the main classes of organic molecules; aromatics, alcohols, aldehydes and ketones, acids, amines, amides, peptides, carbohydrates.</td>
</tr>
<tr>
<td>CHM 33</td>
<td>Quantitative Analysis&lt;br&gt;Theory and laboratory methods of quantitative chemical analysis with laboratory determinations employing gravimetric and titrimetric (volumetric) methods, including acid-base, precipitation and oxidation-reduction reactions; use of chelating agents and analytical instruments.</td>
</tr>
<tr>
<td>CHM 37</td>
<td>Quantitative Instrumental Analysis&lt;br&gt;Covers basic discussions of the theory, operation and analytical applications of spectroscopy and chromatography. This course begins to develop expertise in techniques involving the operation of many common laboratory instruments and how they are used in quantitative analysis with specific applications in the pharmaceutical field.</td>
</tr>
<tr>
<td>CHM 38</td>
<td>Computer Applications in Chemistry&lt;br&gt;Introduction to computer applications in chemistry including: ChemOffice, Excel, PowerPoint, Internet searches and research, and molecular modeling programs.</td>
</tr>
<tr>
<td>CHM 39</td>
<td>Foundations of Pharmaceutical Process Technology&lt;br&gt;Discusses the wide variety of products generated by the US pharmaceutical and chemical process industry; focuses on changing government regulations, environmental health and safety issues, and changing technologies. Provides knowledge of the chemical technician's role in the pharmaceutical and chemical process industry.</td>
</tr>
<tr>
<td>CHM 40</td>
<td>Pharmaceutical and Chemical Technology&lt;br&gt;Introduction to chemical processes and methods currently used in industry, including fluid flow, heat transfer, plant utilities, distillation, extractions, crystallization, filtration, drying, etc. Students will also investigate current topics and technology applications. Students choose a current method and write a comprehensive review for its use and applications. Some fieldwork investigations, library, or computer investigations may be required.</td>
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</table>

**Required for students in Engineering Science and other science curricula. This course is not intended for non-science Liberal Arts students.
**CMS 01  Basic Spoken English for the Non-Native Speaker**
Introduction to basic spoken English through the study of sounds, vocabulary, and grammar. Oral exercises and practice.

**Prerequisite:** Permission of department required.

**CMS 09  Speech Clinic**
Clinical program of speech therapy for organic and functional disorders such as lisp, stuttering and related articulatory difficulties. Students are assigned on the basis of Speech Placement Screening, diagnostic interview, or referral by department faculty. Required course for students where evaluation indicates need.

**CMS 10  Phonetics**
Study of contemporary American English through phonetic analysis; practice in broad and narrow transcription, using the International Phonetic Alphabet, and exercises designed to develop auditory and kinesthetic sensitivity to phonetic distinctions.

**CMS 11  Fundamentals of Interpersonal Communication**
Dynamics of communication through examination of theory and discussion. Designed to provide understanding of communicative processes; opportunities for each student to experiment with personal communicative activity.

**Prerequisites:** ENG 01 and RDL 01 if required; Corequisites: ENG 02 or ENG 10 or RDL 02 if required.

**CMS 12  Voice and Diction: Business and Professional Speech**
Study of voice and articulatory factors in effective speech communication, with special attention to individual needs through speech diagnosis, development of auditory, discrimination, and exercises geared to individual and group needs. Designed for the student who needs more effective speech communication for business and professional environments.

**Corequisite:** ENG 01.

**CMS 20  Public Speaking and Critical Listening**
Principles and practice of contemporary forms of public speech communication; informative, persuasive, inspirational, and entertaining; principles and practice of critical listening; analysis and evaluation of public communication.

**Prerequisites:** ENG 01 and RDL 01 if required; Corequisites: ENG 02 or ENG 10 or RDL 02 if required.

**CMS 22  Small Group Discussion**
Principles and practice of small group discussion; investigation and analysis of problems in group situations.

**Prerequisites:** ENG 01 and RDL 01 if required; Corequisites: ENG 02 or ENG 10 or RDL 02 if required.

**CMS 26  Oral Interpretation of Literature**
3 rec 3 cr

**CMS 41  The Theory of Language Development**
This course in the theory of language development includes study of phonological, morphological, semantic, syntactic, and pragmatic sequences and processes in speech and language acquisition as well as multicultural and multilingual language acquisition.

**Prerequisite:** CMS 11.

**CMS 60  Introduction to Mass Communication**
Survey of mass communication media, including radio, television, film, and print (press); the development, characteristics and uses of the media and their effects on the individual and the environment.

**Prerequisite:** CMS 11.

**CMS 61  History and Theory of Film**
An appreciation of the creation of film and the vocabulary of filmmaking. Close analysis of selected films from the beginning to the present with an eye toward the techniques of directing, editing, cinematography, lighting and sound. One movie a week viewed.

**Prerequisites:** ENG 01 and RDL 01 if required; Corequisites: ENG 02 or ENG 10 or RDL 02 if required.

**CMS 62  Beginning Film and Video Production**
Introduction of film video production. Opportunities for students to create narratives using film or video equipment. Emphasis is on the responsibility of the director both for the artistic conception and technical completion of a finished project. Fundamentals of screenwriting, storyboarding, cinematography, exposure, lighting, editing and sound design covered.

**Prerequisite:** CMS 61.

**CMS 68  Television Performing**
Provides training in performance and communication skills utilized in television production: announcing, interviewing, reporting. Practice in reading from a script, voice and diction, extemporaneous delivery, questioning, using teleprompters, microphone techniques, camera presence, movement and makeup.

**Prerequisite:** RDL 02, ENG 02.

**Corequisite:** CMS 11 or permission of the instructor.

**CMS 75  Acting I**
Introduction to basic acting problems of analyzing and creating a character through improvisation, pantomime theatre games, scene practice and analysis of scenes, culminating in presentation of a one-act play outside class assignments.

**Corequisite:** ENG 02 or RDL 02 if required.

*Not offered on a regular basis. Course descriptions available upon request.*
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMS 76</td>
<td>Acting II*</td>
<td>3 rec 3 cr</td>
<td>*Not offered on a regular basis. Course descriptions available upon request.</td>
</tr>
<tr>
<td>CMS 81</td>
<td>Seminar and Independent Study in Dramatic Arts with Field Projects</td>
<td>6 hrs field work/wk 3 cr</td>
<td>Elective for students who wish to work independently in some area of dramatic art. Independent work on an acceptable creative project with faculty supervision. Prerequisite: Permission of instructor.</td>
</tr>
<tr>
<td>CMT 10</td>
<td>Introduction to Television Technology</td>
<td>3 rec 3 cr</td>
<td>Provides students with a context and framework for the field of television technology. Technical aspects of media, especially television, are explored as they relate to the technician's role of equipment operator and production assistant. Prerequisites: ENG 01 and RDL 01. Corequisites: ENG 02 or RDL 02, if required.</td>
</tr>
<tr>
<td>CMT 12*</td>
<td>Small Studio Color Television</td>
<td>3 rec 3 cr</td>
<td>Theory and practice of typical studio color television systems, including camera operation, switching and other control systems, lighting, tape formats and recorders, and basic editing. Emphasis on production techniques (staging and setting, etc.) commonly used in institutional video and cable operations. Prerequisite: CMT 10.</td>
</tr>
<tr>
<td>CMT 14</td>
<td>Digital Video Effects and Presentational Graphics</td>
<td>2 rec 2 lab 3 cr</td>
<td>Familiarizes students with 2D and 3D digital video effects and the process of creating complex moving digitized images and animations as they relate to the video medium. In-depth training in current software and operation of presentational graphics systems used in corporate communications. Prerequisite: CMT 10.</td>
</tr>
<tr>
<td>CMT 23</td>
<td>Field Television Production</td>
<td>2 rec 2 lab 3 cr</td>
<td>Basic principles of operation of field television equipment such as field cameras, portable videocassette recorders, component systems, audio systems, portable lights, battery systems. Practice in field production techniques and the relationship of field production to post production. Prerequisite: CMT 12.</td>
</tr>
<tr>
<td>CMT 31</td>
<td>Sound Recording and Editing</td>
<td>3 rec 3 cr</td>
<td>Theory and practical hands-on experience in all phases of sound recording and editing as they apply to the production and postproduction of sound creation and design for television, radio, film, music production and the web. Prerequisite: CMT 10.</td>
</tr>
<tr>
<td>CMT 33</td>
<td>Video Editing I</td>
<td>2 rec 2 lab 3 cr</td>
<td>Provides theoretical and practical experience in video editing and postproduction. Fundamental editing principles, aesthetics and styles will form the basis of hands-on exercises utilizing linear and non-linear editing systems. Corequisites: CMT 12.</td>
</tr>
<tr>
<td>CMT 35</td>
<td>Video Editing II</td>
<td>2 rec 2 lab 3 cr</td>
<td>Provides theoretical and practical experience working with an industry-standard non-linear editing system. Skills developed include digitizing, editing, trimming and audio mixing, plus some basic principles of media management and system maintenance. Prerequisite: CMT 33.</td>
</tr>
<tr>
<td>CMT 51</td>
<td>Media Internship</td>
<td>Min of 140 hrs/sem 3 cr</td>
<td>The internship places a student in media facilities of a corporation, educational institution, hospital, government agency, private production house or any other setting providing meaningful, supervised on-the-job training in media production and operation. Students will be periodically evaluated by the job supervisor and Media Technology faculty. Upon completion of internship, the student is required to write a summary and critical analysis of the experience. Note: Employers usually expect a commitment of 15 or more hours a week. Students interested in a media project should take CMT 53, Media Projects Labs. Explanation: To acquire an internship that begins at the start of the semester, students need a current resume. Department permission is required to avoid having students who have a GPA under 2.0 take an internship. Prerequisites: Minimum of 45 curriculum credits, including ART 71, CMT 35, a completed resume and departmental permission.</td>
</tr>
<tr>
<td>CMT 53</td>
<td>Media Projects Lab</td>
<td>Min of 140 hrs/sem 3 cr</td>
<td>Students utilize knowledge and skills accumulated in the prerequisites to produce a meaningful, complete media project in one or a combination of principle media formats studied in the curriculum, including scripting, storyboarding and standard production processes. Completed project should be suitable for display in a job portfolio. All production materials are to be paid by the students. Explanation: Even though the A.A.S. in Media Technology is a terminal degree, some students go on to a four-year college that requires a production reel. CMT 53, Media Projects Lab, will enable students, under the guidance of professionals, to create either a reel or film/video suitable for use as a portfolio. Prerequisite: Minimum of 45 curriculum credits, including ART 71, CMT 33 and departmental permission.</td>
</tr>
<tr>
<td>CPL 11</td>
<td>Computer Literacy</td>
<td>2 lab 1 cr</td>
<td>Introduction to computer fundamentals for academic and professional use. Students will be introduced to the operational components of computers such as hardware, software, and use of the Windows Operating System. Students will receive hands-on experience using popular software and E-mail as well as acquire basic Internet skills necessary for research and term paper preparation. Ethical issues in computing will also be addressed. This course is open only to non-business majors. Prerequisites: ENG 01 or RDL 01 if required.</td>
</tr>
</tbody>
</table>
CSI 30 3 rec 3 cr
Discrete Mathematics I
Introduction to mathematical methods in computer science. Topics include basic concepts of mathematical logic, set theory, elementary number theory, counting methods and probability, and informal proof.
Prerequisites: MTH 06
Corequisites: ENG 02 and RDL 02 if required.

CSI 31 2 lect 2 lab 3 cr
Introduction to Computer Programming I
Introduction to computer systems and computer logic; techniques of structured programming; data representation; basic algorithm design and implementation in a modern structured language (e.g., C++); computer solutions to problems taken from engineering, science, physics, mathematics, business and other applications.
Prerequisites: CSI 30 and ENG 02 and RDL 02 if required.
Corequisites: MTH 31 or 14.

CSI 32 2 rec 2 lab 3 cr
Introduction to Computer Programming II
Continuation of CSI 31. Introduction to object-oriented programming including encapsulation, polymorphism, and inheritance; class templates; recursion and recursive analysis; analysis of algorithms, program style; documentation of programs; debugging; development of major projects.
Prerequisites: CSI 31 and ENG 02 and RDL 02 if required.

CSI 33 2 rec 2 lab 3 cr
Data Structures
Introduction to data structures and algorithms for developing solutions to various computational problems for sorting and searching large collections of data. Topics include container classes, pointers and dynamic arrays, linked lists, stacks, queues, and trees.
Prerequisites: CSI 32, and ENG 02 and RDL 02 if required.

CSI 35 2 rec 2 lab 3 cr
Discrete Mathematics II
Introduction to the theory and application of abstract mathematical structures, the design and analysis of algorithms modeling of mathematics and other disciplines. Topics selected from relations, partial orderings, graphs and trees, mathematical reasoning, and methods of proof.
Prerequisites: CSI 30, and ENG 02 and RDL 02 if required.

CWE 31 1 rec 2 cr
Cooperative Work Experience I
Under the supervision of the Career Development Director, students are placed in internships designed to provide them with supervised work experience in their respective majors. Students must have approval from their respective academic departments to enroll in the CWE course. Students enrolled in the CWE course must also complete 210 internship hours as part of their grades for the CWE course. All interns are expected to fulfill the requirements of their CWE instructors and approved work experience supervisors.
Prerequisite: Fully matriculated students who have completed 30 degree credits (45 credits for Paralegal Students) with an overall G.P.A. of 2.00 or permission from their respective academic department.

DAT 10 2 rec 2 lab 3 cr
Computer Fundamentals and Applications
Introduction to computers and their use in information processing. Topics include hardware and software concepts, elements of system analysis, system design and management information systems. Emphasis on computer usage, programming skills and use of application programs involving word processing, spreadsheets, and data base management.
Corequisites: RDL 02 or ENG 02 if required; MTH 03 or MTH 05.

DAT 30 2 lect 2 lab 3 cr
Introduction to Computer Fundamentals and Programming
Introduction to data processing equipment and operation; basic elements of electronic data processing, input, processing, storage, and output; flow-charting, numbering systems and business programming applications. Introduction to BASIC language programming in both a lecture and laboratory setting.
Corequisites: RDL 02 or ENG 02 if required; MTH 03 or MTH 05.

DAT 33 1 lect 2 lab 2 cr
Microcomputer Applications
Provides "hands-on" experience with microcomputers through use of an integrated software system with word processing, spreadsheet analysis, database management and graphics components.
Corequisite: RDL 01 or ENG 01 if required.
DAT 35 2 lect 2 lab 3 cr
Visual Basic Programming
This course will provide a foundation for writing Windows-based application programs that are event-driven with Graphical User Interface (GUI). Topics will include dialogs, menus, controls, scope of variables, data types, selection and iteration structures, objects and instances, MIDI, fonts and graphics, plus file I/O. Students will write and debug several programs using different business applications.
Prerequisite: DAT 10, DAT 30 or departmental approval.

DAT 36 2 lect 2 lab 3 cr
Microcomputer Spreadsheet Applications
The lab portion involves "hands on" training to design and implement financial and other applications. Includes development of personalized menus, use of MACRO capabilities, functions, and graphics. The lecture portion involves the business use of spreadsheets. Illustrations of business uses as well as case work will be addressed.
Prerequisite: DAT 10, DAT 30 or DAT 33 or departmental approval.

DAT 38 2 lect 2 lab 3 cr
Microcomputer Database Applications
The lab portion involves converting file design, simple and complex data entry, like sorting and indexing, editing and modifying databases, and report generation. The lecture portion involves the business use of databases. Illustrations of business uses as well as well as case work will be addressed.
Prerequisite: DAT 10, DAT 30 or DAT 33 or departmental approval.

DAT 47 2 lect 2 lab 3 cr
J AVA Programming
An introduction to Web-based application programming, using J AVA language, which is based in C/C++, but completely object-oriented and platform-independent, to create interactive/dynamic Web pages. Students familiar with the format and syntax of a programming language will develop applets designed to be executed over the internet within WEB browsers, as well as stand-alone applications.
Prerequisite: DAT 10 or DAT 30 or departmental approval.

DAT 48 2 rec 2 lab 3 cr
Advanced J AVA Programming
This course is a continuation of J AVA Programming (DAT 47). The Fundamentals of J AVA such as Syntax, Primitive Data Types and Operations, Control Structures, Methods and Arrays will be reviewed. Classes and Objected Strings, Class Inheritance and Interfaces, GUI Programming Applets, Exception Handling, Input/Output Multithreading are studied in detail and Data Structures are introduced.
Prerequisite: DAT 47 or departmental approval.

DAT 49 2 rec 2 lab 3 cr
UNIX Fundamentals
This course is an introduction to operating systems with particular emphasis on the use, management and operation of the UNIX operating system. Students will learn how to effectively integrate UNIX utilities and user commands within a networked multi-user environment.
Prerequisite: DAT 10 or DAT 30 or departmental approval.

ESE 11 2 lec 1 rec 3 lab 4 cr
Earth Systems Science: The Earth
Presents the scientific method in geology and basic concepts of geology. Topics covered include materials, structures and surface features of the earth, oceans, and the processes that have produced them.
Prerequisite: ENG 02, RDL 02 if required.
Corequisite: MTH 03.

ESE 12 2 lec 1 rec 3 lab 4 cr
Earth Systems Science: The Atmosphere
An introduction to the processes and phenomena of our atmosphere. Topics include clouds, sky color, storms, climates, Ice Ages, and the greenhouse effect. Students will also be introduced to the science of weather forecasting using the BCC weather station.
Prerequisite: ENG 02, RDL 02 if required.
Corequisite: MTH 03.

ESE 21 2 lec 1 rec 3 lab 4 cr
Earth Systems Science: The Environment
This course provides a look at the earth system as a whole. Emphasis will be on the interrelation among biological, geological, climatological and human systems on continental and global scales. The links among these systems will be illustrated by present day processes and by the geologic record of scaled events in Earth system history. The course will include computer-based exercises and will also rely on Internet resources. Projects, papers, and presentations will be required.
Prerequisite: ESE 11 or ESE 12.

ECO 11 3 rec 3 cr
Microeconomics
Nature of the market system via supply and demand; analysis of prices, costs and profits for various firms and markets. Applying economic theory to policy issues such as wage determination, discrimination, education, unionization, government intervention, rent control and employment of resources. (May be taken before or with ECO 12.)
Corequisite: ENG 02 or RDL 02 if required.

ECO 12 3 rec 3 cr
Macroeconomics
Analysis of economic growth and determination of domestic output, employment, and income; examining GDP, price index, the business cycle, unemployment, and theories/effects of inflation. Exploring differences between Classical and Keynesian Economics via consumption, savings, investment, and the interest rate. Evaluating government fiscal policy and monetary policy. Studying Federal Reserve System and role of money and banking. (May be taken before or with ECO 11.)
Corequisite: ENG 02 or RDL 02 if required.
EDU 10 3 rec 3 cr
Child Study–Birth to Grade 6
Designed to provide opportunities to analyze and apply theories and research findings to all educational aspects of development from birth through childhood; to examine multicultural, multilingual, inclusive settings and classroom management techniques; to plan educational activities for diverse populations and contrasting social and economic environments based on child study and learning theories; and to write and present a child case study. The use of technology is introduced as appropriate. Requires visits to early childhood and childhood learning settings with diverse socioeconomic populations in order to apply systematic observation techniques. The case study will be part of each student's academic portfolio.
Prerequisites: ENG 02 and RDL 02.
Prerequisite or Corequisite: PSY 11.

EDU 12 3 rec 3 cr
Contemporary Urban Education–Birth to Grade 6
Designed to study the structure of the American public education system with special emphasis on the bilingual, multicultural and special educational aspects of contemporary urban education at early childhood and childhood levels. Course includes historical overview of public education; topics focusing on reducing the widening achievement gap among diverse urban school populations; promoting equitable educational opportunities for minorities and school populations-at-risk with an emphasis on the structure of schools, and factors that promote more effective teaching and effective schools. The use of technology is introduced as appropriate. Requires visits to early childhood and childhood classrooms with diverse socioeconomic populations, and contributions to each student's academic portfolio.
Prerequisites: ENG 02 and RDL 02.

EDU 15 3 rec 3 cr
Reading and Other Language Arts for the Early Childhood and Elementary Years
Understanding how children acquire and develop reading and language skills; knowledge of language arts literature; understanding of psychological principles underlying language arts instruction; knowledge of instructional technologies for application to the elementary reading and language arts classroom.
Prerequisite: EDU 10.

EDU 16 3 rec 3 cr
Literacy in Early Childhood Education – Birth to Grade 2
Designed to provide an understanding of the multiple ways young children develop language and literacy; to review the psychological principles underlying current models in literacy instruction; to plan literacy activities to engage the learner in the use of word study, comprehension and problem solving strategies; to understand the interconnection of the family and the learning environment; and to develop an awareness of the various genres and the reading interests of children. Projects related to assessment of language and literacy development are assigned. The use of technology is introduced as appropriate. Requires visits to early childhood and childhood learning environments with diverse socioeconomic populations, and contributions to each student’s academic portfolio.
Prerequisite or Corequisite: EDU 10.

EDU 17 3 rec 3 cr
Literacy in Childhood Education – Grades 1-6
Designed to provide an understanding of the multiple ways children develop language and literacy; to review the psychological principles underlying current models in literacy instruction; to plan literacy activities to engage the learner in the use of word study, comprehension and problem solving strategies; to understand the interconnection of the family and the learning environment; and to develop an awareness of the various genres and the reading interests of children. Projects related to assessment of language and literacy development are assigned. The use of technology is introduced as appropriate. Requires visits to early childhood and childhood learning environments with diverse socioeconomic populations, and contributions to each student’s academic portfolio.
Prerequisite or Corequisite: EDU 10.

EDU 18 3 rec 3 cr
Literacy in a Spanish Bilingual Program
Designed to enable students to acquire strategies and knowledge of implementing the New York State and New York City learning and performance standards in the native and English language arts and in the acquisition of a second language. Competencies: Understanding how young children acquire and develop language through literature; knowledge of psychological principles underlying current standard-based instruction in language arts and English as a second language (ESL); knowledge of ESL instructional methods and materials; ability to apply literacy skills in a literature-based program; and the ability to apply observation and analysis skills to the development of critical thinking and language development in literature. The use of technology is introduced as appropriate. Requires visits to bilingual early childhood and childhood learning environments with diverse socioeconomic populations, and contributions to each student’s academic portfolio.
Prerequisites or Corequisites: EDU 10 and SPN 13.

EDU 24 3 rec 3 cr
Child Care Seminar *
Interaction among parents, staff, and children; historical and philosophical background; planning an educational program; physical environment of the classroom; instructional materials and activities; child and parent adjustment to a new school situation; handling negative child behavior.
Required for students interested in Child Care.
Prerequisite or Corequisite: EDU 10.
EDU 25 3 rec 3 cr
Child Care Seminar II**
Continuation of EDU 24. Play activities; devising activities to meet children's growth needs; involving parents in the school program; planning and conducting parent meetings; working as part of a group; evaluation of own performance and of class performance; child care services and resources; and knowledge of useful references.
Prerequisite: EDU 24.

EDU 26 3 rec 3 cr
Human Relations in Urban Schools
Norms, values, and roles; observation of human behavior; principles that govern human change; activities that aid social and emotional growth; effective principles and practices of communication through written messages, teacher-parent conferences, telephone calls, and group presentations; handling conflict and criticism; codes of ethics; and knowledge of useful references.
Prerequisite or Corequisite: EDU 10.

EDU 30 3 rec 3 cr
Nature and Needs of the Handicapped*
Legal definitions of categories of the handicapped; representative programs and approaches in teaching the handicapped; medical, psychological, and sociological factors associated with being handicapped and their educational implications; services and resources for the educational treatment of the handicapped; current issues; problems, and research regarding the handicapped.
Prerequisite or Corequisite: EDU 10.

EDU 31 3 rec 3 cr
Introduction to Learning Problems**
Diagnostic-prescriptive teaching; learning modalities; organization and management of the learning environment; materials and procedures; evaluation of learning activities; and knowledge of useful references.
Prerequisite: EDU 30.

EDU 40 3 rec 3 cr
Field Work Seminar—Birth to Grade 6
Individual and small-group teaching experiences under professional supervision in an accredited school or agency. Periodic meetings with BCC faculty supervisor. Students must demonstrate competence pertaining to general knowledge expected of those who completed the Education sequence; and be able to plan educational activities for culturally diverse populations and children with special needs. Students' dispositions and instructional strategies will be assessed. The use of technology is introduced as appropriate. Students will make contributions to their academic portfolio.
Prerequisites: EDU 10; EDU 12 or EDU 26.
Corequisite: All other education courses and permission of department.

EDU 46 3 rec 3 cr
Student Mentoring
A field-based high school drop-out prevention course. Students enrolled are mentors paired with high school students, the protégés. The role of mentors, interpersonal skills, basic teaching-learning principles, techniques and strategies for helping protégés develop positive attitudes towards education. Minimum of two-hour weekly meeting with protegé outside of class.
Prerequisites: Grade Point Average of 2.5 or higher; ENG 01, ENG 02, RDL 01, RDL 02, if required; permission of department.

EDU 50 3 rec 3 cr
Creativity and the Arts for the Early Childhood and Early Childhood Years
Designed to provide an understanding of the relationship between the growth of creativity in young children and the major theories of child development. Emphasis on the role of imagination, play, sensorial learning, and aesthetic experiences in classroom activities. Projects related to the implementation of instructional and assessment strategies are assigned. The use of technology is introduced as appropriate. Requires visits to early childhood and childhood classrooms with diverse socioeconomic populations, and contributions to each student's academic portfolio. Other field experiences may include visits to children's museums and/or other cultural arts venues in the New York Metropolitan area.
Prerequisite or Corequisite: EDU 10.

■ ELECTRICAL TECHNOLOGY
Department of Physics and Technology

ELC 11 4 rec 3 lab 4 cr
DC Circuit Analysis
Resistance: Ohm’s Law, Kirchhoff’s laws, networks with DC current and voltage sources, branch-current analysis, mesh and nodal analysis, superposition. Thevenin’s, Norton’s maximum power theorem, capacitance and inductance. Use of basic test instruments.
Corequisite: MTH 06.

ELC 13 2 lect 2 lab 3 cr
Computer Applications in Telecommunications
Introductory course in basic computer orientation and implementation of hardware and software applications in telecommunications. Students use various software packages to create documents, spreadsheets, graphs, databases and presentations with lectures, interactive learning and demonstrations. Laboratory exercises required.
Corequisite: MTH 10.

ELC 15 1 lect 2 lab 2 cr
Computer Applications in Technology
Introductory course in basic computer orientation and implementation of hardware and software applications in technology. Students will use various software packages to create documents, spreadsheets, graphs, databases and presentations. Students will utilize this knowledge to solve problems and transfer information via electronic media. Lectures, interactive learning and demonstrations will be employed. Laboratory exercises will be required.
Corequisite: MTH 05.
ELC 18  Computer Programming for Engineering Technology
Introduction to computer programming using a visual programming language. The student is introduced to the concepts of application development, user interface design, program development methodology, structured programming, and object-oriented programming. Projects relevant to electrical and electronic circuits are developed to emphasize areas of problem-solving methods, modeling, data analysis and graphing, and interfacing.
Prerequisites: ELC 15.
Corequisites: MTH 06.

ELC 21  AC Circuit Analysis
Sinusoidal waveform, phasor quantities, impedance, Kirchhoff’s laws, network theorems, power, frequency response of RC and RL circuits, and resonance. Laboratory hours complement class work.
Prerequisites: ELC 11.
Corequisites: MTH 13 and RDL 02 or ENG 02 if required.

ELC 25  Electronics I
In this course students are taught the characteristics of amplifiers using op-amps with respect to amplification, dB frequency response, and input and output impedance. Op-amp applications are introduced with emphasis on the uses of these devices in the telecommunications industry. Electrical, optical devices, power supplies, and switches are studied. The frequency response of passive networks and amplifiers is measured. Analysis by computer simulations is stressed.
Prerequisites: ELC 11 or ELC 31.

ELC 31  Electrical Circuits
In this course students learn to analyze DC and AC passive circuits using Ohm’s Law, Kirchhoff’s laws and superposition. RC and RL circuits are analyzed for impedance and phase angles. Troubleshooting, analysis by simulation software, and industry applications are stressed throughout.
Prerequisites: MTH 11 or MTH 13 or MTH 30, ELC 13.

ELC 35  Electronics II
Students practice the analysis and application of advanced electronic circuits as applied to the electronics and telecommunications industry. Topics include frequency response of active filters, oscillators; amplitude modulation, frequency modulations, phase locked loops; pulse modulation concepts; and introduction to television; theoretical and hands-on troubleshooting of test circuits, and analysis by computer simulation.
Prerequisites: ELC 25.

ELC 81  Electronic Communications
Generation and processing of signals, including modulation, frequency conversation; bandwidth, oscillators, and noise. Amplitude, frequency, phase modulators, demodulators, phase-locked loops transmission, digital communications, and phase-shift keying. Laboratory hours complement class work.
Prerequisites: ELC 35.
Corequisites: ELC 18, PHY 22, MTH 15.

ELC 94  Laser and Fiber Optic Communications
Trains students to understand fiber optic technology and to provide the necessary skill for handling, installing, and maintaining complete optical communication systems. Topics include principles of light and lasers, optical fiber and its properties, fiber fabrication and cable design, optical sources and the injection laser diode, photo detectors, modulation schemes for fiber optics, practical optical transmitters and receivers, installation and testing of fiber systems, troubleshooting of test circuits and analysis by computer simulation.
Prerequisites: PHY 22, ELC 35, ELC 81.
Corequisites: ELC 81.

ELC 96  Digital Systems I
This course presents topics in hardware and systems as used in the electronics and telecommunications industry. Electrical and digital circuits are explored. Binary codes and logic systems are discussed as they apply to electronic and telecommunications equipment. Students will explore hardware to the modular level. Students will simulate and demonstrate digital circuits.
Prerequisites: ELC 13 or ELC 15.
Corequisite: MTH 10 or MTH 13 or MTH 30.

ELC 97  Digital Systems II
Students will work with hardware and software installation and be introduced to personal computer fundamentals. Students will connect a personal computer to a network, and install and setup a printer. The course will cover managing and supporting Windows; configuring user related issues and customization; and learning how to maintain a computer and troubleshooting fundamentals.
Prerequisites: ELC 96.

ENGLISH Department of English

All courses offered by the English Department include composition. In courses providing a fourth conf/rec hour, the teacher will use the fourth hour for instructional purposes.

The CUNY/ACT Basic Skills Tests in Writing and Reading are required before registering for an English course.

A student who has completed the semester’s work but has failed the same noncredit course (e.g. ENG 01 or 02) twice, may choose not to take the same course a third time. The student may choose to report to the Department of English Office so that he or she may be placed in a rigorous tutorial program.

ENG 01  Developmental Writing I
Extensive writing practice in response to readings. Review and practice of basic principles of grammar and usage, with emphasis on sentence structure and various mechanical aspects of writing. Focus on writing problems such as sentence fragments, sentence misconstruction, lack of subject-verb agreement, faulty use of pronouns, misspellings, and inaccuracy in punctuation. Helps students write effective paragraphs and essays.
For students with a combined score of 5 or less on CUNY/ACT Writing Skills Assessment Test.
ENG 02 Developmental Writing II
Extensive writing practice in response to readings, with emphasis on paragraph development and unity. Students learn to develop paragraphs through styles such as narration, illustration, comparison-contrast, process, cause and effect, and argumentation. Helps the student to write effective paragraphs/essays in preparation for ENG 11. Includes review of grammar and usage. 
Prerequisite: ENG 01, if required, and for students with a combined score of 6 on the CUNY/ACT Writing Skills Assessment Test.

ENG 09 Writers' Workshop for ESL Students
Intensive review and practice of English. Development of increased proficiency in academic writing; paragraph and essay structure and grammar. In-depth reading program to enhance vocabulary and comprehension skills. 
Prerequisite: ESL 03, or placement on the ENG 09 level. Successful completion of this course is equivalent to successful completion of ENG 01.

ENG 10 Fundamentals of Composition and Rhetoric
Fundamental principles of expository organization and grammar that emphasize essay development, unity and clarity, utilizing various rhetorical styles; selected readings. Approximately nine compositions required, including practice ACTs, and one research paper with MLA documentation using library resources. Students must pass the ACT and complete the ENG 11 final exam. Students who pass ENG 10 are permitted to enroll in ENG 12 or above. Students who do not pass the CUNY/ACT Writing Skills Assessment Test cannot pass the course. 
Prerequisite: Combined score of 6 on the CUNY/ACT Writing Skills Assessment Test and a passing score on the CUNY/ACT Reading Skills Assessment Test; or with Chairperson's permission.

ENG 11 Composition and Rhetoric I
Fundamental principles of organization and rhetoric; practice in expository writing; selected readings, mainly non-fiction; approximately eight papers required, including one research paper with MLA documentation using library resources. 
Prerequisite: Passing scores on both the CUNY/ACT Writing Skills Assessment Test and CUNY/ACT Reading Skills Assessment Test.

ENG 12 Composition and Rhetoric II
Study and application of the principles of organization, rhetoric, and literary analysis; expository writing and research based on thematically linked readings; development of critical thinking. Research paper with MLA documentation required. 
Prerequisite: ENG 10 or ENG 11. It is highly recommended that Liberal Arts students take ENG 12 before any other English elective.

ENG 14 Written Composition and Prose Fiction
Continued emphasis on the writing of clear, effective expository prose based on readings in short stories and novels. Research paper required. 
Prerequisite: ENG 11.
Environmental and Occupational Regulations
Introduction to Environmental Health

Prerequisite: ENV 11.

Field Study in the Environment
The course teaches students how to become field technicians which enables them to conduct site evaluations, on-site sampling and site remediation in compliance with EPA regulations. Students are also trained in health and safety procedures for hazardous waste operations.

Prerequisites: ENV 11, ENV 12.

Environmental Methods of Analysis
This course includes lectures demonstrations, hands-on laboratory experiments with the equipment and instruments commonly used for air, soil and water analysis to determine levels of pollution.

Prerequisites: CHM 18, ENV 11.

Environmental and Occupational Toxicology
Introduction to principles of toxicology with emphasis on environmental and occupational health. Provides necessary background to understand the health effects of toxic waste and environmental pollutants.

Prerequisites: BIO 12, CHM 18 or CHM 22, ENV 11.

Environmental Internship
Weekly seminar that integrates the fieldwork experience of students doing a supervised internship at various public and private environmental agencies, industrial companies and water treatment/waste management plants.

Prerequisites: ENV 11, ENV 12 and permission of Environmental Technology Program Administration.

Water Chemistry and Pollution
This course introduces students to the application of the principles of inorganic, physical and dilute solution equilibrium chemistry to aquatic systems, both in the aquatic environment and in water and wastewater treatment.

Prerequisites: CHM 18 or CHM 22.

Atmospheric Chemistry and Pollution
This course presents a concise, clear review of the fundamental aspects of atmospheric chemistry. It reviews our basic understanding of the chemistry of the earth’s atmosphere and discusses current environmental issues, including air pollution, acid rain, the ozone hole, and global climate change.

Prerequisites: CHM 18 or CHM 22.

FIN 31
Principles of Finance
American financial system; public and private financial institutions; financial problems of industrial and commercial firms. Procedures of business, foreign trade, and consumer financing; governmental policies and their effects on economic activities.

Corequisite: ENG 02 or RDL 02 if required.
FLORISTRY
Department of Biology and Medical Laboratory Technology

Enrollment in Floristry is limited to students in the Ornamental Horticulture curriculum with special permission of the department. Offered at the New York Botanical Garden. See curriculum advisor, Ms. Rebecca Araya.

FRENCH
Department of Modern Languages

FRN 11
Beginning French I
A conversation course that will enable the student to understand, read, write and speak simple everyday French. Audio laboratory practice.

FRN 12
Beginning French II
Continuation of FRN 11
Prerequisite: FRN 11 or placement test.

FRN 13
Intermediate French
Continuation of FRN 12.
Prerequisite: FRN 12 or placement test.

FRN 21
Language and Civilization of France*

* Not offered on a regular basis. Course description available upon request.

GARDENING
Department of Biology and Medical Laboratory Technology

Enrollment in Gardening is limited to students in the Ornamental Horticulture curriculum or with special permission of the department. Offered at the New York Botanical Garden. See curriculum advisor, Ms. Rebecca Araya.

GEOGRAPHY
Department of History

GEO 10
Introduction to Human Geography
Introduces key geographical concepts, both cultural and physical. Considers how such geographic factors as location, landforms, climate, soil, and natural resources have shaped cultures and civilizations, and the role played by people in gradually altering their environments. Audiovisual materials such as maps, photographs, slides, and films are used extensively.
Corequisites: RDL 01 or ENG 01 if required.

GEO 20
The Americas: Cultures in Comparison and Contrast
Survey of the cultural landscape of the Americas, meeting place for the cultures of five continents. Representative examples of Amerindian, African, Asian and European cultural patterns in the context of their geographical settings.
Corequisites: ENG 02 or RDL 02, if required.

HEALTH
Department of Health, Physical Education and Wellness

HLT 90
Health and Aging
3 lec 3 cr
This course provides an examination of health promotion, health management and health care in the elder years. It explores the interrelationship between the physiological, psychological, social, economic, and cultural dimensions of aging.
Prerequisite: HLT 91

HLT 91
Critical Issues in Health
2 rec 2 cr
Intended to develop and encourage critical judgment in vital areas of health: mental health, dependencies, human sexuality and nutrition.
Corequisite: ENG 01 or RDL 01 if required.

HLT 92
Drugs, Society and Human Behavior
3 rec 3 cr
Various aspects of drug use and abuse are explored—pharmacological, historical, legal and psychosocial. Emphasis on the roles of the individual and society in dealing with current issues.
Prerequisite: HLT 91.
HLT 93  Human Sexuality  3 rec  3 cr
Consideration of physical, sociological, and psychological aspects of human sexuality with emphasis on development of critical judgment in addressing ethical issues.
Prerequisite: HLT 91.

HLT 94  Human Nutrition  3 rec  3 cr
Introduction to essentials of nutrition education and the relationship of food to the student's personal goals and life experiences. Students-as-consumers find their choices and responsibilities emphasized by classroom experiments, self-examination and experiential learning. Weight control, changing food requirements in the life cycle, special diets, food labeling, additives, food economics in relationship to health are included.
Prerequisite: HLT 91 and/or permission of instructor.

HLT 96  Health Education for Parenting  3 rec  3 cr
Provides health care information as it relates to child development. Provides parents and others who work with children with resources and coping skills needed to raise a healthy child and to nurture the family unit.
Prerequisite: HLT 91.

HLT 97  Field Work in Community Health Resources  1 rec  5 hrs field work  3 cr
Provides students with firsthand knowledge of the community, its health problems and the forces impacting on them. Offers an opportunity to become involved in identifying and addressing problems.
Prerequisite: HLT 91 and/or permission of instructor.

HLT 98  Community Health Resources for Child Care Workers  1 rec  2 hrs field work  3 cr
Seminar in community health resources for child care workers. Students use their job placement as field work experience and keep weekly logs.

HLT 99  Health of the Nation  2 rec  2 cr
Provides an examination of the health status of different populations in the United States. Concepts of epidemiology, health promotion and disease prevention are discussed. The characteristics of special populations are addressed as are some of the major threats to the health, safety and welfare of individuals in society.
Prerequisite: ENG 01 or RDL 01.

HCM 12  Hospital Organization and Management  3 rec  3 cr
Overview of management and organization theory with applications to health care settings. Examines conceptual, technical, and human skills as they relate to the management of complex health care institutions.
Prerequisites or corequisites: BUS 51, HCM 11 and satisfactory completion of 30 credits.

■ HISTORY
Department of History

HIS 10  History of the Modern World  3 rec  3 cr
Exploration of outstanding political, intellectual, philosophical, social and economic trends, movements and events from mid-18th century to present. Analysis of forces that have shaped the modern world.
Corequisite: RDL 02 or ENG 02 if required.

HIS 11  Introduction to the Modern World  4 rec  3 cr
This course is identical in academic content and in assessment criteria to HIS 10, History of the Modern World, but adds a fourth compensatory hour to allow the instructor to work closely with students to assist them in developing a conceptual framework, effective note-taking techniques and written self-expression. Additional exercises and assignments will be used to consolidate knowledge and learning skills. This course will be opened only to students in ENG 01 and RDL 01. Class size will be limited to 30.
Corequisite: ENG 01 or ENG 09 or RDL 01.

Either HIS 10 or 11 – identical courses in different formats – is a prerequisite for all history courses.

HIS 13  History of the Ancient World  3 rec  3 cr
Four major River Valley civilizations—Egypt, Mesopotamia, India, China; examination of the florescence and decline of Greek and Roman civilizations. Focus on significant achievements of each people, assessing their impact on contemporary cultures as well as their legacy to ours. Readings from religious texts, poetry, drama and philosophy.
Prerequisite: HIS 10 or 11.

HIS 14  Medieval History  3 rec  3 cr
Effects of major ideas, social and economic changes, political concepts and their impacts upon the society of the West during the Middle Ages. Emphasis on interaction of these aspects within the cultural context of medieval Europe.
Prerequisite: HIS 10 or 11.

HIS 15  Intellectual and Social History of Modern Europe  3 rec  3 cr
Effects of major ideas in Western society from the 18th century in their political and cultural context. The revolutionary dynamic in democracy, romanticism and conservatism, changing situation of religion, role of women in modern society, socialism in 19th and communism in 20th centuries, interaction between philosophy and politics extending from idealism to existentialism, class conflict and social stability, racism and egalitarianism, scientism and irrationalism.
Prerequisite: HIS 10 or 11.
HIS 20  3 rec  3 cr
The American Nation: The Political & Social Development of a People
Selected topics in American History raising issues related to values, ethics and morality. Ranging from the colonial period to the contemporary era, this course examines major concerns of the American people throughout their history and illustrates how ethical concerns persist throughout American History.
Prerequisite: HIS 10 or 11.

HIS 23  3 rec  3 cr
Social and Intellectual History of Modern America
Fundamental concepts of the American experience that permeate our lives today, including puritanism, class consciousness, prejudice, violence, feminism, pragmatism.
Prerequisite: HIS 10 or 11.

HIS 24  3 rec  3 cr
The History of American Foreign Relations
Major developments in the foreign relations of the U.S., from the American Revolution to Vietnam, and their domestic and international effects. Emphasis on the policies of this century; evolution of the republic into a world power and the consequent tensions and crises. Origins and progress of efforts at international cooperation and peace.
Prerequisite: HIS 10 or 11.

HIS 25  3 rec  3 cr
The Third World and the West: History of Modern Imperialism and Colonialism
Survey of the world scene since 1870, especially in the building of colonial empires in Africa, Asia and Latin America; the rivalries among the imperialist powers; the relationship of imperialism to World Wars I and II; the decline of colonialism; the rise of Soviet and Communist Chinese imperialism.
Prerequisite: HIS 10 or 11.

HIS 27  3 rec  3 cr
Modern History of the Far East
China, Japan and Korea in the modern period; political and cultural institutions; structure of oriental societies; advances of the West and the effect of imperialism; industrialism, agrarian reforms, Communism; problems of the post-World War II period.
Prerequisite: HIS 10 or 11.

HIS 28  3 rec  3 cr
Women: The Historical Perspective
The changing status of, and attitudes towards women from antiquity to 21st century America. A variety of historical materials are used to assess how women themselves and the image of women have changed. Analysis in historical perspective of feminine achievement and the dynamics of undertakings yet ahead.
Prerequisite: HIS 10 or 11.

HIS 31  3 rec  3 cr
Modern Latin American History
Historical development of the Latin American area through the 19th and 21st centuries.
Prerequisite: HIS 10 or 11.

HIS 35  3 rec  3 cr
History of Africa
Multidiscipline approach to the history of Africa; ancient and medieval African societies, era of slavery, geographic discovery, missionary contact, imperialism and emergence of modern nationalism; the era of independence.
Prerequisite: HIS 10 or 11.

HIS 37  3 rec  3 cr
African-American History
The African experience; development and abolition of slavery in America, reconstruction after Civil War; migration out of the South; manifold consequences of urban relocation; Black education, church and arts; writing of Black Americans including Frederick Douglass and Franklin Frazier.
Prerequisite: HIS 10 or 11.

HIS 39  3 rec  3 cr
History of the Caribbean
Political, economic, social and cultural history of Puerto Rico, Cuba, Dominican Republic and Haiti from Spanish discovery to present. Emphasis on Puerto Rican contributions to culture and society of the Caribbean area and the United States.
Prerequisite: HIS 10 or 11.

HIS 51  3 rec  3 cr
History of the City of New York
Political, economic and social history of New York City from its Dutch origins to the present; consideration of the City's crucial role in creating modern urban America.
Prerequisite: HIS 10 or 11.

HSC 10  3 rec  3 cr
Human Services and Social Welfare Institutions
Introduces the student to the foundations and influences of social welfare policy and the human services movement. Social welfare institutions and societal response to human needs will be examined. The course will discuss the influences of political, social and cultural factors upon past and present approaches to meeting the needs of individuals, families, groups, and communities.
Corequisites: ENG 02 or RDL 02 if required, and PSY 11 or SOC 11.
HSC 91  2 rec  14 hrs field work  3 cr
Field Work and Seminar in Human Services I
Prerequisites: PSY 11, SOC 11, HSC 10 and permission of department.

HSC 92  2 rec  14 hrs field work  3 cr
Field Work and Seminar in Human Services II
Supervised field work at a community social agency to provide practical human service skill development in the diagnosis, treatment and evaluation of individual, family, group and institutional problems. Weekly seminars to assure that skills and values are being appropriately integrated.
Prerequisite: HSC 91 and permission of department.

HSC 93  1 rec  2 hrs field work  1.5 cr
Issues in Human Services for Child Care Workers I

HSC 94  1 rec  2 hrs field work  1.5 cr
Issues in Human Services for Child Care Workers II
Weekly seminar that integrates the field work experience of students doing field work in state-approved child care social/health agencies with the academic study of Child and Adolescent Developmental problems. This seminar assures that skills and values are being appropriately integrated.
Prerequisite: HSC 91 or permission of department.

**INDEPENDENT STUDIES***
Office of Academic Affairs

IND 11, 12, 13; 21, 22, 23; 31, 32, 33  1-3 cr
Independent Study in a Specific Discipline
For students who wish to pursue a problem of special interest. Students will devise projects that transcend traditional departmental offerings. Activities to be pursued and outside involvements, if any, are arranged in cooperation with the coordinator. Reports or other evaluative instruments required. For elective credit only. Maximum of 6 credits may be earned in Independent or Interdisciplinary Study or combination of both.
Prerequisites: ENG 11, the successful completion of 30 college credits with a general cumulative index of 2.0 and 3.0 within the discipline or permission of the department chairperson.

INT 11, 12, 13; 21, 22, 23; 32, 33  1-3 cr
Interdisciplinary Independent Study
Designed for students who wish to participate in an interdisciplinary project of their own planning. Supervised projects and studies combine subject areas. Students arrange their own activities or agency involvements with course coordinator. Students are allowed maximum of 6 credits in either Independent or Interdisciplinary Study or a combination of both. (30 hours of work = 1 credit). For elective credits only.
Prerequisite: ENG 11, the successful completion of 30 college credits with cumulative index of 2.0, and permission of the department chairperson.

* Course number for IND and INT: first number indicates number of times a student has enrolled in the course; second number indicates credit weight. Example: number 13 means the student has enrolled for the first time and is earning three credits.

**ITALIAN**
Department of Modern Languages

ITAL 11  4 rec  4 cr
Beginning Italian I
Introduction to Italian language; conversation; reading of simple texts; dictation. Audio laboratory practice.

ITAL 12  4 rec  4 cr
Beginning Italian II
Continuation of ITAL 11. Language structure; reading of elementary literary texts; dictation.
Prerequisite: ITAL 11 or placement test.

ITAL 13  4 rec  4 cr
Intermediate Italian
Advanced language structures; conversation reading; translation and discussion of modern texts; composition.
Prerequisite: ITAL 12 or placement test.

**KEYBOARDING**
Business and Information Systems Department

KEY 10  2 rec  1 cr
Keyboarding for Computers
Introduction to keyboarding through classroom instruction and laboratory practice. Emphasis is placed on speed and accuracy in keying alpha/numeric text. Students are expected to achieve a minimum speed of 20 words per minute.

KEY 11  5 rec  2 cr
Document Formatting and Speed Development
This course is designed to increase speed and accuracy and develop proofreading skills. Emphasis is placed on the proper formatting and production of business correspondence (memos, letters, tables, and reports) from straight and rough draft copy. Students are expected to achieve a minimum speed of 30 words per minute.
Prerequisite: KEY 10 or department permission.
Corequisites: ENG 01 or RDL 01 if required

KEY 12  4 rec  2 cr
Advanced Document Production
This course is designed to enable students to produce more complex business documents using decision-making skills to determine content and formatting. Students are expected to achieve a minimum speed of 40 words per minute. Students will be able to demonstrate proficiency in producing high-quality business documents.
Prerequisite: KEY 11 or department permission.
Corequisites: ENG 02 or RDL 02 if required

**LANDSCAPE DESIGN**
Department of Biology and Medical Laboratory Technology

Enrollment in Landscape Design is limited to students in the Ornamental Horticulture curriculum or with special permission of the department. Offered at the New York Botanical Garden. See curriculum advisor, Ms. Rebecca Araya.
<table>
<thead>
<tr>
<th>COURSE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>LAW 17</td>
<td>Introduction to Paralegal Studies</td>
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<tr>
<td>LAW 19</td>
<td>Introduction to Law Office Management and Computers</td>
</tr>
<tr>
<td>LAW 41</td>
<td>Business Law</td>
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<td>LAW 44</td>
<td>Medical Law</td>
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<td>LAW 47</td>
<td>Civil Procedure</td>
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<td>LAW 52</td>
<td>Business Organizations</td>
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<td>LAW 62</td>
<td>Family Law</td>
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<td>LAW 63</td>
<td>Law for Security Personnel</td>
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<tr>
<td>LAW 65</td>
<td>Criminal Law and Procedures</td>
</tr>
<tr>
<td>LAW 72</td>
<td>Real Property</td>
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</tbody>
</table>

**Prerequisites:**
- ENG 02 or RDL 02 if required.
- LAW 17.
- ENG 02 or RDL 02 if required.
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**Corequisites:**
- Registration only by department or placement.
- ENG 02 or RDL 02 if required.
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- LAW 17.
- ENG 02 or RDL 02 if required.
- POL 11.
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>Corequisites</th>
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<tbody>
<tr>
<td>LAW 77</td>
<td>Immigration Law</td>
<td>3 rec</td>
<td>ENG 02 or RDL 02 if required.</td>
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<td></td>
<td>Hands-on course dealing with concepts and</td>
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<td>techniques of immigration law. Procedures</td>
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<td>for preparation of immigrant and non-immigrant visa applications; skills necessary to assist immigrants who seek asylum, citizenship, naturalization or employment, or who face exclusion or deportation proceedings. Emphasis on the practice of immigration law from perspective of a paralegal.</td>
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<tr>
<td>LAW 82</td>
<td>Insurance and Torts</td>
<td>3 rec</td>
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<td>Survey of the law of insurance and the law of torts, especially as they relate to each other: nature and types of insurance, indemnity and subrogation; the insurance contract; defenses against payment to the insured; government regulations; tort liability; intentional torts; negligent torts, litigation; drafting and research practice; functions of the lawyer and paralegal assistant.</td>
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<td>Corequisite: ENG 02 or RDL 02 if required.</td>
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<tr>
<td>LAW 89</td>
<td>Legal Advocacy</td>
<td>3 rec</td>
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<td>Administrative law and advocacy, agency advocacy, preparation and conduct of administrative hearings, due process rights, and basic of evidence. Procedural rights in public benefit entitlement programs and the rights of the physically and mentally handicapped and the elderly; also procedural rights in housing programs and overview of landlord and tenant law; administrative advocacy and trial advocacy.</td>
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<td>Corequisite: ENG 02 or RDL 02 if required.</td>
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<tr>
<td>LAW 91</td>
<td>Landlord/Tenant Advocacy</td>
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<td>This hands on course deals with concepts and techniques used in Housing Court. Students learn strategies for representing tenants against the New York City Housing Authority, rent stabilization and rent control laws and the Jiggetts Preliminary Relief System. Conduct research in housing and welfare law; develop direct and cross-examination skills.</td>
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<td></td>
<td>Prerequisites: LAW 17 and LAW 47; completion of 30 credits, a C+ average and permission from director of the program.</td>
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<tr>
<td>LAW 92</td>
<td>Estates, Trusts and Wills</td>
<td>3 rec</td>
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<td>Requirements, formalities, drafting and execution of wills and trusts, probating wills, intestacy law, administration of wills and estates, preparation of federal estate and inheritance tax returns; transfer tax proceedings under the law of New York State; estate planning.</td>
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<td>Corequisite: RDL 02 or ENG 02 if required.</td>
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<tr>
<td>LAW 95</td>
<td>Legal Research and Writing</td>
<td>3 rec</td>
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<td>How to research legal questions and to present results to supervising attorney. Role of legal research in the process of legal advocacy; historical development and present organization of the Anglo-American legal system, organization and procedures of the New York courts; various tools of legal research and how to use them; skill in researching and answering legal questions in an active law office; skill in organizing and writing legal memoranda.</td>
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<td>Prerequisites: ENG 11, LAW 17, LAW 47.</td>
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<tr>
<td>LAW 96</td>
<td>Advanced Legal Research and Writing</td>
<td>3 rec</td>
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<td>Drafting of pleadings and business agreements; law office memoranda; memorandum of law in support of motions; pretrial and memorandum of law; appellate briefs; and use of computer research tools such as WESTLAW or LEXIS. Substantive aspects, with emphasis on the conduct of practical exercises in research and writing. The art of oral advocacy.</td>
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<tr>
<td></td>
<td>Prerequisites: ENG 11, LAW 95, LAW 17, LAW 47.</td>
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<tr>
<td>LAW 98</td>
<td>Paralegal Seminar and Internship</td>
<td>2 rec</td>
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<td>Provides students with an optimal practical experience in the legal field by placing them in various legal environments—law offices or corporate, judicial, or administrative agency—which have shown an interest in sponsoring an intern. The seminar and internship program provides direct contact and utilization of skills and knowledge obtained in the classroom and permits students to practice and perfect those skills in an operating office situation. In addition to satisfying the individual needs of students, this program helps the student crystallize and clarify career goals.</td>
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<td>Prerequisites: LAW 17; LAW 47, and completion of at least 40 credits toward a degree.</td>
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LEARNING TO LEARN
Department of Education and Reading

LTL 10 Learning to Learn
Prerequisite: Level of instruction courses who have completed a required development reading course. Examines organization of information from the various content courses taken concurrently. Uses analytical approach to development of test questions relevant to the various content areas.
Prerequisite: RDL 02 if required.
Corequisite: Content area course recommended for probationary students or as an elective.

LICENSED PRACTICAL NURSING
Department of Nursing and Allied Health Sciences

PNR 11 Nursing Skills I
This course, taken over three semesters, is designed to instruct the student practical nurse in basic computation principles essential to performing mathematical calculations for the safe and accurate administration of medications. Included in this course is an introduction to the special vocabulary of medical terminology used in the communication process of health care professionals. Students will be exposed to computer assisted instruction (CAI) and Internet research methods as integral adjuncts to the learning process.
Prerequisite: Preclinical nursing sequence.

PNR 12 Mental Health Concepts
This course is designed to familiarize the student with an overview of the history of nursing, therapeutic communication principles, mental health terminology and cultural concepts as they relate to understanding mental health. Students will be introduced to Maslow’s Hierarchy of Basic Human Needs and the nursing process as the prioritizing framework that is used in assisting individuals. The nursing process and critical thinking strategies will be explained as the organizing and problem solving tools that are to be used when assessing the mental status of clients and their families. The scope of practice of the PN in mental health and other health care settings will be defined and explored.
Prerequisite: Preclinical nursing sequence.

PNR 13 Practical Nursing Arts
This course is designed to assist the student PN to gain knowledge of essential nursing skills and procedures, inclusive of scientific principles that will support the development of critical thinking abilities. Maslow’s Hierarchy of Basic Human Needs and the Nursing Process is the theoretical framework the PN student will use to problem solve and deliver safe effective care. With direction, PN students will develop skills in: collecting data, recognizing a nursing diagnosis, assisting with the planning and implementation of the nursing care plan, perfecting their ability to perform procedures, handling equipment, and evaluating, reporting and documenting client outcomes.
Prerequisite: Preclinical nursing sequence.

PNR 21 Nursing Skills II
This second course in a three-part series continues instruction in the principles of pharmacology computation with the addition of basic principles for reconstituting medication, practicing IV and heparin calculations. Course content will also include instruction in diagnostic testing procedures and the related nursing implications.
Prerequisites: PNR 11, PNR 12, PNR 13, NTR 11.
Corequisite: PNR 22.

PNR 22 Medical Surgical Nursing I
This course is designed to introduce Practical Nursing (PN) students to their role in caring for older adult and disabled clients, in a variety of health care settings. PN students will learn how to identify, prevent and manage the most common clinical problems associated with chronic medical and psychosocial disorders. With assistance, PN students will utilize the nursing process, Maslow’s Hierarchy of Basic Human Needs, therapeutic communication principles and cultural sensitivity to collect data and implement a holistic plan of care. This course has a clinical requirement. A clinical failure results in a failure for the course.
Prerequisites: PNR 11, PNR 12, PNR 13, PNR 14, NTR 11.
Corequisite: PHM 11.

PNR 23 Medical Surgical Nursing II
This course continues to develop critical thinking skills required to apply fundamental knowledge and technical abilities necessary to provide nursing care for adult clients with complex medical and surgical problems in acute health care settings. Content will be presented using the conceptual framework of the nursing process and Maslow’s Hierarchy of Basic Human Needs. With guidance, the student will apply the nursing process to prioritize nursing care of adult clients with complex needs. Clinical practice in a variety of acute care settings is provided. A clinical failure results in failure for the course.
Prerequisite: PNR 22.

PNR 41 Nursing Skills III
The purpose of this third calculation is to reinforce the student’s ability in pharmacology computation. Calculation skills are introduced for pediatric dosages. Students will be required to demonstrate mastery of previously learned computation skills by passing a comprehensive calculation examination with a score not less than 85%. Success on this exam is a requirement for certification of graduation eligibility.
Prerequisite: PNR 21.

PNR 42 Psychiatric Nursing
This course focuses on current concepts of psychiatric/mental health nursing. It provides for continuing development of nursing process skills and is a nursing model for practice that is applicable in a variety of health care settings.
Prerequisites: PNR 22, PNR 31.
Corequisite: PNR 41.
COURSE DESCRIPTIONS

PNR 43  2 lect 6 clin 2 lab 4 cr
Pediatric Nursing
This course emphasizes utilization of the nursing process and Maslow’s Hierarchy of Needs to prioritize nursing care based upon disease entity and principles of growth and development. This involves a holistic approach, which includes preventative, curative, rehabilitative, physical, and psychosocial aspects of the hospitalized child and family. The principles of therapeutic communication and cultural competency are strategies the practical nursing student will learn to incorporate when providing care for pediatric clients and their families. This course has a clinical requirement. A clinical failure results in a failure for the course.
Prerequisites: PNR 22, PNR 31.
Corequisites: PNR 41, PNR 42.

PNR 44  2 lect 6 clin 2 lab 4 cr
Maternal and Child Care
This course utilizes the nursing process and Maslow’s Hierarchy of Human Needs to prioritize care to the expectant mother and family during pregnancy, labor, birth and puerperium. In addition, maternity nursing includes the care of the fetus and the neonate. Critical thinking skills, therapeutic communication and cultural competence are integral components in providing and delivering safe and competent care to the pregnant mother and family. This course has a clinical requirement. A clinical failure results in a failure for the course.
Prerequisites: PNR 22, PNR 31, PNR 43.
Corequisite: PNR 41.

PNR 45  1 rec 1 cr
Vocational Adjustment & Leadership
This course is designed to familiarize the senior practical nursing student with behavioral expectations of the new graduate practicing in the work place setting. Nursing leadership, management and professional practice for the LPN will be explored. Content will be presented that will aid in the completion of a professional portfolio. In addition, emphasis will be placed on the behaviors of professional decorum necessary in preparing for the job search and interview process. Employment opportunities, licensure and certification requirements, and continuing education options will be provided.
Corequisites: PNR 41, PNR 44.

NTR 11  3 rec 3 cr
Nutrition in Physical and Emotional Disorders
Basic course in therapeutic nutrition that focuses upon major health problems in western society and the influence of diet on their causes and cures. Traditional and controversial nutritional approaches are presented. Nursing care in selected situations is emphasized.
Prerequisites: Open to RN’s and LPN’s. For RN Students, NUR 41 and 42 or permission of instructor. For LPN students, pre-clinical nursing sequence.
MARKETING MANAGEMENT
Business and Information Systems Department

MKT 11  3 rec  3 cr
Principles of Marketing
Introduction to the role and scope of marketing in a rapidly changing and challenging environment. Designed to set an overall framework for further studies in the marketing field, this course surveys broad marketing issues and focuses on the planning and implementation of product, promotion, pricing, and distribution strategies.
Corequisite: ENG 02 or RDL 02 if required.

MKT 18  3 rec  3 cr
Consumer Behavior
Explores the impact of cultural, social, economic, and psychological influences on consumer decision-making. Highlights the importance of understanding consumer behavior in formulating and implementing the marketing strategy and traces key stages of the consumer decision-making process.
Prerequisite: MKT 11.

MKT 41  3 rec  3 cr
Management of Retail Operations
Examines the role of retailing within the larger marketing system and focuses on strategic aspects of retailing. The management decision-making process with respect to key areas, such as growth and diversification strategies, financial planning, store location, merchandising management, human resources management, advertising and sales promotion, are explored.
Prerequisite: MKT 11.

MKT 43  3 rec  3 cr
Principles of Advertising
Introduces advertising as a fundamental business function and as a creative outcome of the marketing strategy. This course addresses a wide variety of conceptual and technical issues, including consumer behavior, market segmentation, advertising planning and research, media and budget considerations, copywriting, art direction and production, and sales promotion.
Prerequisites: MKT 11.

MKT 47  2 rec  2 lab  3 cr
E-Marketing
Based upon established marketing thought and practice, this course focuses on the impact of the World Wide Web on the formulation and implementation of the marketing strategy. The role of the Web in market analysis as well as in product, promotion, pricing, and distribution strategies is explored. New E-business models designed to increase the efficiency of traditional marketing functions are also examined.
Prerequisites: ENG 01 and RDL 01 if required; MKT 11.
Corequisites: ENG 02 or RDL 02 if required; DAT 10 or permission of department.

MKT 48  3 rec  3 cr
Marketing Management
Designed to provide a basic understanding of key issues facing today’s marketing managers, this course introduces the student to fundamental concepts and techniques needed to manage the marketing function. Topics include the analysis of marketing opportunities and constraints, an examination of the decision-making process with respect to product, promotion, pricing, and distribution strategies as well as the planning and delivery of marketing programs. A managerial orientation is developed through the case study method.
Prerequisites: ENG 01 and RDL 01 if required; MKT 11.
Corequisites: ENG 02 and RDL 02 if required.
## COLLEGE CURRICULA MATHEMATICS REQUIREMENTS

### A. Mathematics Sequence by Curriculum.

After identifying your curriculum (major) below from the list on the left, see part B to determine the first mathematics course you need to take in the mathematics sequence for your choice of curriculum.

<table>
<thead>
<tr>
<th>Code - Curricula</th>
<th>Required Mathematics Courses Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>002 Accounting Curriculum A.A.S. Degree</td>
<td>01→03→12 / or (05→06→29 or 30 (→31)) *</td>
</tr>
<tr>
<td>003 Licensed Practical Nursing</td>
<td>See Nursing Department</td>
</tr>
<tr>
<td>004 Animal Care &amp; Management Certificate Program</td>
<td>01→03→04→12 or 21</td>
</tr>
<tr>
<td>008 Business Administration A.S. Degree</td>
<td>05→06→29 or 30 (→31#)</td>
</tr>
<tr>
<td>009 Automotive Mechanics Certificate Program</td>
<td>None</td>
</tr>
<tr>
<td>010 Paralegal Certificate Program</td>
<td>None</td>
</tr>
<tr>
<td>011 Education Associate A.A.S. Degree</td>
<td>01→03→04→21 or 23</td>
</tr>
<tr>
<td>014 Human Services A.A.S. Degree (was once A.A. Degree) *</td>
<td>01→03→12 / or (01→03→04→21 or 23 ) *</td>
</tr>
<tr>
<td>015 Mathematics A.S. Degree</td>
<td>05→06→30→31→32→33 and MTH 42 and two courses from {CSI 35, MTH 34, 35, 44, 46}</td>
</tr>
<tr>
<td>016 Pharmaceutical Manufacturing Technology A.S. Degree</td>
<td>05→06→13→14 / or (05→06→30→31) *</td>
</tr>
<tr>
<td>017 Digital Arts A.A.S. Degree</td>
<td>01→03→12 / or (01→03→04→21 or 23)</td>
</tr>
<tr>
<td>020 Computer Information Systems Curriculum A.A.S. Degree</td>
<td>01→03→12 / or (05→06→29 or 30 (→31)) *</td>
</tr>
<tr>
<td>023 Electronic Engineering Technology A.A.S. Degree</td>
<td>05→06→13→14→15</td>
</tr>
<tr>
<td>024 Engineering Science A.S. Degree</td>
<td>05→06→30→31→32→33→34 (MTH 42) *</td>
</tr>
<tr>
<td>025 Computer Science A.S. Degree</td>
<td>05→06→30→31→32→33 (MTH 34, 42) *</td>
</tr>
<tr>
<td>026 Environmental Technology A.A.S. Degree</td>
<td>05→06→13 and 23</td>
</tr>
<tr>
<td>028 Automotive Technology A.A.S. Degree</td>
<td>05→06→13</td>
</tr>
<tr>
<td>031 Community/School Health Education A.S. Degree</td>
<td>01→03→04→21 or 23 or 26</td>
</tr>
<tr>
<td>032 Dietetics &amp; Nutrition Option 131</td>
<td>01→03→04 or 23</td>
</tr>
<tr>
<td>033 Nuclear Medicine Technology A.A.S. Degree</td>
<td>05→06→30</td>
</tr>
<tr>
<td>034 Ornamental Horticulture A.A.S. Degree</td>
<td>None (05→06) *</td>
</tr>
<tr>
<td>036 Office Administration and Technology A.A.S. Degree</td>
<td>01→03→12 / or (05→06→30) *</td>
</tr>
<tr>
<td>Code - Curricula</td>
<td>Required Mathematics Courses Sequence</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>037 Liberal Arts and Sciences A.A. Degree</td>
<td>01 → 03 → 04 → 21 or 22 or 23 or 26 / or (05 → 06 → 30)†</td>
</tr>
<tr>
<td>African, Latino and Native American</td>
<td></td>
</tr>
<tr>
<td>Studies Option 537</td>
<td></td>
</tr>
<tr>
<td>Criminal Justice Option c37</td>
<td></td>
</tr>
<tr>
<td>Education Option 737</td>
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</tr>
<tr>
<td>History Option 237</td>
<td></td>
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<tr>
<td>Human Services Option b37</td>
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<tr>
<td>International Studies Option a37</td>
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<tr>
<td>Media Studies Option 837</td>
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<tr>
<td>Performing Arts Option 137</td>
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<tr>
<td>Political Science Option 337</td>
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<tr>
<td>Psychology Option 437</td>
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<tr>
<td>Security Management d37</td>
<td></td>
</tr>
<tr>
<td>Spanish Option e37</td>
<td></td>
</tr>
<tr>
<td>Speech Pathology Option 937</td>
<td></td>
</tr>
<tr>
<td>Human Services Option b37</td>
<td></td>
</tr>
<tr>
<td>039 Liberal Arts and Sciences A.S. Degree</td>
<td>05 → 06 → 30 → 31 → 32</td>
</tr>
<tr>
<td>Biology Option 139</td>
<td></td>
</tr>
<tr>
<td>Chemistry Option 239</td>
<td>05 → 06 → 30 → 31 → 32</td>
</tr>
<tr>
<td>Earth Systems &amp; Environmental Science 639</td>
<td>05 → 06 → 30 → 31 → 32</td>
</tr>
<tr>
<td>Physics Option 339</td>
<td>05 → 06 → 30 → 31 → 32</td>
</tr>
<tr>
<td>040 Therapeutic Recreation A.S. Degree</td>
<td>01 → 03 → 04 → 21 or 22 or 23 or 26</td>
</tr>
<tr>
<td>041 Telecommunications Technology A.A.S Degree</td>
<td>05 → 06 → 13 → 14</td>
</tr>
<tr>
<td>043 Medical Office Assistant Curriculum A.A.S. Degree</td>
<td>01 → 03 → 12 / or (05 → 06 → 30) *</td>
</tr>
<tr>
<td>044 Medical Laboratory Technology A.A.S. Degree</td>
<td>05 → 06 → 13 → 14</td>
</tr>
<tr>
<td>046 Nursing A.A.S. Degree</td>
<td>See Nursing Department</td>
</tr>
<tr>
<td>047 Pre-Clinical Nursing Program</td>
<td>See Nursing Department</td>
</tr>
<tr>
<td>048 Radiologic Technology A.A.S. Degree</td>
<td>05 → 06 → 13 / or (05 → 06 → 30 → 31) *</td>
</tr>
<tr>
<td>050 Pre-Pharmacy (Old curriculum)</td>
<td>05 → 06 → 30 → 31</td>
</tr>
<tr>
<td>056 Media Technology (Formerly TV Tech) A.A.S. Degree</td>
<td>01 → 03 → 12 / or (01 → 03 → 04 → 21) *</td>
</tr>
<tr>
<td>057 Paralegal Studies A.A.S. Degree</td>
<td>01 → 03 → 12 / or (01 → 03 → 04 → 21 or 23) §</td>
</tr>
<tr>
<td>073 Marketing Management Curriculum A.A.S. Degree</td>
<td>01 → 03 → 12 / or (05 → 06 → 29 or 30 → 31) *</td>
</tr>
<tr>
<td>141 Telecommunications Technology (Verizon) A.A.S. Degree</td>
<td>10 → 11</td>
</tr>
<tr>
<td>914 Human Services A.A. Degree</td>
<td>01 → 03 → 04 → 21 or 23 / or (05 → 06 → 30) *</td>
</tr>
</tbody>
</table>

* Student who may later transfer to a four-year college should consider taking these courses.
# Recommended course but not a required course by curriculum.
† Student who may transfer to a four-year college other than CUNY colleges should consider taking these courses.
§ Student who will transfer to New York City Technical College. (Math requirement under review.)
B. Placement in Mathematics Remedial Courses

Beginning Fall 2004, all entering students take the COMPASS exam for placement in mathematics courses. Before Fall 2004, students took the CMAT for this purpose.

b1. COMPASS Cut-off Scores for Mathematics Placement

IMPORTANT: COMPASS scores are used for initial placement only. Once a student has been placed into a mathematics sequence, subsequent COMPASS scores cannot be used to "skip" courses in the sequence. Students can place out of any remedial course by passing a departmental placement exam.

Mathematics Course Sequence:

Liberal Arts (non-science)
MTH 01→MTH 03→MTH 04→MTH 21/23

Mathematics, Science, Technology and Business (transfer programs)
MTH 05→MTH 06→MTH 30 (or MTH 29 or MTH 13)

<table>
<thead>
<tr>
<th>Place out of</th>
<th>Arithmetic (pre-algebra)</th>
<th>Algebra (M2)</th>
<th>College Algebra (M3)</th>
<th>Geometry (S4)</th>
<th>Trigonometry</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 01</td>
<td>≥30</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>MTH 03</td>
<td>≥30</td>
<td>≥30</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>MTH 04</td>
<td>≥30</td>
<td>≥50</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>MTH 05</td>
<td>≥30</td>
<td>≥40</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>MTH 06</td>
<td>≥30</td>
<td>≥50</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>MTH 13 or MTH 30**</td>
<td>≥30</td>
<td>≥50</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

If M1<30, then student takes MTH 01.
If 30≤M1<35, and M2≥30 then student may retest for M1 after workshop or tutoring.
If M1≥35 and M2≥30, then student is eligible to apply for PHM 10 at Nursing Department.
If 30≤M1≤35, and M2>30 then student should take MTH 03 and retest for M1 and M2.

b2. CMAT Cut-off Scores for Mathematics Placement

IMPORTANT: CMAT scores are used for initial placement only.

<table>
<thead>
<tr>
<th>Place out of</th>
<th>Part I Arithmetic (20)</th>
<th>Part II Elementary Algebra (20)</th>
<th>The Sum of Parts I &amp; II (40)</th>
<th>Part III Intermediate Algebra (20)</th>
<th>Part IV Trigonometry (8)</th>
<th>Part V Precalculus (12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 01</td>
<td>≥12</td>
<td>−</td>
<td>≥25</td>
<td>−</td>
<td>≥13</td>
<td>−</td>
</tr>
<tr>
<td>MTH 03</td>
<td>−</td>
<td>≥12</td>
<td>≥25</td>
<td>−</td>
<td>≥13</td>
<td>≥4</td>
</tr>
<tr>
<td>MTH 04</td>
<td>−</td>
<td>−</td>
<td>≥25</td>
<td>≥13</td>
<td>≥4</td>
<td>≥8</td>
</tr>
<tr>
<td>MTH 05</td>
<td>−</td>
<td>−</td>
<td>≥25</td>
<td>≥13</td>
<td>≥4</td>
<td>≥8</td>
</tr>
<tr>
<td>MTH 06</td>
<td>−</td>
<td>−</td>
<td>≥25</td>
<td>≥13</td>
<td>≥4</td>
<td>≥8</td>
</tr>
<tr>
<td>MTH 13 or MTH 30**</td>
<td>−</td>
<td>−</td>
<td>≥25</td>
<td>≥13</td>
<td>≥4</td>
<td>≥8</td>
</tr>
</tbody>
</table>

NOTE: If students have taken advanced algebra in high school and wish to take MTH 31, then they may be exempt from MTH 30 by taking an exemption examination administered by the Department of Mathematics and Computer Science.

C. High School Equivalency

<table>
<thead>
<tr>
<th>MTH 03/MTH 05</th>
<th>Seq Math I (SMQ I) : MQ1 and MQ2 [9th grade math], or Math A</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 04</td>
<td>Seq Math II (SMQ II) : MQ3 and MQ4 [10th grade math]</td>
</tr>
<tr>
<td>MTH 06</td>
<td>Seq Math III (SMQ III) : MQ5 and MQ6, or Math B</td>
</tr>
</tbody>
</table>
COURSE DESCRIPTIONS

Department of Mathematics and Computer Science

The zero-level courses are taken for no credit and are remedial or compensatory in nature. They are designed for students who lack the preparation necessary to enter the college-level mathematics courses.

MTH 01 3 rec 0 cr
Fundamental Concepts and Skills in Arithmetic and Algebra
Topics selected from basic operations in arithmetic, verbal problems whose solutions involve arithmetic processes, generalizations of the principles of arithmetic leading to the fundamental concepts of algebra.
Liberal Arts (non-science) and Science, Technology and Business (transfer programs) should refer to the PLACEMENT IN MATHEMATICS REMEDIAL COURSES CHART on page 154 for appropriate course.
Corequisite: RDL 01 if required.

MTH 03 4 rec 0 cr
Selected Topics in Elementary Algebra
Topics selected from elementary algebra, geometry, operations with polynomials, graphing, verbal problems, linear equations.
For students who are not in programs requiring MTH 06.
Prerequisite: Liberal Arts (non-science) and Science, Technology and Business (transfer programs) should refer to the PLACEMENT IN MATHEMATICS REMEDIAL COURSES CHART on page 154 and RDL 01 if required.
Corequisite: RDL 02 if required.

MTH 05 6 rec 0 cr
Basic Concepts of Mathematics I
Topics selected from elements of arithmetic, elementary algebra and geometry, equations, polynomials, rational algebraic expressions, graphing.
For students who are in programs requiring MTH 06 and who scored below 14 on the second 20 questions of the CUNY Mathematics Assessment Test.
Prerequisite: Liberal Arts (non-science) and Science, Technology and Business (transfer programs) should refer to the PLACEMENT IN MATHEMATICS REMEDIAL COURSES CHART on page 154 and RDL 01 if required.
Corequisite: RDL 02 if required.

MTH 06 6 rec 0 cr
Basic Concepts of Mathematics II
Topics selected from real and complex numbers, function concept, coordinate geometry, linear and quadratic equations, systems of equations, geometry, elements of trigonometry.
Prerequisite: MTH 05 or two years of high school mathematics consisting of algebra and geometry or equivalent and RDL 02 if required.

Exemption Examinations
Qualified students may take exemption examinations for all courses offered by the Mathematics Department upon application to the department. In general, a grade of B+ or better is required for exemption with credit. A passing grade less than B+ but C or better, will qualify for exemption without credit.

MTH 10 4 rec 4 cr
Technical Mathematics I
(For Telecommunications Technology Verizon students only.) First course in a two-semester sequence of intermediate algebra and trigonometry with technical applications. Topics include trigonometry functions, vectors, units of measurement and approximate numbers, fundamentals concepts of algebra, functions and graphs, systems of linear equations, determinants, factoring and fractions, quadratics, variation and geometry. The scientific calculator is used throughout the course.
Prerequisite: MTH 06 or equivalent and ENG 02 and RDL 02 if required.

MTH 11 4 rec 4 cr
Technical Mathematics II
(For Telecommunications Technology Verizon students only.) Second course in a two-semester sequence of intermediate algebra and trigonometry with technical applications. Topics include trigonometry functions of any angle, oblique triangle, graphs of logarithmic functions, exponents and radicals, exponential and logarithmic functions, basic operations with complex numbers, inequalities, introduction to statistics.
The scientific calculator is used throughout the course.
Prerequisites: MTH 10 or equivalent and ENG 02 and RDL 02 if required.

Any course numbered 12 through 15 is, with some modification, recommended only for those students enrolled in career programs.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 12</td>
<td>Introduction to Mathematical Thought</td>
<td>3</td>
<td>MTH 03 or equivalent and ENG 01 if required.</td>
</tr>
<tr>
<td>MTH 13</td>
<td>Trigonometry and College Algebra</td>
<td>4</td>
<td>MTH 06 or equivalent and ENG 02 if required.</td>
</tr>
<tr>
<td>MTH 14</td>
<td>College Algebra and Introduction to Calculus</td>
<td>3</td>
<td>MTH 13 or equivalent and ENG 02 if required.</td>
</tr>
<tr>
<td>MTH 15</td>
<td>Calculus</td>
<td>3</td>
<td>MTH 14 or equivalent and ENG 02 if required.</td>
</tr>
<tr>
<td>MTH 21</td>
<td>Survey of Mathematics I</td>
<td>3</td>
<td>MTH 04 or equivalent and ENG 02 if required.</td>
</tr>
<tr>
<td>MTH 22</td>
<td>Survey of Mathematics II</td>
<td>3</td>
<td>MTH 04 or equivalent and ENG 02 if required.</td>
</tr>
<tr>
<td>MTH 23</td>
<td>Probability and Statistics</td>
<td>3</td>
<td>MTH 04 or equivalent and ENG 02 if required.</td>
</tr>
<tr>
<td>MTH 26</td>
<td>Mathematics in the Modern World</td>
<td>2</td>
<td>MTH 04 or equivalent and ENG 02 if required.</td>
</tr>
<tr>
<td>MTH 30</td>
<td>Pre-Calculus Mathematics</td>
<td>4</td>
<td>MTH 06 or equivalent and ENG 02 if required.</td>
</tr>
<tr>
<td>MTH 31</td>
<td>Analytic Geometry and Calculus I</td>
<td>6</td>
<td>MTH 06 or equivalent and ENG 02 if required.</td>
</tr>
</tbody>
</table>

**Course Descriptions**

MTH 12: Introduction to Mathematical Thought
Topics selected from probability, statistics, logic, set theory, geometry, matrices, number system structures. (Not recommended for transfer curricula, and will not be accepted for credit in the Liberal Arts curriculum.)

Prerequisites: MTH 03 or equivalent and ENG 01 if required.

MTH 13: Trigonometry and College Algebra
Topics selected from vectors, trigonometry, variation, logarithms, complex numbers and DeMoivre’s theorem, theory of equations, and system of equations.

Prerequisites: MTH 06 or equivalent and ENG 02 if required.

MTH 14: College Algebra and Introduction to Calculus
Analytic geometry, inequalities and absolute value, limits and derivative, application of derivative.

Prerequisites: MTH 13 or equivalent and ENG 02 if required.

MTH 15: Calculus
Integrals, application of integrals, differentiation of trigonometric and logarithm functions, methods of integration, power series and Fourier Series.

Prerequisites: MTH 14 or equivalent and ENG 02 if required.

MTH 21: Survey of Mathematics I
Designed for non-science liberal arts students. Emphasis on key concepts and structure of mathematics. Topics selected from decimal notation, computation in other bases, groups, sets, logic, elementary number theory, development of real number system, analytic geometry, linear programming, networks, complex numbers.

Prerequisites: MTH 04 or equivalent and ENG 02 if required.

MTH 22: Survey of Mathematics II
Topics selected from geometry, algebra, graphs, functions, game theory, mathematical induction, permutations, combinations, probability, logic; Euclidean, non-Euclidean, projective, finite, and coordinate geometries; groups, matrices.

Prerequisites: MTH 04 or equivalent and ENG 02 if required.

MTH 23: Probability and Statistics
Topics selected from permutations, combinations, probability, sets, finite sample spaces, probabilities as areas, basic statistical concepts, the normal distribution, central limit theorem.

Prerequisites: MTH 04 or equivalent and ENG 02 if required.

MTH 26: Mathematics in the Modern World
Topics selected from BASIC computer language; mathematical simulation of problems from diverse fields including water pollution, population studies, political polls, and artificial intelligence; mathematical algorithms and interpretation of graphs.

Prerequisites: MTH 04 or equivalent and ENG 02 if required.

MTH 30 through 35 are designed for students majoring in mathematics, physics, biology, chemistry, engineering science, computer science, and are recommended for those in other curricula with advanced preparation.

MTH 30: Pre-Calculus Mathematics
Topics include inequalities, function concept, special functions, exponential and logarithmic function, rational and irrational functions, binomial theorem, trigonometric functions, mathematical induction.

Prerequisites: MTH 06 or equivalent and ENG 02 if required.

MTH 31: Analytic Geometry and Calculus I
Limits, rates of change, differentiation and anti-differentiation of algebraic functions, applications, integrals, curve sketching. For Engineering Science students or for Liberal Arts and Sciences students planning to major in mathematics, computer science or physical science.

Prerequisite: MTH 30 or equivalent and ENG 02 if required.
MTH 32  Analytic Geometry and Calculus II  6 rec  5 cr
Differentiation and integration of transcendental functions, hyperbolic functions, applications of the definite integral; parametric equations, mean value theorems, polar coordinates, plane analytic geometry.
Prerequisites: MTH 31 or equivalent and ENG 02 and RDL 02 if required.

MTH 33  Analytic Geometry and Calculus III  5 rec  5 cr
Vectors, applications of vectors to analytic geometry and calculus, partial differentiation, multiple integrals, volumes and surface area, infinite series, applications.
Prerequisites: MTH 32 or equivalent and ENG 02 and RDL 02 if required.

MTH 34  Differential Equations and Selected Topics in Advanced Calculus  4 rec  4 cr
Methods of solving ordinary differential equations; selected topics from among the following: hyperbolic functions, power series, Fourier series, gamma functions, Bessel functions, problems of motion, electric circuits, damped and forced vibrations, Laplace transform.
Prerequisites: MTH 33 or equivalent and ENG 02 and RDL 02 if required.

MTH 35  Selected Topics in Advanced Calculus and Linear Algebra  4 rec  4 cr
Matrices, introduction to linear algebra and vector analysis, integral theorems of Gauss, Green and Stokes; applications.
Prerequisites: MTH 33 or equivalent and ENG 02 and RDL 02 if required.

MTH 42  Linear Algebra  4 rec  4 cr
Vector spaces, basis and dimension, matrices, linear transformations, determinants, solution of systems of linear equations, eigenvalues and eigenvectors.
Prerequisites: MTH 32 or equivalent and ENG 02 and RDL 02 if required.

MTH 44  Vector Analysis  4 rec  4 cr
Differential geometry of curves, line integrals, surface integrals, change of variables, Green’s theorem, Stokes’ theorem, Gauss’s Theorem.
Prerequisites: MTH 33 or equivalent and ENG 02 and RDL 02 if required.

MTH 46  Abstract Algebra  4 rec  4 cr
Properties of integers, permutations, groups, alternating groups, groups of symmetries, quotient groups, sets, mappings, isomorphisms, homomorphisms, rings, fields, polynomials.
Prerequisites: MTH 42 or equivalent and ENG 02 and RDL 02 if required.

MTH 48  Advanced Calculus  4 rec  4 cr
Advanced treatment of the real number system, properties of continuous functions, derivatives and differentials, rigorous work with limits, the definite integral, uniform continuity, uniform convergence, infinite sequences, functions defined by series.
Prerequisites: MTH 33 or equivalent and ENG 02 and RDL 02 if required.

MECHANICAL TECHNOLOGY
Department of Physics and Technology

MEC 11  Basic Engineering Graphics  1 lect  4 lab  2 cr
Fundamental engineering drawing and industrial drafting room practice. Lettering, orthographic projection, auxiliary views, sections and conventions, pictorials, threads and fasteners, detail drawing, dimensioning and electrical drawings; introduction to computer-aided graphics.
Prerequisite: MTH 05.

MUSIC
Department of Art and Music

MUS 10  Music Survey  2 rec  1 cr
Introduction to the vast symphonic and chamber music literature; opera from Baroque to the contemporary period. Audio laboratory listening assignments. Attendance at live concerts required.
Not open to students taking MUS 11 or MUS 12
Corequisite: ENG 02 or RDL 02 if required.

MUS 11  Introduction to Music  3 rec  3 cr
Nature of music expression; elements of music, including tempo, meter, rhythm, melodic and harmonic material and structure, tone color and texture examined in instrumental and vocal forms. History of development of musical styles and forms. Audio laboratory listening assignments. Attendance at live concerts required.
Corequisite: ENG 02 or RDL 02 if required.

MUS 12  Introduction to Music: A Multi-Cultural Survey of World Music  3 rec  3 cr
In-depth study and analysis of music (style, form, and tradition) and its relation to world cultures. Emphasis on ethnic and artistic characteristics. Audio laboratory listening assignments. Attendance at live concerts required.
Corequisite: ENG 02 or RDL 02 if required.

MUS 13  Sound Design for Multimedia  3 studio  2 cr
This course will introduce students to the techniques and procedures of composing digital music. The artistic focus will be on theories applied to music production such as the principles of time, memory, invariance, rhythm, and forms. Students will work on individual projects creating original music or audio tracks for multimedia design.

MUS 14  Creative Computer Music  2 rec  2 lab  3 cr
Lecture-demonstrations and lab settings to familiarize students with capabilities of MIDI (Musical Instrument Digital Interface) technologies. Students master MIDI applications of the personal computer with regard to sequencing, sound editing, storage and retrieval. Emphasis on use of MIDI and ability to set up an MIDI workstation.

MUS 18  History of Jazz  2 rec  2 cr
Survey of development of jazz music from time of slavery to the present. Audio laboratory listening assignments. Attendance at live concerts required.
Corequisite: RDL 02 if required.
MUS 21, 22, 23, 24  3 rec  1 cr
Choral Performance
The study and presentation of standard and contemporary choral literature for mixed voices. Choral training and performances at concerts, college ceremonies and functions.
No audition required; open to all members of the college community.

MUS 37  1 rec  1 cr
Instrumental Class
Instruction in the Recorder
Basic instruction in playing a musical instrument, the recorder, for both solo and group use. No previous musical training necessary.

MUS 40  3 rec  2 cr
Fundamentals of Music
Basic reading skills including treble and bass clefs, key signatures, major and minor scales, some elementary sight-reading techniques, rhythms, simple harmony.

MUS 50  2 rec  1 cr
Basic Musicianship
Development of basic aural perceptions of pitch, duration, intensity, timbre, melody and rhythm through listening exercises, singing, and the playing of simple musical instruments.

MUS 65  2 rec  1 cr
Beginning Guitar Class
Introduction to basic guitar techniques, harmonization and transposition of folk songs.

MUS 66  2 rec  1 cr
Guitar Class II*
Prerequisite: MUS 65 or departmental permission.

MUS 70  2 rec  1 cr
Piano Class for Beginners
Introduction to basic piano techniques, harmonization and transposition of simple accompanying techniques for folk songs, easy piano literature from all stylistic eras. Practice facilities available.

MUS 71  2 rec  1 cr
Secondary Piano I

MUS 72  2 rec  1 cr
Secondary Piano II
Class instruction to attain an elementary facility at the piano.
Prerequisite: for MUS 71: MUS 70 or departmental permission
for MUS 72: MUS 71 or departmental permission.

*Not offered on a regular basis. Course descriptions available upon request.

NUCLEAR MEDICINE TECHNOLOGY
Department of Physics and Technology

The following courses will be given at the Albert Einstein College of Medicine or at the hospitals affiliated with it.

NMT 71  2 lab  1 cr
Nuclear Physics Laboratory
Chronological development of nuclear physics in the 20th century as represented by the experimental work on blackbody radiation, photoelectric effect, matter waves, Compton scattering and pair-production. Comparison of radiation measuring devices including G.M and scintillation survey meters, gamma cameras, well counters and dosimeters. Quality control and radiation safety.
Prerequisites: PHY 24 and permission of the NMT Program Director;
Corequisites: NMT 81-84.

NMT 78  2 lab  1 lect  2 cr
EKG - Interpretation and Techniques
Introduction to EKG. Topics include: electrical physiology of the heart, electrocardiographic tracing, leads (3 vs. 12), and analog and digital EKG. Some clinical hours may extend beyond the semester.
Prerequisites: BIO 24 and permission of the NMT Program Director
or BIO 21 and BIO 22 and permission of the Medical Office Assistant Curriculum Coordinator.

NMT 79  2 lab  1 lect  2 cr
Phlebotomy
Introduction to phlebotomy. Topics include: phlebotomy principles, anatomy and physiology of the circulatory system, safety, equipment and techniques. Students completing this course qualify for the certification exam in phlebotomy.
Prerequisite: BIO 24 and permission of the NMT Program Director,
or BIO 21 and BIO 22 and permission of Medical Office Assistant Curriculum Coordinator.

NMT 81  3 lect/dem  3 cr
Orientation in Clinical Nuclear Medicine
Orientation to the hospital environment and to various phases of Nuclear Medicine Technology; hospital administration and procedures.
Prerequisite: Completion of Pre-NMT Sequence.

NMT 82  3 lect/dem  3 cr
Radio-Pharmaceutical Chemistry
Preparation and use of radio-pharmaceuticals, uptake of various organs of radioactive chemicals, time dependent effects dilutions and separation analyses.
Prerequisites: BIO 23, CHM 18, NMT 81.
Corequisite: NMT 71.

NMT 83  2 rec  2 lab  3 cr
Radiation Physics and Dosimetry
Elements of nuclear physics, the conservation laws; alpha, beta, and gamma decay; the neutrino; elements of health physics; the roentgen, REM, REP, and RAD; maximum safe human exposure to radiation; regulations governing exposure.
Corequisite: NMT 71.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Lectures</th>
<th>Laboratory</th>
<th>Clinical</th>
<th>Description</th>
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<tbody>
<tr>
<td>NMT 84</td>
<td>2</td>
<td>2</td>
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<td>2</td>
<td>Radiation Biology&lt;br&gt;Comprehensive study of radiation effects on cells including direct and indirect action of ionizing radiation; damage induced by free radicals in DNA; interpretation of survival data; radiation genetics; radiation effects on embryos; delayed effects; radiation safety and health physics.&lt;br&gt;&lt;strong&gt;Prerequisites:&lt;/strong&gt; NMT 71.</td>
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<tr>
<td>NMT 85</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>Nuclear Medicine Procedures&lt;br&gt;Nuclear medicine procedures related to cardiovascular pulmonary system, endocrine system, central nervous system, gastrointestinal system, genitourinary system, skeletal system, hematological system and other therapeutic procedures; introduction to radioimmunoassay principles and procedures.&lt;br&gt;&lt;strong&gt;Prerequisites:&lt;/strong&gt; BIO 24, NMT 83.</td>
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<tr>
<td>NMT 86</td>
<td>1</td>
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<td>Didactic Nuclear Medicine&lt;br&gt;Rationale for applications of radio pharmaceuticals for in vivo and in vitro procedures; discussion of individual organ systems; RIA principles and procedures; review of relevant medical law and patient care.&lt;br&gt;&lt;strong&gt;Prerequisites:&lt;/strong&gt; NMT 85.</td>
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<tr>
<td>NMT 87</td>
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<td>1,100</td>
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<td></td>
<td>Clinical Nuclear Medicine&lt;br&gt;Static and dynamic radionuclide procedures on patients; tomographic procedures; interpretation of radionuclide scans and gamma-camera images; nuclear medicine instrumentation; alternative imaging processes.&lt;br&gt;&lt;strong&gt;Prerequisites:&lt;/strong&gt; NMT 86.</td>
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<tr>
<td>NUR 10</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>Transition in Nursing&lt;br&gt;Designed for Licensed Practical Nurses entering the RN Fast Track and the RN Pathway. The focus is on the expectations for coursework in the program, pharmacology calculation review, changes in role from LPN to RN.&lt;br&gt;&lt;strong&gt;Prerequisite:&lt;/strong&gt; Pre-Clinical Nursing Sequence.</td>
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<tr>
<td>NTR 11</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>Nutrition in Physical and Emotional Disorders&lt;br&gt;Basic course in therapeutic nutrition that focuses upon major health problems in western society and influence of diet on their causes and cures. Traditional and controversial nutritional approaches are presented. Nursing care in selected situations emphasized. (Offered in the Spring Semester only.)&lt;br&gt;&lt;strong&gt;Prerequisite:&lt;/strong&gt; For RN students, NUR 41 and 42 or permission of instructor. Also open to RNs and LPNs. For LPN students, pre-clinical nursing sequence.</td>
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<tr>
<td>NUR 41</td>
<td>2</td>
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<td>2</td>
<td>Nursing Theory and the Nursing Process&lt;br&gt;Introduction to the concepts of adaptation, holism, and the nursing process as basis for client care.&lt;br&gt;&lt;strong&gt;Prerequisite:&lt;/strong&gt; Pre-Clinical Nursing Sequence.</td>
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<tr>
<td>NUR 42</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>Nursing Process and Fundamental Skills&lt;br&gt;Designed to assist student in promoting client adaptation to stress. Introduction to client adaptive and ineffective responses to stress and nursing interventions. Basic nursing principles and skills, learned in lecture and laboratory are applied in clinical setting.&lt;br&gt;&lt;strong&gt;Prerequisites:&lt;/strong&gt; Pre-Nursing Sequence.</td>
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**NURSING* Department of Nursing and Allied Health**

Admission to Nursing (NUR) courses is based on the approved priority list which is on file in the Nursing Department and Student Development.

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* NUR courses are open only to students with full matriculation in the Nursing (046) curriculum.
This introductory medical-surgical nursing course focuses on client adaptation to stress that results from selected traumatic, inflammatory, and neoplastic disease processes of various body systems. Medical therapies and surgical interventions are discussed. A planned program of supervised experiences on medical and surgical units in selected health care agencies is provided.

**Prerequisites:** NUR 41, NUR 42, BIO 24.
**Corequisites:** NUR 44, BIO 28.

**NUR 44**

**2 lect 6 clin 4 cr**

**Nursing Process: Biopsychosocial Adaptation**

This introductory medical-surgical nursing course focuses on client adaptation to stress that results from selected traumatic, inflammatory, and neoplastic disease processes of various body systems. Medical therapies and surgical interventions are discussed. A planned program of supervised experiences on medical and surgical units in selected health care agencies is provided.

**Prerequisites:** NUR 41, NUR 42, BIO 24.
**Corequisites:** NUR 44, BIO 28.

**NUR 45**

**2 lect 6 clin 4 cr**

**Nursing Process: Biopsychosocial Adaptation to the Maternity Cycle**

Focuses on adaptations occurring in human reproduction. Emphasis on the nurse’s responsibility for promoting and maintaining the health and adaptation of the family in response to changes/stimuli occurring during the reproductive cycle.

**Prerequisites:** NUR 43, NUR 44, BIO 28.
**Corequisites:** NUR 46.

**NUR 46**

**2 lect 6 clin 4 cr**

**Nursing Process: Biopsychosocial Adaptation II**

Advanced medical-surgical nursing course focuses on client adaptation to stress that results from selected traumatic, inflammatory, and neoplastic disease processes of various body systems. Special adaptation problems of the aged and the chronically ill are also included. Medical therapies and surgical interventions are discussed. Provides planned program of supervised experience on medical and surgical units in selected health care agencies.

**Prerequisites:** NUR 43, NUR 44, BIO 24, BIO 28.
**Corequisites:** NUR 45.

**NUR 47**

**2 lect 6 clin 4 cr**

**Nursing Process: Biopsychosocial Adaptation to Childhood**

Focus is on the unique needs and adaptive mechanisms required to promote the growth and development of infants and children within the family structure. Includes the ineffective responses that are prevalent during specific developmental phases.

**Prerequisites:** NUR 45, NUR 46.
**Corequisites:** NUR 48.

**NUR 48**

**2 lect 6 clin 4 cr**

**Leadership and Management**

This senior level course provides students the opportunity to practice leadership and management skills in settings where clients have complex health needs.

**Prerequisites:** NUR 45, NUR 46.
**Corequisites:** NUR 47.

**PAS 11**

**1.5 rec 1.5 lab 2 cr**

**Physical Assessment of the Adult**

Provides a systematic method for conducting a physical examination of the adult client. Seminars, audiovisual materials and practice are integrated to enhance the development of skills in conducting the examination using specialized instruments and techniques; and in documenting findings. Instruments necessary for conducting the examination are provided. (Offered in the Spring Semester only.)

**Prerequisite:** NUR 44 or (R.N.) Registered Nurse license; or (LPN) Licensed Practical Nurse license; or Nursing students who have completed a course in Anatomy and Physiology and a course in an acute nursing care setting; with permission of Nursing Department.

**PHM 10**

**2 rec 2 cr**

**Pharmacology Computations**

Symbols, weights and measures, equipment, metric and apothecary systems, preparation of solutions, intravenous fluid administration of drugs and computation of dosages required of nursing personnel. Computer Center modules are an integral adjunct to the course.

**Prerequisite:** A minimum score of 35 in arithmetic (M1) and a minimum score of 27 in Algebra (M2) on the CUNY COMPASS PLACEMENT TEST or permission of the department.

**PHM 11**

**3 rec 3 cr**

**Pharmacology as It Applies to Health Services**

Current major drugs utilized in nursing today, need, therapeutic action, mode of administration, common side effects, toxicity, normal range of dose drug interactions and contraindications; nursing implications including patient teaching are stressed.

**Prerequisite:** Students need to complete all remediation for admission to nursing. PHM11 is also available to RN, LPN, and Health Care Workers authorized to administer medications. It is recommended that students in the RN program complete NUR 42 before taking PHM 11.

For students in the LPN program:

**Prerequisites:** PNR 11, PNR 13, and NTR 11.
**Corequisites:** PNR 22.

† The minimum acceptable grade in Nursing (NUR) courses is C. Grades of C- D+, D, D-, F and W must be repeated if the student wishes to receive a degree in Nursing. The courses must be repeated according to the following conditions:
1. The course must be repeated before the next higher level course is taken.
2. A Nursing student may only attempt a given Nursing course twice.
**Note:** Attempt is defined as having registered in the course for at least 3 weeks, appeared on the roster and received any grade, academic or administrative.
3. A Nursing student may only repeat two different Nursing courses.
4. Nursing students who are unsuccessful in three different Nursing (NUR) courses may not continue in the program.
5. All Nursing courses required for graduation must be taken within a five-year time span.
### Office Administration and Technology and Medical Assistant Programs

**Business and Information Systems Department**

**COM 31** 2 rec 2 lab 3 cr  
Business Communications  
An introduction to the principles of writing business correspondence and reports. Emphasis will be placed on outlining ideas and the development of the composition of written communications such as routine letters, memos, e-mail messages, and reports. The assimilation of content and interpretation of incoming correspondence for appropriate action and response will also be addressed. Language Arts skills will be reviewed and reinforced. A term report will be required.  
**Prerequisite:** ENG 10 or ENG 11, KEY 12.

**SEC 35** 4 rec 2 cr  
Medical Office Procedures and Management  
Perform secretarial and medical assistant responsibilities in private physicians' offices, hospitals, and medical laboratories. Cultivation of desirable personal traits and attitudes of the medical office assistant. Office projects include case histories, medical reports, filing systems, and recordkeeping. Development of skill in transcribing medical reports.  
**Prerequisites:** KEY 13, WPR 11, or department permission.  
**Corequisites:** BIO 47.

**SEC 41** 4 rec 2 cr  
Office Procedures  
This course is designed to equip students with the ability to perform efficiently in their role as administrative assistants and as members of an office team by learning the role of support staff. Topics include prioritizing work assignments; managing time and stress; planning meetings and conferences; making travel arrangements; and integrating technologies that have increased office productivity. Projects requiring the analysis of data and development of critical thinking and problem-solving skills will be incorporated into the course.  
**Prerequisites:** COM 31, KEY 12.

### Orientation

**Department of Student Development**

**OCD 01** 1 rec 0 cr  
Orientation and Career Development  
In this course students develop basic college survival skills in areas of academic life, such as career goals, time management, classroom behavior, assessment of instructor demands and utilization of library and other college resources. Emphasis is placed on students' understanding of the academic environment, demands required to develop successful coping and achievement behaviors. **Required in all curricula.**

**OCD 11** 2 rec 1 cr  
Career Development  
A comprehensive examination of the career decision-making process involving relevant information about self and the world of work. Exploration of values, skills, abilities, and interests, and their relationship to the job market. Development of career knowledge and awareness including training requirements, life style, and employment opportunities. Self-marketing and job hunting skills.  
**Prerequisite:** ENG 01, RDL 01, OCD 01, completion of 30 credits (remedial courses included) or permission of instructor.

### Philosophy

**Department of History**

**PHL 11** 3 rec 3 cr  
Introduction to Philosophy  
Fundamental questions of human experience, and basic problems of philosophy; survey of major philosophers, classical and modern.  
**Corequisite:** ENG 02 or RDL 02 if required.

**PHL 90** 3 rec 3 cr  
Introduction to Religion  
Humanistic and academic orientation to study of religion, treating each of the major world religions systematically. Course includes both historical and contemporary material.  
**Corequisite:** ENG 02 or RDL 02 if required.

### Physical Education and Wellness

**Department of Health, Physical Education and Wellness**

A medical examination is required every two years. A College Medical Form can be secured in the Health Service Office, Loew 101. Students unable to participate in any activity course for medical reasons must make an appointment to see the College nurse upon admission to the College.

**CPR 10** 1 lab 1 cr  
Cardiopulmonary Resuscitation  
(Does not fulfill PEA requirement)  
Designed to develop basic life support; knowledge and skill in cardiopulmonary resuscitation (clearing obstructed airways and mouth to mouth resuscitation). Students meeting the American Red Cross standards will receive ARC certification.

**PEA 11** 2 rec 1 cr  
Fitness for Life  
Designed to assist students in evaluating their present level of fitness and to provide opportunities for self-improvement. Selection from the following aerobic activities: weight training, jogging, fitness games, interval training and exercise bikes.

**PEA 12** 2 rec 1 cr  
Elementary Hatha Yoga  
Progressive exercises designed to improve flexibility, develop efficient breathing and apply relaxation techniques. History of yoga, physiological benefits, stress management techniques, nutritional aspects and body awareness are interwoven to emphasize the integral nature of body and mind.

**PEA 14** 2 lab 1 cr  
Aerobic Dance  
Students participate in aerobic dance to improve cardiovascular fitness; activities designed to develop nutritional and weight maintenance programs.

**PEA 15** 2 lab 1 cr  
Walking, Jogging and Weight Training  
Walking, jogging and weight training to develop cardiovascular endurance and muscle toning. Students are placed in individualized programs in jogging and weight training.
COURSE DESCRIPTIONS

PEA 16 2 lab 1 cr Strength and Flexibility Training Through Pilates
In this course students will learn a challenging series of mat exercises have proven to be effective for creating long, strong, well-toned, flexible muscles. Students will study skeletal structures and major muscle groups, so that they may support their exercise routines with efficient alignment and coordinated breathing.

PEA 21 2 rec 1 cr Beginning Swimming Level
Basic water safety skills and knowledge to make an individual reasonably safe while in, on, or about the water. Registration limited to non-swimmers.

PEA 22 2 rec 1 cr Intermediate Swimming Level
Basic elements of good swimming; includes swimming techniques with emphasis upon mastering form and endurance in the front crawl, back crawl, elementary backstroke and deep water survival skills.
Prerequisite: PEA 21 or the ability to swim at least 25 yards using a crawl and/or backstroke.

PEA 23 2 rec 1 cr Swimming
Intended for students beyond the intermediate swimming level. Emphasis on mastering form and endurance in crawl, back crawl, breaststroke, butterfly and sidestroke. Also covers competitive techniques of swimming, survival skills, and basic skin diving.
Prerequisite: PEA 22 or ability to swim at least 50 yards, using a crawl stroke and/or backstroke in deep water.

PEA 24 2 rec 1 cr Lifeguard Training
Development of skills and knowledge essential for a person to qualify as a nonsurf lifeguard. Successful completion of this course qualifies student for American Red Cross Lifeguard Training Certificate. Students should expect to spend approximately $30 to cover the cost of certification.
Prerequisite: Ability to swim 500 yards, employing front crawl, breaststroke, elementary backstroke and sidestroke.

PEA 25 1 lect 2 rec 2 cr Water Safety Instructor*
Course prepares the student to teach American Red Cross Water Safety courses. Successful completion of this course qualifies student for an American Red Cross Water Safety Instructor certificate. Students should expect to spend $30 to cover the cost of certification.
Prerequisite: Student must be at least 17 years of age and have the ability to perform the American Red Cross swimmer level skills and the elementary backstroke, breaststroke, sidestroke, crawl stroke and back crawl.

PEA 27 2 rec 1 cr Basic Skin Diving and Scuba Diving†

PEA 28 2 rec 1 cr Water Aerobics
Water exercise geared to improvement of posture, muscle tone and general coordination while increasing strength, flexibility and endurance. Students enjoy the benefits of invigorating exercise without stress in a relaxing pool environment. Open to swimmers and non-swimmers.

PEA 30 2 lab 1 cr Introduction to Volleyball
Basic skills related to volleyball: setting, underhand passing, blocking and spiking. Ten strategy and various offensive combinations as well as terminology and rules.
PEA 33
Beginning Tennis 4 rec 7 1/2 wks 1 cr
Fall semester first 7 1/2 weeks; spring semester last 7 1/2 weeks. Students will be notified of starting date. For beginning players. Skills include the forehand, backhand and serve plus elementary singles and doubles strategy. All equipment furnished by College. Meets two times a week, 2 rec. per session for 7 1/2 weeks.

PEA 41
Techniques of Jazz Dance 2 rec 1 cr
Basic techniques of jazz dance; development of new dance skills including kicks, turns, isolations, stretches, and traveling movements that will increase the ability to perform to contemporary music and to express oneself through dancing. Students will also have the opportunity to create original movement and to analyze dance on video.

PEA 46
African, Caribbean and Black Dance Forms† 1 lect 2 rec 2 cr

PEA 47
Beginning Salsa 2 lab 1 cr
In this course students will master the beginning Salsa dance steps so that they may feel comfortable in social dance situations. Dance technique will include handholding positions, rhythm, accuracy, leading and following techniques, the basic step and variations, shins, turning, and dipping. Students will also learn about the history of Salsa dancing and music, and its current worldwide influence.

PEA 51
Stress Management 1 lect 2 lab 2 cr
The lectures focus on discussions of psychological and behavioral approaches to stress management. The lab work combines a variety of relaxation and exercise techniques which teach the student to combat the negative physical effects of stress. The core of the course is student development of a personal stress management plan to best address each individual's needs. Additionally, active stress management skills will significantly benefit our students as they move forward into careers in Health Education and Therapeutic Recreation.

Corequisites: EN 01 or RD 01 if required

PEA 71, 72, 73
Varsity Athletics 1 cr hours arranged
Students may enroll in one or more of the following intercollegiate athletic courses and receive up to three credits for work in such courses. Admission to each course, which is based on tryouts and permission of the instructor, may be used to fulfill PEA requirements. Students opting to receive credit are required to participate in games, scrimmages, conditioning programs, practices, ongoing individual and team analysis, postseason tournament play, written assignments, team and individual statistics and a final examination. Students who wish to participate without course credit may do so.

Baseball (Men)
Basketball (Men & Women)
Indoor Track & Field (Co-ed)
Outdoor Track & Field (Co-ed)
Soccer (Men)
Soccer (Women)
Softball (Women)
Tennis (Men & Women)
Volleyball (Women)
Wrestling (Men)

PEA 81
Techniques of Self-Defense 2 rec 1 cr
Introduction to the skills and techniques of martial arts; judo, karate, jiu-jitsu and aikido for the purpose of understanding their value for self-defense.

PEA 82
Introduction to Tai Chi Chuan 2 rec 1 cr
Basic movements and beginner level forms of the Yang School of Tai Chi Chuan, ancient Chinese exercise system consisting of slow, rhythmical movements engaged in for health, meditation and self-defense by men and women of all ages. The movements are non-strenuous, easy to do and are intended to bring greater harmony to mind and body.
### Recreational Services

#### Rec 93  Introduction to Therapeutic Recreation  
3 rec 3 cr  
Provides an overview of therapeutic recreation programs provided in clinical or community settings for the physically, mentally, socially or emotionally disabled. This course examines basic concepts and models of service with field observations.  
**Prerequisite:** ENG 01 and RDL 01 if required.  
**Corequisite:** ENG 02 or RDL 02 if required.

#### Rec 94  Recreation: Historical and Philosophical Perspective  
3 rec 3 cr  
Reviews the historical development of recreation and leisure, and examines theories of play, recreation and leisure. It includes an exploration of the functions of organized recreation in the US today and enables individuals to develop a personal philosophy of leisure.  
**Prerequisite:** REC 93

#### Rec 95  Program Planning and Leadership in Recreation  
3 rec 3 cr  
This course is designed to explore concepts, techniques, and strategies in recreational program planning, scheduling and operation in public, voluntary, therapeutic, and commercial settings. Basic principles and practices in group leadership.

#### Wfa 10  Workplace First Aid Training  
2 lab 1 cr  
Designed to provide individuals in the workplace with First Aid, CPR for Professional Rescuer and Automated External Defibrillator (AED) knowledge and skills necessary to recognize and determine basic emergency care for injuries and sudden illnesses until advanced medical personnel arrive and take over. This course will contain first aid skills and knowledge in blood borne pathogen exposure, treatment for wounds, broken bones, head and spinal injury and burns. This course will also include: CPR training in rescue breathing obstructed airway, and performance of cardiopulmonary resuscitation, Bag-Valve Mask, and two-rescuer skills.  
**Corequisite:** ENG 01 and RDL 01 if required.

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### Physics I

#### Phy 11  College Physics I  
2 lect 1 rec 2 lab 4 cr  
Introduction to principles and methods of physics. Topics include Newton’s Laws of Motion, mechanics, heat, and sound. (Recommended for Liberal Arts and life science majors, including biology and psychology.)  
**Prerequisite:** Intermediate Algebra or MTH 06.  
**Corequisite:** ENG 02 or RDL 02 if required.

#### Phy 12  College Physics II  
2 lect 1 rec 2 lab 4 cr  
Elements of electric circuits, electromagnetic theory, light, selected topics in atomic and nuclear physics.  
**Prerequisite:** PHY 11.

#### Phy 21  Physics for Engineering Technology I  
2 lect 1 rec 2 lab 4 cr  
Statics, kinematics, dynamics, work and energy, circular motion, and simple harmonic motion with special applications to problems in technology.  
**Prerequisite:** Intermediate Algebra or MTH 06  
**Corequisite:** ENG 02 or RDL 02 if required.

#### Phy 22  Physics for Engineering Technology II  
2 lect 1 rec 2 lab 4 cr  
Fluid dynamics, thermodynamics, electricity and magnetism, optics, superconductors.  
**Prerequisite:** PHY 21.

#### Phy 24  Principles of General Physics  
3 rec 3 lab 4 cr  
Basic principles of general physics; survey of mechanics, heat, electricity, magnetism, optics and modern physics. (This course does not fulfill the physics requirement for curricula requiring a year or more of physics.)  
**Prerequisite:** MTH 06 or equivalent.

#### Phy 31  Physics I  
2 lect 2 rec 2 lab 4 cr  
Statics and dynamics of particles and rigid bodies; force and motion; energy and momentum; rotational motion, elasticity and simple harmonic motion. First semester of a three-semester sequence for students in Engineering or Computer Science (PHY 31, 32, and 33). Also recommended for Science or Mathematics majors in a Liberal Arts and Sciences transfer program.  
**Prerequisite:** High School physics or PHY 01.  
**Corequisites:** MTH 31 and ENG 02 and RDL 02 if required.

#### Phy 32  Physics II  
2 lect 2 rec 2 lab 4 cr  
Hydrostatics and hydrodynamics; properties of gases; thermodynamics and kinetic theory of matter; wave motion; sound; electrostatics.  
**Prerequisite:** PHY 31.  
**Corequisite:** PHY 32.
PHY 33  
**3 lect 2 rec 3 lab/alt wks 4 cr**  
*Physics III*  
Electromagnetic theory; direct and alternating currents; electromagnetic waves; geometrical and physical optics; modern physics.  
**Prerequisite:** PHY 32.  
**Corequisite:** MTH 33.

PHY 35  
**3 lect 3 cr**  
*Thermodynamics*  
**Prerequisites:** CHM 11 and PHY 32.  
**Corequisite:** MTH 33.

PHY 40  
**2 rec 2 lab 3 cr**  
*Physics of Light and Sound*  
A qualitative treatment of wave phenomena and associated properties of light and sound; reflection, refraction, image formation, optics of the eye, interference and diffraction sound, sympathetic vibrations, acoustical properties, laser applications, music. (Required for students in Media Technology.)  
**Prerequisite:** MTH 03.

PHY 51  
**3 lect 2 lab 3 cr**  
*Modern Physics*  
Elementary quantum theory, quantum numbers, atomic shell structures and the periodic table; structure of solids, band theory of metals, insulators, semiconductors; x-rays and gamma radiation; relativity; nuclear physics.  
**Prerequisite:** PHY 33.  
**Corequisite:** MTH 34.

PHY 61  
**2 lect 2 lab 3 cr**  
*Computer Methods and Programming for Applied Scientific Purposes*  
Algorithms; introduction to computer systems and computer logic; programming languages (e.g., FORTRAN); data representation; computer solutions to problems in Engineering Science, Physics, and Mathematics, using numerical methods to include numerical integration, numerical differentiation, method of least squares; random number generation and probability.  
**Prerequisites:** MTH 15 or MTH 31 and one semester of college physics, or permission of the department.

**COURSE DESCRIPTIONS**

POL 21  
**3 rec 3 cr**  
*State and Local Government*  
How the American states and localities govern themselves. Relationships with the national government; governors, legislators, and judges; finances; metropolitan and local governments; public policy issues. Attention on special situations of New York City and State.  
**Prerequisites:** POL 11 or permission of the department.

POL 31  
**3 rec 3 cr**  
*Comparative Government*  

POL 51  
**3 rec 3 cr**  
*Urban Politics*  
Politics and government of the American city; municipal political institutions, suburban and metropolitan government, relations with the state and federal governments, racial and ethnic politics, planning, crime and the police, public education.  
**Prerequisite:** POL 11 or SOC 11 or permission of department.

POL 81  
**3 rec 3 cr**  
*Independent Study and Entrepreneurships in Government*  
Permission of Instructor required

*Not offered on a regular basis. Course descriptions available upon request.*

**PSYCHOLOGY**  
Department of Social Sciences

PSY 11  
**3 rec 3 cr**  
*Psychology*  
Scientific method in the understanding of human behavior. Introductory study of growth and development, motivation, emotions and mental health, learning, intelligence and personality evaluation.  
**Corequisite:** ENG 02 or RDL 02 if required.

PSY 22  
**3 rec 3 cr**  
*Social Psychology*  
Introduction to social psychology, focusing upon the nature of aggression and violent behavior; role of social influence in determination of deviant and conformist behavior, attitude change and decision making, affiliation, primary and group relationships, social norms and interrelationship of personality and culture.  
**Prerequisite:** PSY 11.

PSY 31  
**3 rec 3 cr**  
*Abnormal Psychology*  
Major forms of psychological disorders, such as neuroses, psychoses, psychosomatic disturbances and character disorders; their origin, development and treatment.  
**Prerequisite:** PSY 11.

PSY 35  
**3 rec 3 cr**  
*Dynamics of Human Motivation*  
Introduction to complex human motivation; emphasis on interaction of conscious and unconscious motives, inner conflict, and adaptive and maladaptive coping techniques. Applications to relevant contemporary problems, such as child rearing, psychotherapy, education and drug addiction.  
**Prerequisite:** PSY 11.

**POLITICAL SCIENCE**  
Department of Social Sciences

POL 11  
**3 rec 3 cr**  
*American National Government*  
Survey of structure and activities of the national government: bases of present political system, pressure groups, political parties, elections, Congress, the President, the Supreme Court, and the protection and deprivation of individual rights.  
**Corequisite:** ENG 02 or RDL 02 if required.
PSY 40  3 rec  3cr
Life Span Development
This course enables students to understand human growth and development, from conception through late adulthood, in varied contexts and cultures. The emphasis is on the interaction between biological, cognitive and social changes over time, within families and within communities. Research data and key ideas, not only from psychology and sociology, but also from neuroscience, genetics, economics, and anthropology are included. The goal is to provide students with a solid understanding of the causes and manifestations of human behavior.
Prerequisite: PSY 11.

PSY 41  3 rec  3cr
Psychology of Infancy and Childhood
Major factors in psychological development from infancy through childhood; influence of the family Biological, cultural, and socio-economic factors in producing normal and abnormal intellectual and emotional growth.
Prerequisite: PSY 11.

PSY 42  3 rec  3cr
Psychology of Adolescence and Adulthood
Study of development from adolescence to adulthood with regard to implications for self-realization, love, marriage, vocation, parenthood, retirement and aging. Changing attitudes and values about sex, drugs, aging and politics are explored in regard to different stages of adult development.
Prerequisite: PSY 11.

PSY 43  3 rec  3cr
Psychological Development During Maturity and Aging
Normal and abnormal psychological development during adulthood and old age. Emphasis on dynamics of the life cycle; theories of the mature personality, forces affecting continuing growth of the adult personality and intellect; biological, social and cultural determinants of aging, and influence of normal and abnormal aging processes on perception, psychomotor skills, learning, intelligence, and personality.
Prerequisite: PSY 11.

PSY 44  3 rec  3cr
Psychology of Women
Development, personality characteristics, and needs of women; similarities to and differences from men. Psychological aspects of uniquely feminine experiences. Issues are examined from a theoretical as well as an empirical perspective.
Prerequisite: PSY 11.

PSY 51  3 rec  3cr
Principles of Group Dynamics
Introduction to theory of group behavior, including analysis of the psychological structure of groups, cohesive and disruptive forces, conflict and adjustment in group relationships and relationship of groups to society.
Prerequisite: PSY 11.

PSY 71  3 rec  3cr
Clinical Techniques of Assessment: The Interview
Interpersonal approach in assessing psychological problems of individuals and minigroups. Practical experience with clinical interview techniques; psychological evaluation of data and case history write-ups. Methods of referral to appropriate professional and community resources are discussed.
Prerequisite: PSY 11.
PSY 81 3 rec 6 hrs field work 3 cr
Field Work and Seminar in Psychology I
Supervised field work or independent research. Required seminar integrates practical experience with coursework.
Prerequisites: 6 credits in the social sciences (Economics, Political Science, Psychology, Sociology) and/or permission of the department; 6 of these credits must be in Psychology.

RADIOLOGIC TECHNOLOGY
Department of Nursing and Allied Health Sciences

All Radiologic Technology (CLE and RAD) courses are open only to Radiologic Technology majors. CLE courses are given at Our Lady of Mercy Medical Center, Montefiore Medical Center, New York Presbyterian Medical Center, Jacobi Medical Center.

CLE 11 Clinical Education I
14 days 1 cr
Students function as learning members of the hospital’s radiology department under laboratory conditions. Experience in patient preparation, selection of proper technical factors, administration of ionizing radiation for diagnostic examination with appropriate radiation protection control. Close supervision to develop and evaluate students’ clinical skills. Film Evaluation included.
Prerequisites: BIO 23, MTH 13.
Corequisites: RAD 11, 12, 13, 14, 15, 16.

CLE 21 Clinical Education II
28 days 1 cr
Continuation of Clinical Education I. Film Evaluation included.
Prerequisite: CLE 11.

CLE 31 Clinical Education III
29 days 1.5 cr
Continuation of Clinical Education II. Film Evaluation included.
Prerequisite: CLE 21.

CLE 41 Clinical Education IV
40 days 1 cr
Continuation of Clinical Education III. Film Evaluation included.
Prerequisite: CLE 31.

CLE 51 Clinical Education V
40 days 1 cr
Continuation of Clinical Education IV. Film Evaluation included.
Prerequisite: CLE 41.

RAD 12 1 lect 3 lab 2.5 cr
Radiographic Exposure I
Study of formation of the radiographic image with emphasis on production of quality radiographs. Topics include radiographic exposure factors; density, contrast, recorded detail and distortion; devices to improve radiographic quality such as grids, and pathology affecting radiographic exposure factors.
Prerequisites: MTH 13.
Corequisite: CLE 11.

RAD 13 2 lect 3 lab 3 cr
Radiographic Procedures I
Covers detailed information on various standard positions of structures and organs of the body; practical instruction and application in laboratory and clinical environment. Film Evaluation included.
Corequisites: CLE 11, RAD 11, 15.

RAD 14 2 lect 1 cr
Radiographic Processing
History and development of x-ray film and dark-room accessories; chemical constituents of processing solutions and their functions; theory of the photographic process; radiographic film artifacts and their causes.
Corequisite: RAD 12.

RAD 15 1 lect 2 lab 2 cr
Topographic Anatomy I
Structure and function of human anatomy in all body planes with emphasis on the topographic mode. Film Evaluation included.
Prerequisite: BIO 23.
Corequisite: RAD 13.

RAD 16 1 lect 3 lab 2.5 cr
Patient Care and Pharmacology
Provides students with basic concepts of patient care, including consideration of physical and psychological needs of patient and family. Routine and emergency patient care procedures as well as infection control procedures and Universal Precautions, drug interactions and pharmacology. Lab practice is integrated to enhance the development of patient care skills.
Prerequisites: BIO 23 or equivalent; MTH 13 or equivalent.

RAD 22 1 lect 3 lab 2.5 cr
Radiographic Exposure II
Continuation of RAD 12. Examination of technique guides, technical conversions, AEC, contrast, recorded detail distortion and effects of pathology on technique.
Prerequisites: RAD 12.
Corequisite: CLE 21.

RAD 23 2 lect 3 lab 3 cr
Radiographic Procedures II
Continuation of RAD 13. More detailed and complex positions of the structures and organs of the body; film evaluation, practical instruction and application in the laboratory and clinical environment.
Prerequisites: RAD 12, 13, 14, 15, 16.
Corequisite: RAD 25.
RAD 24 2 lect 2 cr
Radiation Protection
Enables student radiologic technologists to recognize the need for good radiation protection procedures which provide minimum exposure to patients and personnel. Topics include interactions of radiation with matter; units and measurement of radiation; maximum permissible dosages; methods for minimizing operator and patient exposure.
Prerequisites: RAD 11.

RAD 25 1 lect 1 cr
Topographic Anatomy II
Continuation of RAD 15. Structures and function of human anatomy in all body planes with emphasis on the skull and spine. Film Evaluation included.
Prerequisite: RAD 15.
Corequisites: BIO 24.

RAD 32 1 lect 2 lab 2 cr
Imaging Modalities
Study of various imaging systems and their application in radiography. Various recording media and techniques are discussed. Some imaging systems described are Mobile Units, Image Intensification, Video Tube and Recorders, CT, Digital Imaging, and MRI.
Prerequisites: RAD 22, 23, 25.

RAD 33 1 lect 3 lab 2 cr
Radiographic Procedures III
Radiographic positioning of specialized procedures in radiography, the equipment, contrast media used and general indications for each examination. Digestive system; urinary system; female reproductive system; lymphatic system; myelography; cerebral angiography; interventional radiography; arthrography, and mammography will be discussed. Film Evaluation included.
Prerequisites: RAD 23, 25, CLE 21.
Corequisites: RAD 32, 34.

RAD 34 1 lect 2 lab 2 cr
Radiographic Pathology
Survey of medical and surgical diseases to acquaint the student with changes caused by disease which relate to radiography. Emphasis on pathogenesis, signs, symptoms, diagnosis and treatment. Film Evaluation included.
Prerequisite: BIO 23, 24.

RAD 42 2 lect 2 cr
Fundamentals of Radiation Biology
Comprehensive study of the radiation effects on cells including direct and indirect action of ionizing radiation; damage induced by free radicals in DNA; interpretation of survival data; radiation genetics; radiation effects on embryos; delayed effects; radiation safety and health physics.
Corequisite: RAD 71.

RAD 43 3 lab 1 cr
Quality Assurance
Topics include concepts of a quality assurance program, state and federal regulations, densitometric monitoring, film-screen contact, protective device integrity, radiographic illuminators, kVp accuracy, timer accuracy and mAs reciprocity. Mammography QA will be discussed.
Prerequisites: RAD 22, 32.
Corequisite: RAD 71.

RAD 71 1 lect 3 lab 2 cr
Radiation Physics
Elements of atomic and nuclear physics, interaction of radiation with matter; radioactivity, half-life; elements of health physics.
Prerequisite: MTH 13, RAD 12, 22.

*RAD and CLE courses are open only to students with full matriculation status in the Radiologic Technology curriculum. The minimum acceptable grade is C+ in RAD courses, and C+ in CLE courses. Students who achieve less than the minimum grade in one RAD or CLE course may not register for any RAD or CLE courses for the next semester. They may repeat the course the following year. Students may only attempt a RAD or CLE course twice. Students who achieve less than the minimum grade in any combination of the following: rate of reading; test-taking techniques; and/or recommended as an elective.

<br>**READING**

Department of Education and Reading

RDL 01 5 rec 0 cr
Basic Reading Skills
Individualized program in fundamental reading skills with emphasis on phonics and syllabication, word structure, and sentence and paragraph analysis on student's instructional level. Required as indicated by placement scores.

RDL 02 5 rec 0 cr
Reading and Study Skills
Individualized program designed to develop reading and study skills necessary for success in college-level work. Vocabulary development, comprehension skills, textbook techniques, and library and research techniques.
Prerequisite: RDL 01 or as required by placement scores.

RDL 05 3 rec 0 cr
Basic Reading for ESL Students
An introductory program designed to help beginning ESL students expand their reading knowledge of English through extensive and intensive reading practice. Development of techniques to facilitate comprehension of words, sentences, and paragraphs for increased reading speed and improved comprehension.
Prerequisite: Registration only by Department placement.

RDL 11 2 rec 2 cr
College Reading and Study Skills
Advanced course to increase proficiency in reading and study strategies. Student and instructor jointly develop an individual program based on the student’s expressed interests and diagnosed needs. The program might focus on any combination of the following: rate of reading; test-taking techniques; reading in the content areas; textbook reading and study techniques, critical and interpretive reading. (Required as indicated by placement scores, and/or recommended as an elective.)

RDL 21 3 rec 3 cr
Reading in the Sciences and Technologies
Advanced reading and study skills to obtain, utilize, and retain information from texts in the sciences and technologies. Application of scientific and technical vocabulary, critical and interpretive comprehension, and study and test taking skills will be related to students’ curriculum needs and interest.
Prerequisite: RDL 02 if required.
SECURITY MANAGEMENT
Department of Business and Information Systems

SCR 11 3 lec 3 cr
Introduction to Security
An introduction to the historical, philosophical and legal basis of the security field. Overview of school and campus security, hospital security, housing security, etc. Security organizations, their policies and personnel are evaluated. Emphasis is placed on creating security awareness, relations with other organizations and security’s place in the corporate structure.
Prerequisite: ENG 02 or RDL 02 if required.

SOCIOLOGY
Department of Social Sciences

SOC 11 3 rec 3 cr
Sociology
Introduction to the scientific study of human life as group life. Culture and personality, courtship, marriage and family; religious behavior; education and communication; theories of social stratification and social change.
Corequisite: ENG 02 or RDL 02 if required.

SOC 31 3 rec 3 cr
Race and Ethnic Relations
Characteristics of American ethnic minorities and religious groups, including theories explaining prejudice and discrimination. Intergroup relations, with particular reference to the New York metropolitan area, and techniques for relieving problems in human relations.
Prerequisite: SOC 11.

SOC 32 3 rec 3 cr
Sociology of the City*

SOC 33 3 rec 3 cr
Marriage and the Family
Introduction to the study of the family as a social institution. Evolution of form and functions of the family and how its structure is shaped by forces in society. Significance of family as a socialization agent, courtship and the romantic love complex, women’s roles and changing family structure, minority culture families in American society and consideration of the future of the family.
Prerequisite: SOC 11.

SOC 34 3 rec 3 cr
Social Deviance
Explores what is regarded as deviant within a society, with emphasis on criminality and mental illness. Deviance from the perspective of the deviant, e.g., the process by which the initial deviance becomes a career or master status. Deviance from the perspective of society, its social structure, norms and sanctions relevant to deviance, and functions or dysfunctions served by those committing acts of deviance.
Prerequisite: SOC 11.

SOC 35 3 rec 3 cr
Introduction to Social Work
Nature of social work and its functions; family casework, child welfare, psychiatric and medical social work, correctional services, public welfare and community welfare organizations.
Prerequisites: SOC 11 or PSY 11 or permission of instructor.

SOC 37 3 rec 3 cr
Class and Power in American Society
Examines social inequality as it impinges on concrete lives of people in society, with focus on American society. Deals with social stratification, social class, status, race, ethnicity, gender, prejudice and discrimination.
Prerequisite: SOC 11 or permission of department.

SOC 38 3 rec 3 cr
Social Advocacy
Introduction to roles and problems of advocates in the social services system; nature, need and processes of advocacy; legal administrative aspects of social services programs (social security, welfare, family court); advocating rights of special groups (handicapped, poor, youth, aged).
Prerequisite: POL 11 or SOC 11 or department permission.

SOC 39 3 rec 3 cr
Religion and Society*
* Not taught on a regular basis. Course descriptions available upon request.

SPANISH
Department of Modern Languages

SPN 10 4 rec 4 cr
Spanish for Heritage Speakers
An intensive introductory course with emphasis on reading and writing for students of hispanic heritage born and/or educated in the United States who demonstrate aural comprehension. The course will consist of Spanish grammar, selected readings, and essay writing.
Prerequisite: Placement based on department examination result.

SPN 11 4 rec 4 cr
Beginning Spanish I
Pronunciation; language structure; conversation and reading of simple texts; dictation. Audio laboratory practice.

SPN 12 4 rec 4 cr
Beginning Spanish II
Continuation of SPN 11. Language structure; conversation; reading of elementary literary texts; dictation.
Prerequisite: SPN 11 or placement test.

SPN 13 4 rec 4 cr
Intermediate Spanish
Advanced language structures; conversation; reading, translation and discussion of modern texts; composition.
Prerequisite: SPN 12 or placement test.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPN 14</td>
<td>4 rec 3 cr</td>
<td>SPN 13 or 17 or placement test.</td>
<td>Practical Writing Skills for Spanish-Speaking Students. Readings in Spanish on current events or model personalities used as a foundation for the development of reading, writing, and critical thinking skills. Students learn techniques to identify the thesis of a written work, to distinguish the thesis from sustaining facts, and to write a summary. Students also apply the learning skills and structures to other genres of writing, such as the creation of a curriculum vitae, reviewing theatrical works, doing expository writing, and business letters. Prerequisite: SPN 13 or 17 or placement test.</td>
</tr>
<tr>
<td>SPN 15</td>
<td>4 rec 4 cr</td>
<td>SPN 13 or 16 or placement test.</td>
<td>Spanish for Urban Conversation and Careers I. For non-Spanish-speaking students. Intensive conversation course emphasizing practical and realistic situations including business, community, and civil service areas. Use of audio lab required.</td>
</tr>
<tr>
<td>SPN 16</td>
<td>4 rec 4 cr</td>
<td>SPN 15 or placement test.</td>
<td>Spanish for Urban Conversation and Careers II. Continuation of SPN 15. Conversation based on social and work situations. Use of audio lab required. Prerequisite: SPN 15 or placement test.</td>
</tr>
<tr>
<td>SPN 17</td>
<td>4 rec 4 cr</td>
<td>SPN 13 or 16 or placement test.</td>
<td>Advanced Spanish Conversation. Continuation of SPN 16. Students participate in dialogues and conversations related to contemporary problems and everyday situations to improve conversational skill. Course conducted in Spanish. Prerequisite: SPN 13 or 16 or placement test.</td>
</tr>
<tr>
<td>SPN 18</td>
<td>4 rec 4 cr</td>
<td>SPN 13 or 17 or placement test.</td>
<td>Elementary Spanish for Nurses and Hospital Personnel I. For non-Spanish-speaking students. Basic Spanish pronunciation, intonation and sentence structure; relevant medical terminology; idiomatic and colloquial expressions. Model dialogues on taking medical history; routine medical examination; diet and nutrition; nursing care; treatment instructions; pediatrics; cardiology; and others. Additional vocabulary according to the student's interests and field of medical specialization.</td>
</tr>
<tr>
<td>SPN 19</td>
<td>4 rec 4 cr</td>
<td>SPN 18 or placement test.</td>
<td>Elementary Spanish for Nurses and Hospital Personnel II. Review and continuation at a higher level of pronunciation, speaking and understanding. Additional vocabulary in new medical situations such as admissions, X-rays, and pregnancy. Prerequisite: SPN 18 or placement test.</td>
</tr>
<tr>
<td>SPN 20</td>
<td>3 rec 3 cr</td>
<td>SPN 13 or 17 or placement test.</td>
<td>Advanced Spanish Composition and Creative Writing. Style illustrations with literary texts, text analysis, reading for comprehension, paragraph construction, imitation of models, expository writing, translation of literary texts, thematic discussions, stylistic discussions, written reports on research. Prerequisite: SPN 13 or 17 or placement test.</td>
</tr>
<tr>
<td>SPN 21</td>
<td>4 rec 4 cr</td>
<td></td>
<td>Spanish Language and Culture. A literary and historical study of Spanish culture; develops basic language skills. Class discussions on social, historical and artistic values of Spain, past and present. Course conducted in Spanish. Prerequisite: SPN 13 or 17 or placement test.</td>
</tr>
<tr>
<td>SPN 23</td>
<td>3 rec 3 cr</td>
<td></td>
<td>19th-Century Spanish Literature: Romanticism and Realism*.</td>
</tr>
<tr>
<td>SPN 24</td>
<td>3 rec 3 cr</td>
<td></td>
<td>Don Quijote and Other Cervantes Masterpieces. Reading, discussion, analysis and written reports on selections from the original text of Don Quijote. Selections from Cervantes' Novelas Ejemplares. Course conducted in Spanish. Prerequisite: SPN 13 or 17 or placement test.</td>
</tr>
<tr>
<td>SPN 25</td>
<td>3 rec 3 cr</td>
<td></td>
<td>Generation of 1898. Literary analysis of selections from the principal writers of the movement. Reading, discussion, oral and written reports. Course conducted in Spanish. Prerequisite: SPN 13 or 17 or placement test.</td>
</tr>
<tr>
<td>SPN 26</td>
<td>3 rec 3 cr</td>
<td></td>
<td>Spanish for Business Communication. The purpose of this course is to give advanced-level students a foundation in Spanish business vocabulary, economic and cultural aspects of business in Spanish-speaking countries, and situational practice that will help prepare them for success in today's Spanish-speaking business world. Course conducted in Spanish. Prerequisite: Placement based on department examination result.</td>
</tr>
<tr>
<td>SPN 28</td>
<td>3 rec 3 cr</td>
<td></td>
<td>Interpreting and Translation Skills for Legal Personnel. Basic skills required for bilingual personnel serving the Hispanic community in the metropolitan area. Advanced Spanish course which emphasizes translating and interpreting for legal personnel. Students should be bilingual, fluent in both English and Spanish. Prerequisite: RDL 02 or ENG 02 if required, and SPN 13 or placement.</td>
</tr>
<tr>
<td>SPN 30</td>
<td>4 rec 4 cr</td>
<td></td>
<td>Literature and Culture of Puerto Rico. Survey of Puerto Rican history, culture and literature. Reading, discussion, oral and written reports based on representative Puerto Rican authors. Course conducted in Spanish. Prerequisite: Placement Test.</td>
</tr>
</tbody>
</table>
SPN 31  
4 rec  4 cr  
Literature and Culture of the Spanish Caribbean  
Study of contemporary literature and culture in Cuba, the Dominican Republic, and Puerto Rico. Reading, discussion, oral and written reports based on representative Cuban, Dominican, and Puerto Rican authors. Course conducted in Spanish.  
Prerequisite: Placement test.  
*Not offered on a regular basis. Course descriptions available upon request.

TAXATION  
Business and Information Systems Department  
TAX 11  
3 rec  3 cr  
Introduction to Taxation  
Study of the current Federal, New York State and New York City income tax laws and regulations: concepts of taxable gross and net income, deductions and exemptions as applied to various classes of individual taxpayers. Preparation of individual income tax returns on government forms.  
Prerequisite: BUS 11 and ACC 11 or permission of the department.

TELECOMMUNICATIONS  
Department of Physics and Technology  
TEC 11  
3 rec  2 lab  4 cr  
Voice Communications  
Introduction to techniques, principles, and terminology of voice telecommunications. Public and private telecommunication networks are examined. Telecommunication equipment, switching and transmission technology are demonstrated. Frequency spectrum modulation schemes and multiplexing techniques are explored. Lectures, interactive learning demonstrations. Laboratory exercises required.  
Prerequisite: ELC 25.  
Corequisites: ELC 25.

TEC 21  
3 rec  2 lab  4 cr  
Data Communications  
Introduction to techniques, principles, and terminology of data communications. Public and private networks are examined. Data communication equipment multiplexing and interactive learning, demonstrations. Laboratory exercises required.  
Prerequisite: ELC 25.  
Corequisites: TEC 11.

TEC 31  
3 rec  2 lab  4 cr  
Local Area Networks  
Introduction to the technology of local area networks (LANs). Topologies, transmission media, network interfaces, and the access methods are examined. Shared resources and interconnecting of LANs are explored. Lectures, interactive learning, demonstrations are employed. Laboratory exercises are required.  
Prerequisite: TEC 21.

TEC 413  
3 rec  2 lab  4 cr  
Advanced Topics in Telecommunications  
Survey of current and emerging technologies in telecommunications. Lectures, interactive learning, demonstrations, and site visits. Laboratory exercises required.  
Prerequisite: TEC 21.  
Corequisites: TEC 31.

WORD PROCESSING  
Business and Information Systems Department  
WPR 11  
5 rec  3 cr  
Transcription for Business  
Students will develop transcription skills necessary to transcribe simple documents. A review of grammar and punctuation along with an emphasis on spelling and word study skills will enable students to produce documents.  
Prerequisite: KEY 10.  
Corequisite: ENG 11, KEY 11, or permission of department.

WPR 21*  
3 rec  3 cr  
Word Processing Applications  
Students will learn the essential features and commands of current word processing software to improve productivity and efficiency in the creation of business documents.  
Prerequisite: KEY 10.  
Corequisite: KEY 11.

WPR 23  
3 rec  2 cr  
Office Supervision and Administration  
This course is designed to introduce students to the role and functioning of the office supervisor or administrator. Students will become familiar with the nature of supervisory issues as they relate to employees, other supervisors, and upper management.  
Prerequisite: WPR 21.

WPR 24  
3 rec  3 cr  
Presentations for Business  
Students will learn the concepts and practical applications of current presentation software. Topics will include producing text with graphic elements such as charts, graphs, and tables to general professional-looking flyers, reports, forms, letterheads, and slide presentations.  
Prerequisites: RDL 02, RDL 11, MTH 03 if required; ENG 11; WPR 21 or permission of Department.  
*WPR 21 may be waived with the approval of Curriculum Coordinator.