

Course Descriptions

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 for each 15 hours of course time (lecture or recitation hours) in classes for which considerable out-of-class preparation is required. In classes which do not require the same level of out-of-class preparation such as laboratory or studio hours/classes, clinic hours/classes, or physical or health education classes, a unit of two or three hours may equal one semester-hour.

- **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 and Corequisites

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 Electronic Engineering Technology students only)
- ELC 15 (corequisite MTH 05; recommended for Electronic Engineering Technology students only)
- GEO 10
- HIS 11
- HLT 91 and Physical Education courses

KEY 11

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

ART 11

ART 12

DAT 30

ECO 11

ECO 12

HIS 11

MUS 10

MUS 11

MUS 12

PEA (activity courses)

PHL 11

POL 11

PSY 11

SOC 11

Students who place out of **ENG 01** and **RDL 01**, and meet the corequisite of ENG 02 or RDL 02 may also register for the following credit-bearing courses:

CMS 11

CMS 20

CMS 22

CMS 61

CMT 10

REC 93

■ ACCOUNTING

Business and Information Systems Department

ACC 11 **5 rec 4 cr**

Fundamental Accounting I

Principles of accounting applied to single proprietorship. Journalizing and posting, adjusting and closing entries; preparation of the work sheet, balance sheet and income statement.

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

Department of Biology and Medical Laboratory Technology

ACM 90 **6 cr**

Animal Care and Management Internship

This will be a 500-hour hands-on experience for students who successfully complete the prerequisite courses. The internship will provide valuable opportunities through which students will be able to put into action the practices that they learned in the classroom. Students will focus on procedures and specific applications relating to basic veterinary care, feeding and nutrition, animal handling, animal housing, and sanitation procedures.

Prerequisites: BIO 15 with a grade of C+ or better and BIO 47. Students will be permitted two attempts in BIO 15 to achieve the C+ grade. A "W" will not count as an attempt. If a student takes the course two times, the two grades will be averaged in the student's GPA unless the first grade is an "F" and can be removed under the Repeat-Failure Policy.

■ 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 archeology; 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, and 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 principles 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

Fundamental techniques of pottery and ceramics. Emphasis on standards of design and development of craftsmanship. Art museum visits.

ART 42 **4 rec 2 cr**

Ceramics II

Building, decorating, and 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, and architectural monuments.

Prerequisite: ART 11 or by departmental permission.

Corequisite: ENG 02 or RDL 02 if required.

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

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.

Prerequisite: 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 typography survey covering history of type, from the stone age to the electronic age. Coursework 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 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.

ART 83 **4 studio 2 cr**

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 **4 studio 2 cr**

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 **4 studio 2 cr**

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 **4 studio 2 cr**

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.

Prerequisite: ART 84 or by departmental permission.

ART 88 **4 studio 2 cr**

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.

Prerequisites: ART 79 and ART 86 or by departmental permission.

ART 90 **4 studio 2 cr**

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.

Pre/Corequisite: ART 86 or by departmental permission.

ART 91 **4 studio 2 cr**

Design Portfolio

A project based seminar wherein the development of professional portfolios, print and/or multimedia is the goal, along with job-seeking skills.

Prerequisite: ART 81 or by departmental permission.

Pre/Corequisites: ART 86, ART 90 or by departmental permission.

ART 93 4 studio 2 cr

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.

Prerequisite: ART 88 or by departmental permission.

Pre/Corequisite: MUS 13 or departmental permission.

ART 95 4 studio 2 cr

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.

Prerequisite: ART 86 or by departmental permission.

Pre/Corequisite: ART 88 or by departmental permission.

ART 97 4 studio 2 cr

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 artworks and construct an effective and artistic interactive multimedia presentation.

Prerequisite: ART 87 or by departmental permission.

Pre/Corequisite: ART 93 or by departmental permission.

■ ASTRONOMY

Department of Physics and Technology

AST 11 2 lect 1 rec 2 lab 4 cr

Stellar Astronomy

This course covers early astronomy; astronomical coordinate systems; structure and evolution of the sun, stars and stellar systems; spectroscopy; the Milky Way and external galaxies; and cosmological models and implications.

Prerequisite: MTH 03 or permission of the department.

Corequisite: ENG 02 or RDL 02 if required.

AST 12 **2 lect 1 rec 2 lab 4 cr**

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.

Prerequisite: ENG 02 or RDL; MTH 03 or equivalent.

■ **AUTOMOTIVE TECHNOLOGY**

Department of Physics and Technology

ACS 10 **3 lab 1 cr**

Introduction to Automotive Technology

This course will introduce students to career choices in, and basic skills related to, the automotive industry. Topics covered include basic shop safety, overview of electrical principles and automotive systems and proper use of tools and diagnostic instrumentation.

Corequisites: ENG 02, RDL 02, MTH 05, if required.

ACS 11 **2 rec 4 lab 4 cr**

Engine Repair

A study of the modern internal combustion gasoline engine including basic principles of design and operation. This course covers disassembly, inspection and precision measuring and continues with reassembly including fitting and reconditioning parts. It also includes material covering engine support systems including cooling, lubrication and basic ignition system fundamentals and engine lubricants.

Corequisite: ACS 10

ACS 12 **1 rec 4 lab 3 cr**

Brake Systems

This course will study the design, operation and maintenance of the automotive brake system including diagnostics and servicing of rotors and drums, measuring and resurfacing. Anti-lock brake systems, traction control systems and front wheel drive axle shaft service are also covered.

Corequisite: ACS 10

ACS 13 **2 rec 2 lab 3 cr**

Engine Performance

This course begins with engine operation including conventional ignition systems and focuses on modern ignition techniques, engine, transmission and body control systems and other computer control systems. It explores modern diagnostic test techniques, equipment and procedures, and provides a thorough understanding of modern vehicle fuel control systems.

Prerequisites: ACS 11, ACS 24

ACS 14 **1 rec 4 lab 3 cr**

Manual Drive Train and Axle

This course covers both conventional rear-drive systems and front-drive configurations. It concentrates on transmission maintenance, service and repair, and includes drive line service and

repair of clutch, ring gear and pinion, differential case assembly, drive shaft, half shaft and four wheel drive systems.

Prerequisites: ACS 11, ACS 24

ACS 21 2 rec 3 lab 3 cr

Steering and Suspension Systems

A study of the design, operating principles and service of automotive suspension and steering systems including McPherson strut and multi-link designs, solid axle and independent systems. Tire construction, wear diagnosis and service are covered and emphasis is placed on wheel alignment procedures, including computerized four-wheel alignment. New technologies are covered including four-wheel steering, electronic steering, and computerized suspension systems.

Prerequisites: ACS 10, ACS 24

ACS 22 1 rec 6 lab 4 cr

Automatic Transmission and Transaxle

This course begins with the basics of hydraulics and how they are applied to traditional automatic transmissions with rear drive vehicles and focuses on modern computer controlled transaxle applications. It includes in-car and out-of-vehicle service, maintenance, repair and adjustment using modern diagnostic techniques and equipment.

Prerequisites: ACS 11, ACS 24.

ACS 23 2 rec 3 lab 3 cr

Heating and Air Conditioning

A study of vehicle climate control systems including heating and air conditioning. Includes theory, operational specifics, test procedures and service of factory and aftermarket equipment. It touches briefly on R12 system service and upgrades and focuses on 134A systems including testing, diagnosis, parts replacement and charging of A/C systems and troubleshooting electrical, electronic and mechanical heating and cooling system controls.

Prerequisites: ACS 10, ACS 24

ACS 24 2 rec 2 lab 3 cr

Electrical Systems

This course begins with the basics of electrical theory and advances through the operation of all 12 Volt systems used in the modern automobile including: storage batteries, alternator/charging systems, starter circuitry, wiring harnesses lighting and body accessories. The course places emphasis on the use of both DVOM technology and computer based diagnostics.

Corequisite: ACS 10

ACS 35 2 rec 3 lab 3 cr

Alternative Fuel Technology

This course will overview alternative fuels: ethanol, methanol, compressed natural gas (CNG), liquid natural gas (LNG), propane (LPG), hydrogen, electricity (including hybrids), and fuel cells. It will explain the sources and processing of alternative fuel. It will discuss alternative fuels currently in use and under development, and compare the benefits and drawbacks of each. It will explain lean burn technology, how combustion is different with a gaseous fuel, and major

policies and regulations pertaining to the installation, operation and inspection of alternate fuel vehicles.

Prerequisite: ACS 11

Corequisite: ACS 13

■ BIOLOGY

Department of Biology and Medical Laboratory Technology

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.

Prerequisites: MTH 03 or MTH 05, and 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, and 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.

Prerequisites: 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.

Prerequisites: 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 Office Assistant Program.

Prerequisites: 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.

Prerequisites: MTH 03 or MTH 05, and 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 **2 lect 4 lab 4 cr**

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 **2 lect 4 lab 4 cr**

Diagnostic Microbiology

Advanced study of microorganisms with emphasis on diagnostic techniques for identifying pathogens. Included are morphological, cultural, biochemical, serological methods, and antibiotic testing.

Prerequisite: BIO 43 and departmental approval.

BIO 46 **1 lect 3 lab 2 cr**

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 **1 lect 3 lab 2 cr**

Clinical Techniques for Medical Personnel II

Clinical laboratory techniques for a medical 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 18 and BIO 22; or BIO 21 and BIO 22; or BIO 11.

BIO 50 **2 lect 2 lab 3 cr**

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.

Prerequisites: RDL 02 and ENG 02 if required.

BIO 52 **3 lect 3 lab 4 cr**

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 and departmental approval.

BIO 55 **3 lect 3 cr**

Genetics

A survey of the major principles and concepts of the science of heredity. The course reviews classical Mendelian and non-Mendelian genetics. It covers modern genetics including the molecular basis of heredity, gene regulation, developmental genetics, population genetics and biotechnology.

Prerequisites: BIO 12.

BIO 81 **3 lect 3 lab 4 cr**

Introduction to Medical Laboratory Technology

Basics of clinical laboratory science, focusing on human physiology and diagnostic testing.

Prerequisites: BIO 11, CHM 17 and departmental approval.

Corequisites: CHM 18.

BIO 82 **2 lect 4 lab 4 cr**

Clinical Hematology & Coagulation

Principles and practice of clinical laboratory techniques in hematology and coagulation: complete blood count, normal and abnormal smears, sedimentation rate and coagulation studies. Emphasis on both manual and automated techniques, principles and diagnostic implications.

Prerequisites: BIO 12, BIO 81 and CHM 18 and departmental approval.

BIO 83 **2 lect 4 lab 4 cr**

Clinical Chemistry

Basic principles of clinical chemistry and quality assurance. Clinical chemistry tests: glucose, renal function tests, serum proteins, hepatic profile, electrolytes, enzymes, and therapeutic drug monitoring. Emphasis on manual techniques, chemical principles and diagnostic implications.

Prerequisites: BIO 81, CHM 18 and MTH 13 and departmental approval.

BIO 84 **1 lect 4 lab 3 cr**

Clinical Instrumentation

Principles of operation, maintenance, calibration and quality control of clinical laboratory instrumentation (e.g., spectrophotometers, ion-specific electrodes, electrophoresis and chromatography systems, cell counters). Clinical significance of abnormal findings will be discussed.

Prerequisites: BIO 83 and departmental approval.

BIO 90 **4 cr**

Clinical Internship

One thousand hours of clinical laboratory training in a hospital laboratory. Placement for training is limited and cannot be guaranteed.

Prerequisite: Completion of all other requirements and 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, write a scientific paper, 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.

■ **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: Ms. Rebeca Araya.

■ 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.

BIS 23 **2 rec 2 lab 3 cr**

Advanced Web Page Design and Development

This course introduces advanced concepts of the World Wide Web to increase interactivity and enhance the appearance and impact of a Web page. Topics to be covered include graphics, creative layouts, image maps, framed Web pages, and JavaScript.

Prerequisites: ENG 11, KEY 10 or equivalent skill level with departmental permission, and BIS 13.

BIS 31 **2 lec 2 lab 3 cr**

E-Commerce

This course is structured to provide an understanding of the complexities of the marketplace for E-Commerce and the design, maintenance, and administration of a Web-based E-Commerce site. It will also include identification of some E-Commerce sites that are currently utilized in business.

Prerequisites: BIS 13 and BUS 10.

BUS 10 **3 rec 3 cr**

Introduction to Business

Introductory survey course to acquaint students with business as a field of study. Analysis of the role of business in society with emphasis on how the business system operates. Functional areas of accounting, marketing, finance, business law, management and information systems.

Corequisite: RDL 02 or ENG 02 if required.

BUS 11 **4 rec 3 cr**

Business Mathematics

Principles and problems of interest, bank discounts, purchase discounts, installment sales, payrolls, depreciation, profit distribution, taxes and insurance.

Prerequisite: MTH 01.

Corequisite: RDL 02 or ENG 02 if required.

BUS 41 **3 rec 1 lab 3 cr**

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 **3 rec 3 cr**

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 **3 rec 3 cr**

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 **3 rec 3 cr**

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 1 rec 2 lect 2 lab 0 cr

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 3 rec 3 lab 4 cr

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.

Corequisite: ENG 02 or RDL 02 if required.

CHM 11 1 rec 2 lect 3 lab 4 cr

General College Chemistry I**

Fundamental principles and theories of chemistry, aspects of atomic structure and bonding, chemical calculations, states of matter, solutions. Laboratory: chemical techniques and principles.

Prerequisites: Placement Exam or CHM 02; and MTH 03 or MTH 05.

CHM 12 1 rec 2 lect 3 lab 4 cr

General College Chemistry II

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.)

Prerequisite: CHM 11.

CHM 13 3 rec 3 cr

Chemistry in Daily Living

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, toxin drugs, chemicals and the mind.

Corequisite: ENG 02 or RDL 02 if required.

CHM 17 **1 rec 2 lect 3 lab 4 cr**

Fundamentals of General Chemistry I

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.

Prerequisites: Placement exam or CHM 02; and MTH 03 or MTH 05; and RDL 02

CHM 18 **1 rec 2 lect 3 lab 4 cr**

Fundamentals of General Chemistry II

Continuation of CHM 17. Ionic reactions; acid-base theories, pH, chemical equilibria, structure, nomenclature and properties of hydrocarbons, alcohols, ethers, carbonyls, acids, esters, fats, lipids, amino acids, proteins, and carbohydrates.

Prerequisite: CHM 17.

CHM 22 **1 rec 2 lect 6 lab 5 cr**

General Chemistry II with Qualitative Analysis

Emphasis on solutions, equilibria, acids and bases, ionization equilibria, solubility product, complexions, oxidation-reduction and survey of metallic and non-metallic elements, organic and nuclear chemistry. Laboratory: qualitative analysis of solutions, salts and alloys.

Prerequisite: CHM 11.

CHM 27 **2 lect 2 cr**

Principles of Laboratory Safety

Presents the basic concepts of laboratory safety. Topics covered include legal issues, chemical and biological hazards, storage, laboratory design, and emergency responses.

Prerequisite: CHM 11 or CHM 17.

***Required for students in Engineering Science and other science curricula. This course is not intended for non-science Liberal Arts.*

CHM 31 **1 rec 3 lect 4 lab 5 cr**

Organic Chemistry I

Structure, nomenclature, properties and reactions of organic compounds including electronic theory and mechanism. Laboratory: preparation, purification and identification of representative organic compounds.

Prerequisites: CHM 12, 18 or CHM 22.

CHM 32 **1 rec 3 lect 4 lab 5 cr**

Organic Chemistry II

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.

Prerequisite: CHM 31.

CHM 33 **2 lect 6 lab 4 cr**

Quantitative Analysis

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.

Prerequisite: CHM 22.

CHM 37 **1 rec 2 lect 3 lab 4 cr**

Quantitative Instrumental Analysis

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.

Prerequisite: CHM 22.

CHM 38 **1 lect 2 lab 2 cr**

Computer Applications in Chemistry

Introduction to computer applications in chemistry including: ChemOffice, Excel, PowerPoint, Internet searches and research, and molecular modeling programs.

Prerequisite: CHM 11 or CHM 17.

CHM 39 **3 lect 3 cr**

Foundations of Pharmaceutical Process Technology

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.

Prerequisite: CHM 22.

CHM 40 **3 lect 3 cr**

Pharmaceutical and Chemical Technology

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.

■ **COMMUNICATION**

Department of Communication Arts and Sciences

CMS 01 **3 rec 0 cr**

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 **1 rec 0 cr**

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 **3 rec 3 cr**

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 **3 rec 3 cr**

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.

Corequisite: ENG 02 or ENG 10 or RDL 02 if required.

CMS 12 **2 rec 2 cr**

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 **3 rec 3 cr**

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.

Corequisite: ENG 02 or ENG10 or RDL 02 if required.

CMS 22 **3 rec 3 cr**

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.

Corequisite: ENG 02 or ENG 10 or RDL 02 if required.

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

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

CMS 41 **3 rec 3 cr**
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 42 **3 rec 3 cr**
The Anatomy and Physiology of the Speech Mechanism

This course in the anatomy and physiology of the speech mechanism includes study of the anatomy and physiology of respiration, phonation, articulation, hearing, a discussion of speech acoustics and an introduction to the nervous system.

Prerequisite: CMS 11.

CMS 60 **3 rec 3 cr**
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 **3 rec 3 cr**
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.

Corequisite: ENG 02 or ENG10 or RDL 02 if required.

CMS 62 **3 rec 3 cr**
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 **3 rec 3 cr**
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.

Prerequisites: RDL 02, ENG 02.

Corequisite: CMS 11 or permission of the instructor.

CMS 75 3 rec 3 cr

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.

CMS 76 3 rec 3 cr

Acting II*

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

CMS 81 6 hrs field work/wk 3 cr

Seminar and Independent Study in Dramatic Arts with Field Projects

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.

CMT 10 3 rec 3 cr

Introduction to Television Technology

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.

Corequisite: ENG 02 or RDL 02, if required.

CMT 12* 3 rec 3 cr

Small Studio Color Television

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.

* Not offered on a regular basis.

CMT 14 2 rec 2 lab 3 cr

Digital Video Effects and Presentational Graphics

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.

CMT 23 **2 rec 2 lab 3 cr**

Field Television Production

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.

CMT 31 **3 rec 3 cr**

Sound Recording and Editing

Theory and practical hands-on experience in all phases of sound recording and editing as they apply to the production and post-production of sound creation and design for television, radio, film, music production and the web.

Prerequisite: CMT 10.

CMT 33 **2 rec 2 lab 3 cr**

Video Editing I

Provides theoretical and practical experience in video editing and post-production. Fundamental editing principles, aesthetics and styles will form the basis of hands-on exercises utilizing linear and non-linear editing systems.

Corequisite: CMT 12.

CMT 35 **2 rec 2 lab 3 cr**

Video Editing II

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.

CMT 51 **Min of 140 hrs/sem 3 cr**

Media Internship

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 G.P.A. under 2.0 take an internship.

Prerequisites: Minimum of 45 curriculum credits, including ART 71 and CMT 33, a completed resumé, and departmental permission.

CMT 53 **Min of 140 hrs/sem 3 cr**

Media Projects Lab

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.

Prerequisites: Minimum of 45 curriculum credits, including ART 71, CMT 33 and department permission.

■ **COMPUTER LITERACY**

Business and Information Systems Department

CPL 11 **2 lab 1 cr**

Computer Literacy

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.

Prerequisite: ENG 01 or RDL 01 if required.

■ **COMPUTER SCIENCE**

Department of Mathematics and Computer Science

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.

Prerequisite: 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; 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.

Corequisite: 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 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.

■ **COOPERATIVE EDUCATION**

Department of Student Development

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.

■ **CRIMINAL JUSTICE**

Department of Social Sciences

CRJ 11 **3 lect 3 cr**

Introduction to Criminal Justice

This course will familiarize students with the Criminal Justice system and four of its components: the police, courts, corrections and the juvenile justice system. At the end of the course, students should be able to describe the goals, organization and procedures of the Criminal Justice system, as well as the interrelationships of its four components.

Prerequisite or Corequisite: ENG 02 or RDL 02, if required.

CRJ 21 **3 lect 3 cr**

Introduction to Criminology

This course will explore theories and empirical research used to understand deviant and criminal behavior, and their implications for the control of crime. Applications of these theories to practice and in policy will be discussed.

Prerequisite or Corequisite: CRJ 11; ENG 02 or RDL 02, if required.

CRJ 22 **3 lect 3 cr**

Introduction to Policing

This course will examine the origins of American policing, focusing on police field behavior and issues that police departments face today.

Prerequisite or Corequisite: CRJ 11, ENG 02 or RDL 02, if required.

■ **DATA PROCESSING**

Business and Information Systems 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.

Prerequisites: DAT 10, DAT 30 or department 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.

Prerequisites: 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 of databases. Illustrations of business uses as well as case work will be addressed.

Prerequisites: DAT 10, DAT 30 or DAT 33 or departmental approval.

DAT 47 2 lec 2 lab 3 cr

JAVA Programming

An introduction to Web-based application programming, using JAVA 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 JAVA Programming

This course is a continuation of JAVA Programming (DAT 47). The Fundamentals of JAVA 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.

■ EARTH SYSTEMS AND ENVIRONMENTAL SCIENCE

Department of Chemistry and Chemical Technology

ESE 11 **2 lec 1 rec 3 lab 4 cr**

Earth Systems Science: The Earth

This course 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.

Prerequisites: ENG 02, RDL 02 if required.

Corequisite: MTH 03 or MTH 05.

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.

Prerequisites: ENG 02, RDL 02 if required.

Corequisite: MTH 03 or MTH 05.

ESE 13 **2 lec 1 rec 3 lab 4 cr**

Earth Systems Science: The Ocean

This course presents the scientific method in oceanography and basic concepts of ocean studies. The topics covered include the ocean in the earth system, properties of ocean water, ocean currents, the dynamic coast and the ocean, and climate change. In the lab students are introduced to the dynamic ocean by working with current (Internet) and archived oceanographic data coordinated with learning investigations keyed to current ocean activities and products. The course examines the world ocean with an Earth system perspective.

Prerequisites: ENG 02, RDL 02 if required.

Corequisite: MTH 03 or MTH 05.

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.

Prerequisites: Choice of two out of three courses from ESE 11, ESE 12, and ESE 13.

■ EDUCATION

Department of Education and Reading

All EDU courses are knowledge and competency based, enabling students to acquire teaching abilities.

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.

Prerequisite or Corequisite: EDU 10 and SPN 13.

EDU 24 **3 rec 3 cr**

Child Care Seminar I*

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.

**Offered Fall Semester only.*

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 conferences and 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.

Required for students interested in Child Care.

Prerequisite: EDU 24.

***Offered Spring Semester only.*

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**
Introduction to Special Needs, Schools and Society*

Designed to provide an understanding of the topics of critical importance to the intersection of persons with special needs, schools and society. This course will address a wide range of topics that include, without limitation: special needs legislation; special needs categories; special needs policy; adaptive technology; local and national inclusion policies; medical, psychological and sociological factors for persons with special needs; available services and resources for persons with special needs. Requires visits to childhood learning environments, with diverse socioeconomic needs, in a special needs setting. The use of technology is introduced as appropriate.

Prerequisite or Corequisite: EDU 10.

**Offered Fall Semester only.*

EDU 31 **3 rec 3 cr**
Introduction to Learning Disabilities and Inclusive Education**

Designed to provide an understanding of topics of critical importance to the local and national meanings of learning disabilities and inclusion. This course will address a wide range of topics that include, without limitation: definitions of learning disabilities; diagnostic-prescriptive support; an overview of inclusive education; student characteristics; organization and management of the inclusionary learning environment; diverse approaches to pedagogical practice; models of collaboration, including collaborative team teaching (CTT); classroom management; and assessment and utilization of assistive instructional technologies. Requires visits to childhood learning environments, with diverse socioeconomic needs in an inclusionary educational setting. The use of technology is introduced as appropriate.

Prerequisite: EDU 30.

***Offered Spring Semester only.*

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 competencies 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 protege 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 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 theorems, 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 **1 lect 2 lab 2 cr**

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.

Prerequisite: ELC 15.

Corequisite: MTH 06.

ELC 21 **3 rec 3 lab 4 cr**

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.

Prerequisite: ELC 11.

Corequisite: MTH 13 and RDL 02 or ENG 02 if required.

ELC 25 **3 rec 3 lab 4 cr**

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.

Electrooptical devices, power supplies, and switches are studied. The frequency response of passive networks and amplifiers is measured. Analysis by computer simulations is stressed.

Prerequisite: ELC 11 or ELC 31.

ELC 31 **3 rec 3 lab 4 cr**

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 **3 rec 3 lab 4 cr**

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 and oscillators; amplitude modulation, frequency modulations, phase locked loops; pulse modulation concepts; introduction to television; theoretical and hands-on trouble-shooting of test circuits; and analysis by computer simulation.

Prerequisite: ELC 25.

ELC 51 **2 rec 3 lab 3cr**

Electronic Controls

The course introduces discrete and continuous control systems. Open and closed loop systems are analyzed. The use of semi-conductor devices, operational amplifiers, programmable logic controllers and other topics are discussed.

Prerequisites: ELC 35, ELC 96.

ELC 81 **3 rec 3 lab 4 cr**

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.

Prerequisite: ELC 35.

Corequisites: ELC 18, PHY 22, MTH 15.

ELC 94 **3 rec 3 lab 4 cr**

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.

Corequisite: ELC 81.

ELC 96 **3 lect/rec 3 lab 4 cr**

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.

Prerequisite: ELC 13 or ELC 15.

Corequisite: MTH 10 or MTH 13 or MTH 30.

ELC 97 **3 lect/rec 3 lab 4 cr**

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.

■ **ENERGY SERVICES AND TECHNOLOGY**

Department of Physics and Technology

EST 11 **1 lec 1 rec 2 cr**

Introduction to Energy Technology

Introduces energy concepts and resources, energy conversion systems, institutions and global implications. Infrastructure and technology at micro-sale (household and personal electrification) and at macro-sale (transportation, electricity). Societal use patterns. Evolution of and alternatives to present dominant energy systems. Exercises in recognizing and evaluating energy infrastructure, use, waste and costs in everyday life.

Corequisites: ENG 02 and RDL 02, if required.

EST 15 **2 lect 1 rec 3 cr**

Energy Economics

A survey of market factors affecting the availability and pricing of various forms of energy, public policy dimensions, and the micro-economic decision-making of firms with respect to projects and investments. Utility regulation and rates. Project economic analysis and financing methods.

Corequisite: ECO 11 or ECO 12.

EST 21 **1 lect 2 lab 2 cr**

Energy Analysis of Mechanical and Electrical Equipment

Development of basic heat flow and thermodynamics concepts, emphasizing practice in applying basic concepts and analytical methods to physical systems and equipment. Application of thermodynamics and instrumentation for heuristic measures of system performance, characterization of efficiency, and as basis of energy audits. Fieldwork and lab benchwork demonstrating various kinds of systems and measurements.

Prerequisite: PHY 21.

EST 31 **2 lect 1 rec 3 cr**

Building Systems I

Introduction to building systems as related to energy use. Particular focus on thermal comfort, understanding and calculation of building loads. Coverage of mechanical (HVAC) and electrical systems, equipment components and the role of codes and standards within the industry.

Prerequisites: EST 11, PHY 21.

EST 32 **2 lec 2 lab 3 cr**

Building Systems II

Practicum/Internship course emphasizing quantitative analysis of energy use and opportunities for improvement in specific building systems and equipment. Students will work with actual building plan sets, energy use histories, and manual calculations, and be introduced to computer-modeling, including an option for projects at the student's place of work or assigned practicum or internship. Topics include quantity take-offs from plans, set-up, calibration and validation of building models, schematics and control sequences of operation, energy reduction analysis and green-building standards.

Prerequisites: EST 21, EST 31.

EST 41 **2 lec 1 rec 3 cr**

Principles of Energy Management I

An introduction to the principles of energy management in organizations. Energy purchasing and risk management. Energy auditing, project development, monitoring and verification for improvement in various systems. Practice with data management and spreadsheet applications. Organizational aspects of energy accounting, use and management.

Prerequisite: EST 21.

Corequisite: EST 31.

EST 42 **1 lec 2 rec 3 cr**

Principles of Energy Management II

Capstone practicum course in which students will conduct and prepare an energy audit of a specific facility (selected in consultation and with approval of the instructor) and create a strategic plan for gaining organizational commitment to energy management goals and a specific energy management implementation. Classes review technical measures and methods, and organizational analysis in the context of student field projects.

Prerequisites: EST 21, EST 31.

■ **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 may not register for ENG 11 unless he or she has passed both the CUNY/ACT Writing and the CUNY/ACT Reading Skills Assessment Tests. 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 **4 rec 0 cr**

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 Writings Skills Assessment Test.

ENG 02 **4 rec 0 cr**

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 **4 rec 0 cr**

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 **5 rec 1 conf/rec 3 cr**

Fundamentals of Composition and Rhetoric

Fundamental principles of expository organization and grammar that emphasize essay development, unity and clarity, and 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.

Prerequisites: 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. Successful completion of this course is equivalent to successful completion of ENG 11.

ENG 11 **3 rec 1 conf/rec 3 cr**

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.

Prerequisites: Passing scores on both the CUNY/ACT Writing Skills Assessment Test and CUNY/ACT Reading Skills Assessment Test.

ENG 12 **3 rec 1 conf/rec 3 cr**

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 **3 rec 1 conf/rec 3 cr**

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.

ENG 15 **3 rec 1 conf/rec 3 cr**

Written Composition and Drama

Continued emphasis on the writing of clear, effective expository prose based on readings in world drama. Research paper required.

Prerequisite: ENG 11.

ENG 16 **3 rec 1 conf/rec 3 cr**

Written Composition and Poetry

Continued emphasis on the writing of clear, effective expository prose based on readings in poetry. Research paper required.

Prerequisite: ENG 11.

ENG 23 **3 rec 1 lab/rec 3 cr**

Scientific and Technical Writing

Study and practice of various types of writing in scientific, business and technological disciplines, including abstracts, progress reports, description of a process, technical proposals, technical reports and business documents such as memoranda, letters, and resumes. Course includes one laboratory hour of instruction in business and technical software applications.

(Liberal Arts students must have written permission of Department Chairperson.)

Prerequisite: ENG 11.

ENG 53 **3 rec 3 cr**

The Black Writer in American Literature*

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

ENG 54 **3 rec 1 conf/rec 3 cr**

Black Poetry*

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

ENG 56 **3 rec 3 cr**

Children's Literature

Discussions and lectures on history, development, and critical evaluation of children's literature (including works from other cultures in translation). Children's literature will be considered through multiple critical approaches, including gender, cultural and psychological criticism. One research project as well as other written work will be required, including the opportunity to write a work for children.

Prerequisite: ENG 11.

ENG 61 **3 rec 3 cr**

Shakespeare

Introduction to plays of Shakespeare. Representative tragedies, comedies, and histories are read and analyzed. Poetic and dramatic techniques and the Elizabethan theatre are studied. Critical or research paper required.

Prerequisites: ENG 11 (and ENG 12 where required) and ENG 14 and/or 15.

ENG 65 **3 cr**

Honors Elective: Independent Research

To involve the intellectually aware, creative student in the in-depth analysis of some phase of English through independent research. Each student will work closely with the instructor, receiving guidance in research techniques, organizing bibliography in the specific area, and preparing drafts of the honors paper.

Prerequisite: B or higher average in several previous English courses taken at BCC and the written approval of a full-time instructor in the English Department and the chairperson.

ENG 72 **3 rec 3 cr**

The Bible as Literature

Study of the prime Biblical narratives as well as chief poetic and wisdom sections of both Old and New Testaments, including the Apocrypha. Biblical texts to be read in English. Students write short themes on both texts and their scholarly critiques on these texts.

Prerequisite: ENG 11.

■ **ENGLISH AS A SECOND LANGUAGE**

Department of English

ESL 01 **8 rec 0 cr**

English as a Second Language — Basic

For students whose native language is not English. Intensive program for beginning level students for development of English language skills. Builds oral and written control of basic grammatical structures, and listening and reading comprehension.

ESL 02 **6 rec 0 cr**

English as a Second Language — Intermediate

For students whose native language is not English. Builds oral control of grammatical structures, listening comprehension, and the ability to write grammatically acceptable, well-constructed paragraphs and short essays.

Prerequisite: ESL 01 if required, or placement on the ESL 02 level.

ESL 03 6 rec 0 cr

English as a Second Language—Advanced

For students whose native language is not English. Builds control of advanced grammatical structures and develops ability to write various forms of expository compositions.

Prerequisite: ESL 02 if required, or placement on the ESL 03 level.

■ **ENVIRONMENTAL TECHNOLOGY**

Department of Chemistry and Chemical Technology

ENV 11 2 lect 1 rec 3 lab 4 cr

Introduction to Environmental Health

This course provides a basic understanding of widespread health problems that are linked to environmental and occupational health hazards. Students become familiar with the identity and sources of air and water pollutants, the routes of entry of these pollutants into the body and the harmful effects of these pollutants. Laboratory exercises familiarize students with methods of air, soil and water analysis. Field trips provide first-hand knowledge of public health, occupational health and safety issues.

Prerequisites: RDL 02, ENG 02, ESL 03 if required.

ENV 12 2 lect 1 rec 3 lab 4 cr

Environmental and Occupational Regulations

Overview of judicial system, regulatory agencies and the federal register system. Definition of key terms and concepts in environmental law. Delineation of major environmental laws relating to water, wastewater, air, hazardous/solid waste, environmental impacts and the workplace. The laboratory section of the course will focus on hazardous materials training according to 29 CFR 1910.120. Students qualify to receive a 40-hour HAZMAT Certificate at the completion of the laboratory portion of the course.

Prerequisite: ENV 11.

ENV 21 1 lect 8 field study 3 cr

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.

ENV 22 2 lect 4 lab 4 cr

Environmental Methods of Analysis

This course includes lecture demonstrations and 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.

ENV 23 **3 lect 3 cr**

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.

ENV 24 **3 lect 12 internship 3 cr**

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.

ENV 31 **2 lect 1 rec 3 lab 4 cr**

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.

Prerequisite: CHM 18 or CHM 22.

ENV 32 **2 lect 1 rec 3 lab 4 cr**

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.

Prerequisite: CHM 18 or CHM 22.

■ **FINANCE**

Business and Information Systems Department

FIN 31 **3 rec 3 cr**

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. Rebeca Araya.

■ FRENCH

Department of Modern Languages

FRN 11 **4 rec 4 cr**

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 **4 rec 4 cr**

Beginning French II

Continuation of FRN 11

Prerequisite: FRN 11 or placement test.

FRN 13 **4 rec 4 cr**

Intermediate French

Continuation of FRN 12.

Prerequisite: FRN 12 or placement test.

FRN 21 **4 rec 4 cr**

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. Rebeca Araya.

■ GEOGRAPHY

Department of History

GEO 10 **3 rec 3 cr**

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.

Corequisite: RDL 01 or ENG 01 if required.

GEO 20 **3 rec 3 cr**

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 3 lec 3 cr

Health and Aging

This course provides an examination of health promotion, health management and health care in the elder years. It explores the inter-relationship between the physiological, psychological, social, economic, and cultural dimensions of aging.

Prerequisite: HLT 91.

HLT 91 2 rec 2 cr

Critical Issues in Health

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 3 rec 3 cr

Drugs, Society and Human Behavior

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 3 rec 3 cr

Human Sexuality

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 3 rec 3 cr

Human Nutrition

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 3 rec 3 cr

Health Education for Parenting

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 **1 sem 5 hrs field work 3 cr**

Field Work in Community Health Resources

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 **1 rec 2 hrs field work 3 cr**

Community Health Resources for Child Care Workers

Seminar in community health resources for child care workers. Students use their job placement as field work experience and keep weekly logs.

HLT 99 **2 rec 2 cr**

Health of the Nation

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.

Corequisite: ENG 01 or RDL 01.

■ **HEALTH CARE MANAGEMENT**

Business and Information Systems Department

HCM 11 **3 rec 3 cr**

The U.S. Health Care Delivery System

Examines key issues about the organization and delivery of health and nutrition services. Explores the role of health care professions and occupations, the structure and function of the U.S. health services delivery system, and applications of technology and financial resources.

HCM 12 **3 rec 3 cr**

Hospital Organization and Management

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 3 rec 3 cr

History of the Modern World

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.

Prerequisite: A passing score on the CUNY/ACT Writing Skills Assessment Test and a passing score on the CUNY/ACT Reading Skills Assessment Test

HIS 11 4 rec 3 cr

Introduction to the Modern World

This course is identical in academic content and in assessment 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. Class size will be limited to 30.

Prerequisite or Corequisite: ENG 01 or ENG 09 or RDL 01.

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

HIS 13 3 rec 3 cr

History of the Ancient World

Four major River Valley civilizations—Egypt, Mesopotamia, India, China—will be covered. 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 3 rec 3 cr

Medieval History

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 3 rec 3 cr

Intellectual and Social History of Modern Europe

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, and 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 34 **3 rec 3 cr**
History of Science and technology

Major developments in science and technology in the Western world and their impact on man and society. Growth and interaction of science and technology from the dawn of civilization to the present day.
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, and the era of independence.
Prerequisite: HIS 10 or 11.

HIS 36 **3 rec 3 cr**
History of Modern Russia

The history, culture, and economic and social development of Russia in modern times, with some emphasis on Russia's relations with her neighbors in Eastern Europe.
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 the 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.

■ HORTICULTURE

Department of Biology and Medical Laboratory Technology

Enrollment in Horticulture 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. Rebeca Araya.

■ HUMAN SERVICES

Department of Social Sciences

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 PSY11 or SOC 11.

HSC 11 3 rec 3 cr

Introduction to Case Management

Addresses the complex situation of children and adolescents who require long-term assistance and whose needs fall along a continuum of care. Objective is to facilitate and ensure the effective delivery of service by improving the 'fit' between client capacity and demands of the environment. Includes focus on crisis intervention with regard to child abuse, family violence, substance abuse, HIV and AIDS, and teenage pregnancy.

Prerequisite: HSC 10, PSY 11, SOC 11.

HSC 12 3 rec 3 cr

Human Services Skills and Methods

This course introduces students to essential skills, techniques and methods necessary for success in the field of human services. The course will help students transfer knowledge gained in the classroom to future practice and fieldwork placements. Students will become acquainted with the methods and skills used in the human service field to assist clients on an individual basis (micro-level) or in larger group settings (mezzo-level). Counseling approaches used to assist clients from culturally diverse backgrounds will be explored. Advocacy techniques which aid clients who are receiving inadequate services from public assistance agencies will be discussed.

Prerequisite or Corequisite: HSC 10.

HSC 91 2 rec 14 hrs field work 3 cr

Field Work and Seminar in Human Services I

Supervised fieldwork 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 are designed to assure that skills and values are being appropriately integrated.

Prerequisites: PSY 11, SOC 11, HSC 12 and permission of department.

Prerequisites or Corequisites: ENG 10 or ENG 11, HSC 11, SOC 35

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.

Prerequisites: HSC 10, PSY 11, SOC 11 and permission of department.

■ **INTERIOR LANDSCAPING**

Department of Biology and Medical Laboratory Technology

Enrollment in Interior Landscaping 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. Rebeca Araya.

■ **ITALIAN**

Department of Modern Languages

ITL 11 **4 rec 4 cr**

Beginning Italian I

Pronunciation; language structure; conversation; reading of simple texts; dictation. Audio laboratory practice.

ITL 12 **4 rec 4 cr**

Beginning Italian II

Continuation of ITL 11. Language structure; reading of elementary literary texts; dictation.

Prerequisite: ITL 11 or placement test.

ITL 13 **4 rec 4 cr**

Intermediate Italian

Advanced language structures; conversation reading; translation and discussion of modern texts; composition.

Prerequisite: ITL 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 roughdraft copy. Students are expected to achieve a minimum speed of 30 words per minute.

Prerequisite: KEY 10 or department permission.

Corequisite: 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.

Corequisite: 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. Rebeca Araya.

■ LANGUAGE

Department of Modern Languages

LAN 15 **4 rec 3 cr**

Comparative Grammar for Native Spanish Speakers

An introductory program for beginning ESL students covering basic similarities and differences between Spanish and English. The course strengthens student's knowledge of Spanish as an aid in learning English.

Prerequisite: Registration only by department or placement.

■ LAW

Business and Information Systems Department

LAW 17 3 rec 3 cr

Introduction to Paralegal Studies

Introduces students to the legal system as it operates in the State of New York, the legal process, and certain basic areas of the law (torts, contracts, property). Roles of the lawyer and paralegal within the legal system especially as they relate to the unauthorized practice of law, fiduciary relationships, and ethical considerations. Students become familiar with specific paralegal skills. They practice and perfect such skills as interviewing techniques, factual investigation and formal and informal advocacy.

Corequisite: ENG 02 or RDL 02 if required.

LAW 19 3 rec 3 cr

Introduction to Law Office Management and Computers

Survey of principle areas of law office management, docket control, calendar monitoring, bookkeeping/accounting systems, functions of the law library and computers in the law office. Students gain understanding of computers, operating systems and programming in the modern law office; overview of other computer applicators for lawyers and paralegals; computer law, hardware and software tailored for law office applications.

Prerequisites: DAT 10, RDL 02, and ENG 02 if required.

LAW 41 3 rec 3 cr

Business Law

Survey of the legal and economic environment of business, and interrelationship and impact of ethical, social and political influences on individuals and organizations in the study of agency, antitrust, bankruptcy, constitutional, consumer, contract, criminal, and labor laws, and the federal and state court systems.

Corequisite: ENG 02 or RDL 02 if required.

LAW 45 3 rec 3 cr

Medical Law

Law as it affects work of medical secretarial assistants and paralegals including medical practice acts, legal relationship of physician and patient, professional liability, types of medical practice, preparation of reports for workers' compensation, and court litigation.

Corequisite: ENG 02 or RDL 02 if required.

LAW 47 3 rec 3 cr

Civil Procedure

Common, statutory and constitutional law; the judicial system; and civil and criminal proceedings from initiation to enforcement and judgment.

Corequisites: ENG 02 or RDL 02 if required; LAW 17.

LAW 52 **3 rec 3 cr**

Business Organizations

Introduction to law relating to business organizations: agency; sole proprietorships and partnerships; corporations; government regulation; drafting and research practice; functions of the lawyers and paralegal assistant.

Corequisite: ENG 02 or RDL 02 if required.

LAW 62 **3 rec 3 cr**

Family Law

Focus on legal aspects of marriage; custody and visitation; economic and social aspects of divorce, separation, annulment, and antinuptial agreements; contractual relations among members of the family; family court procedures; criminal jurisdiction over minors; drafting and research practice; functions of the lawyer and paralegal assistant. Aspects of criminal, statutory and constitutional law as it affects the juvenile offender.

Corequisite: ENG 02 or RDL 02 if required.

LAW 63 **3 lec 3 cr**

Law for Security Personnel

A study of the legal problems in the private security sector. Included is a review of the powers and restrictions on "private police," (e.g., arrest, search and seizure, eavesdropping, and a comparison with the powers of law enforcement agencies). Civil liabilities of private security personnel are studied as well as aspects of civil law. Licensing statutes are also analyzed.

Prerequisite: ENG 02 or RDL 02 if required.

LAW 64 **3 lec 3 cr**

Constitutional Law

This course provides an analysis of the historical development of constitutional criminal procedure. The effect of the due process clause of the Fourteenth Amendment is examined through a study of the leading Supreme Court decisions relating to criminal justice. Special attention is placed upon the Fourteenth Amendment's use to apply the Bill of Rights to the States.

Prerequisite: ENG 02 or RDL 02 if required.

Pre/corequisite: POL 11.

LAW 65 **3 rec 3 cr**

Criminal Law and Procedures

Provides understanding of basic distinctions between criminal and civil law; familiarization with criminal justice system; major stages of a criminal case.

Corequisite: ENG 02 or RDL 02 if required.

LAW 72 **3 rec 3 cr**

Real Property

Law of real property and real estate transactions. Analysis of sales, obligations of the real estate broker, surveys, recordings, closings and title searches, mortgages, assignments, consolidation agreements, and mortgage foreclosures. Law of landlord and tenant are extensively reviewed.

Corequisite: ENG 02 or RDL 02 if required.

LAW 77 3 rec 3 cr

Immigration Law

Hands-on course dealing with concepts and techniques of immigration law. Procedures for preparation of immigrant and non-immigrant visa applications; and the 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 the perspective of a paralegal.

Corequisite: ENG 02 or RDL 02 if required.

LAW 82 3 rec 3 cr

Insurance and Torts

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.

Corequisite: ENG 02 or RDL 02 if required.

LAW 89 3 rec 3 cr

Legal Advocacy

Administrative law and advocacy, agency advocacy, preparation and conduct of administrative hearings, due process rights, and basics 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.

Corequisite: ENG 02 or RDL 02 if required.

LAW 91 3 rec 3 cr

Landlord/Tenant Advocacy

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; and develop direct and cross-examination skills.

Prerequisites: LAW 17 and LAW 47; completion of 30 credits, a "C+" average and permission from director of the program.

LAW 92 3 rec 3 cr

Estates, Trusts and Wills

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.

Corequisite: RDL 02 or ENG 02 if required.

LAW 95 **3 rec 3 cr**

Legal Research and Writing

How to research legal questions and to present results to the 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.

Prerequisites: ENG 10 or ENG 11, LAW 17, LAW 47.

LAW 96 **3 rec 3 cr**

Advanced Legal Research and Writing

Drafting pleadings and business agreements, law office memoranda, memoranda of law in support of motions, pretrial and memoranda of law, and appellate briefs. 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.

Prerequisites: ENG 10 or ENG 11, LAW 17, LAW 47, LAW 95.

LAW 98 **2 rec 2 cr**

Paralegal Seminar and Internship

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.

Prerequisites: LAW 17, LAW 47, and completion of at least 40 credits toward a degree.

■ **LEARNING TO LEARN**

Department of Education and Reading

LTL 10 **3 rec 3 cr**

Learning to Learn

Presents learning strategies for students enrolled in college level courses who have completed a required developmental reading course. Examines organization of information from the various content courses taken concurrently. Teaches interpretation and construction of charts, graphs, tables, maps; task management; incorporation of life skills into the learning environment. 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 **3 rec 2 cr**

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 2 rec 2 cr

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 2 lec 5 clin 2 lab 4 cr

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 2 lab 1 cr

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 2 lec 6 clin 2 lab 4 cr

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, NTR 11.

Corequisite: PHM 11.

PNR 31 2 lec 6 clin 2 lab 4 cr

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 2 lab 1 cr

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 2 lab 2 cr

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.

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.

Prerequisite: 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.

■ **MATHEMATICS**

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.

I. College Curricula Mathematics Requirements (Effective Jan. 1, 2010)

A. Mathematics Sequence by Curriculum.

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

NOTE: The old sequence MTH 03 → MTH 04 (not offered after Sp 2010) can replace MTH 05 anywhere below

Code	Curricula	Required Mathematics Courses Sequence
002	Accounting Curriculum A.A.S. Degree	12** or 01 → 05 → 06 → 30 (→ 31) *#
003	Licensed Practical Nursing Certificate Program	See Nursing Department
004	Animal Care & Management Certificate Program	12** or 01 → 05 → 21
008	Business Administration A.S. Degree Accounting Option 108 Management Option 208 Marketing Management Option 308 Computer Programming Option 408	01 → 05 → 06 → 30 (→ 31#)
009	Automotive Mechanics Certificate Program	None
010	Paralegal Certificate Program	None
011	Education Associate A.A.S. Degree	01 → 05 → 21 or 23
014	Human Services A.A.S. Degree	12** or (01 → 05 → 21 or 23) *
015	Mathematics A.S. Degree	01 → 05 → 06 → 30 → 31 → 32 → 33 and MTH 42 and two courses from {CSI 35, MTH 34, 35, 44, 46}
016	Pharmaceutical Manufacturing Technology A.A.S. Degree	01 → 05 → 06 → 13 → 14 or (01 → 05 → 06 → 30 → 31) *
017	Digital Arts, Graphic Design Option A.A.S. Degree Interactive Multimedia Option 117	12** or (01 → 05 → 21 or 23)
018	Energy Services Technology A.A.S. Degree	01 → 05 → 13 and 23 or (01 → 05 → 06 → 30 → 31)
020	Computer Information Systems Curriculum A.A.S. Degree Web Page Development Option 120 Computer Programming Option 220	12** or (01 → 05 → 06 → 30 (→ 31)) *
023	Electronic Engineering Technology A.A.S. Degree	01 → 05 → 06 → 13 → 14 → 15
024	Engineering Science A.S. Degree	01 → 05 → 06 → 30 → 31 → 32 → 33 → 34 (MTH 42) *
025	Computer Science A.S. Degree	01 → 05 → 06 → 30 → 31 → 32 → 33 (MTH 34, 42) *
026	Environmental Technology A.A.S. Degree	01 → 05 → 06 → 13 and 23
028	Automotive Technology A.A.S. Degree	01 → 05 → 06 → 13
031	Community/School Health Education A.S. Degree	01 → 05 → 21 or 23 or 26
032	Dietetics & Nutrition Option A.S. Degree	01 → 05 → 23
033	Nuclear Medicine Technology A.A.S. Degree	01 → 05 → 06 → 30
034	Ornamental Horticulture A.A.S. Degree General Horticulture Option 234 Interior Landscaping Option 334	None (01 → 05 → 06)*
036	Office Administration and Technology A.A.S. Degree	12** or

		(01 → 05 → 06 → 30) *
037	Liberal Arts and Sciences A.A. Degree African, Latino and Native American Studies Option 537 Criminal Justice Option c37 Education Option 737 History Option 237 Human Services Option b37 International Studies Option a37 Media Studies Option 837 Performing Arts Option f37 Political Science Option 337 Psychology Option 437 Security Management d37 Spanish Option e37 Speech Pathology Option 937	01 → 05 → 21 or 22 or 23 or 26 / or (01 → 05 → 06 → 30) †
039	Liberal Arts and Sciences A.S. Degree Biology Option 139 Chemistry Option 239 Earth Systems & Environmental Science 639 Physics Option 339	01 → 05 → 06 → 30 → 31 → 32 01 → 05 → 06 → 30 → 31 → 32 01 → 05 → 06 → 30 → 31 → 32 01 → 05 → 06 → 30 → 31 → 32 → 33
040	Therapeutic Recreation A.S. Degree	01 → 05 → 21 or 22 or 23 or 26
041	Telecommunications Technology A.A.S. Degree	01 → 05 → 06 → 13 → 14 → 15
043	Medical Office Assistant Curriculum A.A.S. Degree	12** or (01 → 05 → 06 → 30) *
044	Medical Laboratory Technology A.A.S. Degree	01 → 05 → 06 → 13 → 14
046	Nursing A.A.S. Degree	See Nursing Department
047	Pre-Clinical Nursing Program	See Nursing Department
048	Radiologic Technology A.A.S. Degree	01 → 05 → 06 → 13 / or (01 → 05 → 06 → 30 → 31) *
056	Media Technology A.A.S. Degree	12** or (01 → 05 → 21) *
057	Paralegal Studies A.A.S. Degree	12** or (01 → 05 → 21 or 23)
073	Marketing Management Curriculum A.A.S. Degree	12** or (01 → 05 → 06 → 30 (→ 31)*)
080	Criminal Justice A.A. Degree	01 → 05 → 21 or 22 or 23 or 26 / or (01 → 05 → 06 → 30) †
090	Science for Forensics A.S. Degree	01 → 05 → 06 → 30 → 31 → 32
141	Telecommunications Technology (Verizon) A.A.S. Degree	10 → 11
<p>* Student who may later transfer to a four-year college should consider taking these courses.</p> <p># Recommended course but not a required course by curriculum.</p> <p>† Student who may transfer to a four-year college other than CUNY colleges should consider taking these courses.</p> <p>**For students entering with COMPASS proficiency (30 or more on M1 and M2). Students entering without COMPASS proficiency must take MTH 01 and/or MTH 05 before taking MTH 12 (see COMPASS cut-off scores for Mathematics Placement).</p>		

II. COMPASS Cut-off Scores for Mathematics Placement (Effective January 1, 2010)

The COMPASS test is taken once on entrance to determine MTH placement. Students in MTH remediation have opportunities to retest until they achieve proficiency (30 or more in both M1 and M2). However, retests are not used for “re-placement.” Students can skip a required remedial MTH course only by taking and passing the appropriate Departmental final exam.

COMPASS scores by which a freshman may place out of a given course are:

Out of MTH 01: 30 or more on at least one of M1 or M2.

Out of MTH 05: 30 or more on M1 and 45 or more on M2.

Out of MTH 06: 30 or more on M1, 45 or more on M2, and 30 or more on M5 (trigonometry).

Course Table of COMPASS Place Out

Place out of:	Arithmetic (M1) (pre-algebra)	Algebra (M2)	College (M3) Algebra	Geometry (S4)	Trigonometry (S5)
MTH 01*	≥30 on either M1 or M2		N/A	N/A	N/A
MTH 05	≥30	≥45	N/A	N/A	N/A
MTH 06	≥30	≥45	N/A	N/A	≥30
MTH 30 or MTH 13**	≥30	≥45	≥45	N/A	≥40

For nursing curriculum codes 003 and 046 and 047:

If $M1 \geq 35$ and $M2 \geq 30$, student is eligible to apply for PHM 10 at Nursing Department.

If $M1 < 30$, student should take MTH 01.

If $30 \leq M1 < 35$, and $M2 \geq 30$, student may retest for M1 after workshop or tutoring.

If $30 \leq M1 < 35$, and $M2 < 30$ then student should take MTH 05.

High School Equivalency (Regents score of 75 or better)

MTH 05	Seq Math II (SMQII): MQ3 and MQ4 [10th grade math] or Math A
MTH 06	Seq Math III (SMQ III): MQ5 and MQ6, or Math B

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.

Mathematics Course Sequences:

Liberal Arts (non-science)

MTH 01 → MTH 05 → MTH 21 or 23

Mathematics, Science, Technology and Business (transfer programs)

MTH 01 → MTH 05 → MTH 06 → MTH 30 (or MTH 13)

Curricula Requiring MTH 12 (non-science, non-transfer)

Entering with COMPASS proficiency ($M1 \geq 30$ and $M2 \geq 30$): MTH 12

Entering without COMPASS proficiency: MTH 01 → MTH 05 → MTH 12

(Note: MTH 12 is not recommended for transfer to a four year college.)

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 01

4 rec 0 cr

Fundamental Concepts and Skills in Arithmetic and Algebra

Topics selected from basic operations in arithmetic, geometry, verbal problems whose solutions involve arithmetic processes, generalizations of the principles of arithmetic leading to the fundamental concepts of algebra. Elementary treatment of signed numbers and linear equations.

Prerequisite: None. Refer to *College Curricula Mathematics Requirements and Compass Cut-Off Scores for Mathematics Placement*.

Corequisite: RDL 01 if required.

MTH 04 4 rec 0 cr (Not offered after Spring 2010.)

Selected Topics in 11th Year Mathematics

Topics selected from relations and functions, quadratic equations, systems of equations, coordinate geometry, radicals, geometry, elements of trigonometry.

Prerequisite: RDL 02 if required; *Liberal Arts (non-science) and Science, Technology and Business (transfer programs) should refer to the Mathematics Placement charts above.*

MTH 05 6 rec 0 cr

Basic Concepts of Mathematics I

Signed numbers, evaluation of algebraic expressions, linear equations and their graphs, polynomials, factoring, radical expressions, quadratic equations.

Prerequisite: *Math 01 or equivalent and RDL 01 if required. Refer to College Curricula Mathematics Requirements and Compass Cut-Off Scores for Mathematics Placement.*

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.*

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, fundamental concepts of algebra, functions and graphs, systems of linear equations, determinants, factoring and fractions, quadratics, variation and geometry. A 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 trigonometric functions of any angle, oblique triangles, exponents and radicals, graphs of exponential and logarithmic functions, basic operations with complex numbers, inequalities, introduction to statistics. A 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 (A.A.S.) programs.

MTH 12 **3 rec 3 cr**
Introduction to Mathematical Thought

Topics selected from probability, statistics, logic, set theory, geometry, matrices, number system structures. (Not recommended for transfer curricula, and not accepted for credit in the Liberal Arts curriculum.)

Prerequisites: CUNY Math Proficiency as measured by the COMPASS exam, and ENG 02 and RDL 02 if required. Students who have not attained Math Proficiency should refer to College Curricula Mathematics Requirements and Compass Cut-Off Scores for Mathematics Placement.

ENG 02 and RDL 02, if required, are prerequisites for all MTH courses numbered 13 and higher. MTH 13, 14, and 15 are recommended for students in career technology curricula such as Automotive Technology, Electronic Engineering Technology, Medical Laboratory Technology and Telecommunications Technology curricula.

MTH 13 **4 rec 3 cr**
Trigonometry and College Algebra

Vectors, complex numbers, functions and graphs, exponential, logarithmic and trigonometric functions, analytic trigonometry, systems of linear equations.

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

MTH 14 **3 rec 3 cr**
College Algebra and Introduction to Calculus

Analytic geometry, the derivative and its applications, differentiation of transcendental functions.

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

MTH 15 **3 rec 3 cr**
Calculus

The integral and its applications, methods of integration, elementary differential equations, expansion of functions in series.

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

MTH 21, 22, 23 and 26 are non-sequential courses primarily for Liberal Arts students enrolled in non-science transfer programs. MTH 21, 22 and 26 are recommended for Liberal Arts students and as electives for students in other curricula. MTH 23 is recommended for students in such social sciences as economics, political science, psychology, human services and sociology.

MTH 21 **3 rec 3 cr**
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 05 or equivalent and ENG 02 and RDL 02 if required.

MTH 22 3 rec 3 cr

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 05 or equivalent and ENG 02 and RDL 02 if required.

MTH 23 3 rec 3 cr

Probability and Statistics

Organization and presentation of data, measures of central tendency and variation, correlation and regression, elementary probability, the binomial distribution.

Prerequisites: MTH 05 or equivalent and ENG 02 and RDL 02 if required.

MTH 26 2 rec 2 lab 3 cr

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 05 or equivalent and ENG 02 and RDL 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 4 rec 4 cr

Pre-Calculus Mathematics

The relation between a function and its graph, composition and inversion of functions, polynomial, rational, exponential and logarithmic functions, trigonometry.

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

MTH 31 6 rec 4 cr

Analytic Geometry and Calculus I

Limits, rates of change, differentiation and anti-differentiation of algebraic functions, applications, integrals, curve sketching. For Mathematics, Computer Science, and Engineering Science majors, or for Liberal Arts and Sciences students planning to major in one of the physical sciences.

Prerequisites: MTH 30 or equivalent and ENG 02 and RDL 02 if required.

MTH 32 6 rec 5 cr

Analytic Geometry and Calculus II

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 **5 rec 5 cr**

Analytic Geometry and Calculus III

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 **4 rec 4 cr**

Differential Equations and Selected Topics in Advanced Calculus

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 **4 rec 4 cr**

Selected Topics in Advanced Calculus and Linear Algebra

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 **4 rec 4 cr**

Linear Algebra

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 **4 rec 4 cr**

Vector Analysis

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 **4 rec 4 cr**

Abstract Algebra

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 **4 rec 4 cr**

Advanced Calculus

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 **1 lect 4 lab 2 cr**

Basic Engineering Graphics

Fundamental engineering drawing and industrial drafting room practice. Lettering, orthographic projection, auxiliary views, sections and conventions, pictorials, threads and fasteners, tolerances, detail drawing, dimensioning and electrical drawings; introduction to computer-aided graphics.

Prerequisite: MTH 05.

■ MUSIC

Department of Art and Music

MUS 10 **2 rec 1 cr**

Music Survey

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 **3 rec 3 cr**

Introduction to Music

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 **3 rec 3 cr**

Introduction to Music: A Multi-Cultural Survey of World Music

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 **3 Studio 2 cr**

Sound Design for Multimedia

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 2 rec 2 lab 3 cr

Creative Computer Music

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 a MIDI workstation.

MUS 18 2 rec 2 cr

History of Jazz

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 each

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 radiopharmaceuticals by various organs, time dependent effects.

Prerequisites: BIO 23, CHM 18.

Corequisite: NMT 81.

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 81.

NMT 84 2 lect 2 cr

Radiation Biology

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.

Corequisite: NMT 81.

NMT 85 1 lect 3 lab 2 cr

Nuclear Medicine Procedures

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.

Prerequisites: BIO 24, NMT 83.

NMT 86 2 rec 1 cr

Didactic Nuclear Medicine

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.

Prerequisite: NMT 84.

Corequisite: NMT 85.

NMT 87 1,100 clin/lab 4 cr

Clinical Nuclear Medicine

Static and dynamic radionuclide procedures on patients; tomographic procedures; interpretation of radionuclide scans and gamma-camera images; nuclear medicine instrumentation; alternative imaging processes.

Prerequisite: NMT 84.

Corequisite: NMT 86.

NMT 88 1 lect 1 cr

Senior NMT Seminar

Students meet with Medical Director's liaison and Clinical Director to discuss research topics in Nuclear Medicine. Term papers and oral reports based on assigned reading material and concepts analyzed during the didactic and laboratory segments of the NMT program.

Prerequisite: NMT 86.

Corequisite: NMT 87.

NMT 89 2 lect 4 lab 160 clin 4 cr

Introduction to Cardiac Ultrasound

Topics include physics of ultrasound, ultrasound instrumentation, emergency medical procedures, Doppler and transesophageal echocardiology. Clinical rotation is at Montefiore Medical Center where each student participates in approximately 150 procedures. Students completing this course will receive a certificate from Montefiore Medical Center.

Prerequisite: BIO 24, permission of NMT Program Director.

■ 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.

**NUR courses are open only to students with full matriculation in the Nursing (046) curriculum.*

NUR 10 1 lect 1 cr

Transition in Nursing

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.

Prerequisite: Pre-Clinical Nursing Sequence

NTR 11 3 rec 3 cr

Nutrition in Physical and Emotional Disorders

This course focuses on therapeutic nutrition and its effect on major health problems in western society and the global community including traditional, cultural and controversial nutritional approaches. Students examine the effects of foods on the body and health. The integration of the nursing process and the nutritional needs of clients are discussed.

Prerequisites: For RN students, NUR 41 and 42 or permission of instructor. Also open to RNs and LPNs. For LPN students, pre-clinical nursing sequence.

NUR 41 2 lect 2 cr

Nursing Process and Therapeutic Communication †

This introductory course focuses on issues, concepts and the nursing process utilizing therapeutic communication techniques when dealing with clients, families and groups. Nursing 41 builds on previously acquired knowledge from the humanities and social sciences. The concepts of critical thinking and legal and ethical issues are introduced as they pertain to the discipline of nursing.

Prerequisite: Pre-Clinical Nursing Sequence.

Corequisites: NUR 42, BIO 24.

NUR 42 2 lect 5 clin 2 lab 4 cr

Fundamental Skills In Nursing†

This web-enhanced course introduces students to health care needs of older adults. It focuses on providing a safe effective care environment, while promoting and maintaining physiological and psychosocial integrity. In addition, this course helps students apply knowledge from the humanities, biophysical and psychosocial sciences to the science of Nursing. Students learn to apply the nursing process at a beginning level, develop critical thinking skills, perform selected psychomotor skills and use therapeutic communication.

Prerequisite: Pre-Nursing Sequence.

Corequisites: NUR 41, BIO 24.

NUR 43 2 lect 6 clin 4 cr

Mental Health Nursing†

This course focuses on the mental health of adults in the community and in the inpatient setting. The student will provide nursing care, utilizing the nursing process, to a variety of clients who have mental illness and various mental health needs. Emphasis will be upon the promotion, restoration and maintenance of mental health of individuals and groups of clients as they prepare to return to the community.

Prerequisites: NUR 41, NUR 42, BIO 24.

Corequisites: NUR 44, BIO 28.

NUR 44 2 lect 6 clin 4 cr

Nursing of the Adult I†

This course introduces students to disease processes by focusing on the care of adult clients with selected medical-surgical problems. Nursing assessments and 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 43, BIO 28.

NUR 45 2 lect 6 clin 4 cr

Maternal, Newborn and Women's Health†

This course focuses on the physiological and psychosocial integrity occurring in women. Emphasis is on the childbearing process, wellness of the family and maintenance of health.

Adverse outcomes of pregnancy, care of the newborn and selected women's health issues of contraception, infertility and infections are discussed.

Prerequisites: NUR 43, NUR 44, BIO 28.

Corequisite: NUR 46.

NUR 46 2 lect 6 clin 4 cr

Nursing of the Adult II†

This intermediate nursing course builds on previously learned content and experiences. The course focuses on adult clients with selected traumatic, inflammatory and neoplastic disorders. Select problems of the aged and the chronically ill are also discussed. Emphasis is placed on the promotion, restoration and maintenance of physiological and psychosocial health. Continued supervised experiences on medical and surgical units in selected health care agencies are provided.

Prerequisites: NUR 43, NUR 44, BIO 24, BIO 28.

Corequisite: NUR 45.

NUR 47 2 lect 6 clin 4 cr

Pediatric Nursing†

This course focuses on the physiological and psychosocial health care needs of pediatric clients and their families receiving care in an acute care setting. The focus is on the unique needs of the pediatric population including identifying and promoting the growth and developmental needs of the infant, child and adolescent.

Prerequisites: NUR 45, NUR 46.

Corequisite: NUR 48.

NUR 48 2 lect 6 clin 4 cr

Nursing of the Adult III†

This senior level course provides students with the opportunity to practice advanced medical surgical nursing skills as well as leadership and management skills where adult clients have multiple complex acute/chronic health care needs. It focuses on collaboratively restoring physiologic and psychosocial integrity in selected medical-surgical disorders and emergency conditions amidst complex technology and life support. Legal and ethical issues pertaining to the discipline of nursing continue to be explored.

Prerequisites: NUR 45, NUR 46.

Corequisite: 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

This course focuses on the principles related to the calculation of dosages and medication administration. Topics include the systems of measurement, equipment used in medication administration, calculation of oral medications, injectable medications and calculations related to intravenous and pediatric dosages. Emphasis is placed upon safe medication administration. Technology is used to enhance course content.

***Prerequisites:** A minimum score of 35 in arithmetic (M1) and a minimum score of 30 in algebra (M2) on the CUNY COMPASS PLACEMENT TEST.*

PHM 11 **3 rec 3 cr**

Pharmacology as It Applies to Health Services

This online hybrid distance learning course introduces the student to the key principles and concepts used in medication administration in the treatment, maintenance and prevention of disease and illness. Approaching this topic from a holistic perspective, students will gain knowledge relating to drug, nutrient and natural alternative interactions. Emphasis is placed on assisting the student to gain an understanding of the legal, ethical and cultural issues pertinent to successful medication therapy in diverse populations.

***Prerequisite:** Students need to complete all remediation for admission to nursing. PHM 11 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.*

***Corequisite:** PNR 22.*

- A nursing student must achieve a grade of “C” or better in all NUR courses.
- A nursing student may only repeat (attempt*) two (2) different NUR courses excluding NUR 41 and NUR 42, neither of which can be repeated.
- Nursing students who are unsuccessful (any grade below a “C”) in three (3) different nursing (NUR) courses, may not continue in the program.
- A grade of “C+” or better must be achieved in a repeated nursing course in order to remain in the program.
- All NUR courses must be completed within five years of entry into the clinical sequence of the RN program.

** **NOTE:** An 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).*

■ 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 the outlining of ideas and the development of the composition of written communications such as routine letters, memos, email 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 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 or instructor.

■ PHARMACEUTICAL MANUFACTURING TECHNOLOGY

Department of Chemistry and Chemical Technology

PMT 41 2 lect 2 lab 3cr

Pharmaceutical Chemistry

This course emphasizes the chemical principles and reactions vital to drug design and drug action. The course is aimed at undergraduates who have a basic grounding in chemistry and are interested in learning about drug design and the molecular mechanisms by which drugs act in the body. It examines the general principles and strategies involved in discovering and designing new drugs and developing them for the marketplace, and it looks at particular 'tools of the trade' which are used in rational drug design. Clinically important drugs will be used as examples.

Prerequisite: CHM 31 or CHM 18.

PMT 42 3 lect 3cr

Pharmaceutical Product Manufacturing

This course discusses the science and technology that applies to pharmaceutical manufacturing. Students will study different pharmaceutical formulations, and their methods of preparation for solid, liquid and other pharmaceutical products. Specific classes of pharmaceuticals will be discussed. Special topics will include packaging, and marketing regulations.

Prerequisite: CHM 31.

PMT 43 2 lect 2cr

Pharmaceutical Laws and Regulations

This course discusses the pharmaceutical laws and regulations that govern manufacturing, packaging and marketing of pharmaceutical products. Students will discuss specific examples that impacted the development of the laws and regulations.

Prerequisite: ENG 10 or ENG 11.

■ 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 from the Health Service Office (Loew Hall, Room 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.

PEA 16 2 lab 1 cr

Strength and Flexibility Training Through Pilates

In this course students will learn that a challenging series of mat exercises have proven to be effective for creating long, strong, well-toned, and 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 **4 rec 7 1/2 wks 1 cr**

Beginning Tennis

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 **2 rec 1 cr**

Techniques of Jazz Dance

Basic techniques of jazz dance; development of new dance skills including kicks, turns, pivots, 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 **1 lect 2 rec 2 cr**

African, Caribbean and Black Dance Forms†

PEA 47 **2 lab 1 cr**

Beginning Salsa

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, rhythmic accuracy, leading and following techniques, the basic step and variations, shines, turning, and dipping. Students will also learn about the history of Salsa dancing and music, and its current worldwide influence.

PEA 51 **1 lect 2 lab 2 cr**

Stress Management

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.

Corequisite: ENG 01 or RDL 01 if required.

PEA 71, 72, 73 **1 cr hour arranged**

Varsity Athletics

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, post-season 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 2 rec 1 cr

Techniques of Self-Defense

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 2 rec 1 cr

Introduction to Tai Chi Chuan

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.

REC 93 3 rec 3 cr

Introduction to Therapeutic Recreation

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 3 rec 3 cr

Recreation: Historical and Philosophical Perspective

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 **3 rec 3 cr**

Program Planning and Leadership in Recreation†*

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.

REC 96 **3 rec 3 cr**

Introduction to Alternative Therapies in Therapeutic Recreation

An exploration of alternative therapies for special needs individuals. Program planning and use of various modalities (art, recreation activities) will be emphasized. Alternative therapeutic modalities using DVD's, virtual field visits, and role playing activities to describe rehabilitation, hospital, recreation, and community based service will be used.

WFA 10 **2 lab 1 cr**

Workplace First Aid Training

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, and 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.

* Offered during Day Session, Spring Semester.

** Offered during Day Session and Saturdays.

† Not offered on a regular basis.

■ **PHYSICS**

Department of Physics and Technology

PHY 01 **4 rec 0 cr**

Introduction to College Physics

Fundamental laws and principles of classical physics; vectors, Newton's Laws, conservation principles, laws of thermodynamics. (Required for Engineering Science and Physics majors who have not had high school physics.)

Prerequisite: MTH 06 or equivalent.

Corequisite: RDL 02 if required.

PHY 10 **2 lect 1 rec 2 lab 4 cr**

Concepts of Physics

An elective course that introduces major ideas about the nature of the physical world and methods used in exploring them. Topics include motion and forces; work and energy; nature of light and sound; electricity, magnetism and applications to modern technology; and nature of the atom.

Prerequisite: MTH 03.

Corequisites: RDL 02 and ENG 02.

PHY 11 2 lect 1 rec 2 lab 4 cr

College Physics I

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 2 lect 1 rec 2 lab 4 cr

College Physics II

Elements of electric circuits, electromagnetic theory, light, selected topics in atomic and nuclear physics.

Prerequisite: PHY 11.

PHY 21 2 lect 1 rec 2 lab 4 cr

Physics for Engineering Technology I

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 2 lect 1 rec 2 lab 4 cr

Physics for Engineering Technology II

Fluid dynamics, thermodynamics, electricity and magnetism, optics, superconductors.

Prerequisite: PHY 21.

PHY 24 3 rec 3 lab 4 cr

Principles of General Physics

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 2 lect 2 rec 2 lab 4 cr

Physics I

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 2 lect 2 rec 2 lab 4 cr

Physics II

Hydrostatics and hydrodynamics; properties of gases; thermodynamics and kinetic theory of matter; wave motion; sound; electrostatics.

Prerequisite: PHY 31.

Corequisite: MTH 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

Introductory concepts and definitions of thermodynamics. Zeroth Law of thermodynamics and absolute temperature. Work and heat. First Law and applications. Second Law, Carnot theorem, entropy, thermodynamic state variables and functions, reversibility. Power and refrigeration cycles.

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, and 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, and 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.

■ 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.

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*

The purpose of this course is to get students interested in, and knowledgeable about, the politics of other nations. To accomplish this, we will examine various nations, with particular attention to nations within Western Europe, Africa, Asia, and the Middle East. The comparative method will be discussed as well as case studies of specific nations. This will be accomplished by comparing the historical experiences, political institutions and public policies of countries. We will also explore issues related to globalization.

Prerequisite: POL 11 or permission of the department.

POL 41 3 rec 3 cr

Civil Rights in America Since 1954

An analysis of the US Government and the civil rights movements since 1954. Topics include Jim Crow, desegregation, Brown V. Board of Education, Voting/Civil Rights Acts, Martin Luther King, SNCC, SCLC, Malcolm X, Black Panther Party, National Organization of Women, Cesar Chavez, Puerto Rican and Chicano movements.

Prerequisite: POL 11 or permission of the department.

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 Internships in Government

Permission of Instructor required

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

■ **PORTUGUESE**

Department of Modern Languages

POR 11 **4 rec 4 cr** (Course offered again beginning Fall 2009)

Beginning Portuguese I

Pronunciation; language structure; conversation and reading of simple texts; dictation. Audio laboratory practice.

POR 12 **4 rec 4 cr** (Course offered again beginning Fall 2009)

Beginning Portuguese I

Pronunciation; language structure; conversation and reading of simple texts; dictation. Audio laboratory practice.

Prerequisite: POR 11 or placement test.

■ **PSYCHOLOGY**

Department of Social Sciences

PSY 11 **3 rec 3 cr**

Introduction to 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.

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 3 cr

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 3 cr

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 3 cr

Psychology of Women

Development, personality characteristics, and needs of women; and 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 3 cr**

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 3 cr**

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.

Prerequisite: 9 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, and Jacobi Medical Center.

CLE 11 **14 days 1 cr**

Clinical Education I

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 **28 days 1 cr**

Clinical Education II

Continuation of Clinical Education I. Film evaluation included.

Prerequisite: CLE 11.

CLE 31 29 days 1.5 cr

Clinical Education III

Continuation of Clinical Education II. Film evaluation included.

Prerequisite: CLE 21.

CLE 41 40 days 1 cr

Clinical Education IV

Continuation of Clinical Education III. Film evaluation included.

Prerequisite: CLE 31.

CLE 51 40 days 1 cr

Clinical Education V

Continuation of Clinical Education IV. Film evaluation included.

Prerequisite: CLE 41.

CLE 61 29 days 1.5 cr

Clinical Education VI

Continuation of Clinical Education V. Film evaluation included.

Prerequisite: CLE 51.

RAD 11 2 lect 3 lab 3.5 cr

Introduction to Radiologic Technology

Orientation course includes history of radiology: major advances; radiologic technology as a health profession specialty; and history and organization of hospitals. *Medical Ethics and Law*: scope and nature of moral, legal and professional ethics. Professional guidelines of confidentiality; interpersonal relationships and medicolegal considerations. *Medical Terminology*: study of written and spoken language of medicine. Common terms used in diagnostic radiology education.

Prerequisite: Completion of Pre-RT Sequence.

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.

Prerequisite: 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.

Prerequisite: 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; and methods for minimizing operator and patient exposure.

Prerequisite: 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.

Corequisite: 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.

Prerequisites: 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, sensitometric 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.

Prerequisites: MTH 13, RAD 12, 22.

■ **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.

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.

Prerequisite: SOC 11 or PSY 11 or permission of instructor.

SOC 36 3 rec 3 credits

Sociology of Sex Roles

The nature of women's and men's participation in the family, at school, at work, at play, and in government. Comparative study of various classes and races of contemporary Americans and their historical and international counterparts. Analysis of the impact of the sexual revolution and the movement for sexual equality.

Prerequisite: SOC 11.

SOC 37 3 rec 3 cr

Social Inequality

This course is an introduction to the nature, causes and consequences of social inequality, both in the U.S. and worldwide. Inequality of economics, gender, sexual orientation, race and class are examined. The course also includes definitions, concepts, sociological theories and economic systems pertaining to diversity and inequality.

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 92 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.

SPN 14 **4 rec 3 cr**

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: LAN 15 in the ESL Sequence.

SPN 15 **4 rec 4 cr**

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.

SPN 16 **4 rec 4 cr**

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.

SPN 17 **4 rec 4 cr**

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 SPN 16 or placement test.

SPN 18 4 rec 4 cr

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 instruction; pediatrics; cardiology; and others. Additional vocabulary according to the student's interests and field of medical specialization.

SPN 19 4 rec 4 cr

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.

SPN 20 3 rec 3 cr

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.

Prerequisites: SPN 13 or 17 or placement.

SPN 21 4 rec 4 cr

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.

SPN 22 4 rec 4 cr

Latin-American Language and Culture

Readings in Latin-American literature. Representative texts on Latin-American and Caribbean culture, civilization, history and tradition. Conversation, literary analysis and interpretation. Course conducted in Spanish.

Prerequisite: SPN 13 or 17 or placement test.

SPN 23 3 rec 3 cr

19th Century Spanish Literature: Romanticism and Realism*

SPN 24 3 rec 3 cr

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.

SPN 25 3 rec 3 cr

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.

SPN 26 3 rec 3 cr

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.

Prerequisites: Placement based on department examination result.

SPN 28 3 rec 3cr

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.

Prerequisites: RDL 02 or ENG 02 if required, and SPN 13 or placement.

SPN 30 4 rec 4 cr

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: SPN 13 or 17 or placement test.

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: SPN 13 or 17 or placement test.

■ **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.

Prerequisites: 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 and interactive learning demonstrations. Laboratory exercises required.

Prerequisite: ELC 25.

Corequisite: 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, and demonstrations. Laboratory exercises required.

Prerequisite: ELC 25.

Corequisite: 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, and demonstrations are employed. Laboratory exercises are required.

Prerequisite: TEC 21.

TEC 41 **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.

Corequisite: 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.

Corequisites: 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 21 may be waived with the approval of curriculum coordinator.

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 fliers, reports, forms, letterheads, and slide presentations.

Prerequisites: RDL 02, RDL 11, MTH 03 if required; ENG 11;

WPR 21 or permission of Department.