School of Health Technology
and Management

School of Health Technology and Management

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American demographics, economics and technological advances in diagnostics, treatment and therapy have combined to create an environment where patients are diagnosed earlier, are more likely to survive disease or trauma, live longer, participate in ambulatory-based treatment, and are asked to take a more participatory role in their own health care.

As advances in science and information technology collide with a new consumerism and cry for reform of systematic health care processes, educators find themselves in the midst of transition as we move from one health care model to another. Whatever the new health care model evolves into, you can be assured that the School of Health Technology and Management will provide its graduates with the necessary skills to practice their profession.

Presently the School offers baccalaureate, master's and doctoral degrees in clinical and non-clinical areas that include athletic training, clinical laboratory sciences, cytotechnology, health care policy and management, health science, occupational therapy, physician assistant, physical therapy, and respiratory care. These programs are full-time entry-level except for the part-time post professional Physical Therapy (transition DPT) and the graduate health care policy and management programs, which are for health care professionals. The school also offers an adapted aquatics program as a minor. Students in the professional programs pursue core and basic science curricula, as well as the professional courses required for competence in their specific profession.

The School of Health Technology and Management offers non-credit certificate programs in anesthesia technology, EKG, EMT-paramedic, medical dosimetry, nuclear medicine, patient services training, phlebotomy, polysomnography, radiation therapy and radiologic technology.

Goals and Objectives

The school is committed not only to the education and training of highly competent health professionals, but also to preparing its graduates to assume leadership roles in diverse health care settings.

The school maintains a strong commitment to the team approach to health care, which provides for innovative programs utilizing an interdisciplinary core curriculum, ongoing clinical experience and an active program in continuing professional education. On the graduate level, there is a new emphasis on health policy, health care management, and evidence based practice.

Professional Program Admission

Students seeking admission to the athletic training, clinical laboratory sciences, cytotechnology, occupational therapy, physical therapy, physician assistant and respiratory care programs in the school, either from the College of Arts and Sciences at Stony Brook or from other institutions, must be specifically accepted to the school and to the program they have selected.

Stony Brook students may declare a minor in adapted aquatics or a major in Health Science, which leads to a Bachelor of Science degree. Health Science majors will spend three years on west campus taking liberal arts, science and health-related courses and will fulfill all D.E.C. requirements. The senior year will be spent enrolled in classes in the Health Sciences.

Admission Requirements

Candidates for admission to full-time upper-division study in athletic training, clinical laboratory sciences, cytotechnology, occupational therapy, and respiratory care must have a minimum cumulative average of 2.5 and must have 57 semester hours of credit. In addition, all entry-level clinical programs require the completion of 3 credits in English composition, 6 credits in social and behavioral sciences, 6 credits in arts and humanities and 6 to 8 credits in natural science. (Refer to "Requirements for the Bachelor's Degree" at the beginning of this Bulletin for specific areas of study to satisfy these requirements.) Candidates for admission to the Physical Therapy and Physician Assistant programs must complete a baccalaureate degree prior to admission. Preference is given to applicants to Physical Therapy and Physician Assistant programs with a grade point average (GPA) of 3.0 or higher. Transfer credit is given for course work completed with grades of C or higher.

The individual programs have additional requirements. Please check the admission requirements for entrance to the specific program to which admission is sought. Refer to "Health Sciences Admissions" at the beginning of this Bulletin for application information. Technical standards for professional programs are available upon request. Individual program websites also list additional requirements.

Selection Factors and Procedures

Programs within the school base selection of students on several factors. Experience in the particular field or in the health care system, evidence of ability to succeed academically and demonstrated concern for human beings are considered as primary selection factors. These factors are judged by letters of recommendation, personal interviews, and transcripts, and by personal statements from the applicants.

Admission to the school is determined by the school's Admissions Committee, which is composed of a representative from each department. The Admissions Committee of each program reviews the candidates' transcripts, records and application forms, conducts interviews and makes recommendations to the school's Admissions Committee. Offers of admission are made in order of merit. Although applicants may meet minimum admission requirements, they might not be offered an interview or admission since places are limited by available space.

Recommended Freshman and Sophomore Curricula

The general policy of the school is to avoid, to the greatest extent possible, specific prerequisite course requirements. The purpose of this policy is to permit flexibility in evaluating the records of candidates for admission. Emphasis is placed upon the extent to which the student is prepared through training and experience to pursue the program.

It is recommended that students interested in a career in the health professions choose a sufficient number of courses in the physical and natural sciences to develop a broad understanding of these fields of study. At least one course in English composition, as well as a spectrum of courses in the humanities and social and behavioral sciences, is required.

In the case of a few programs, rigid accreditation criteria force the school to specify special prerequisite course work. Prospective students should consult the information given in subsequent pages of the Bulletin relating to the particular program in which they are interested for special recommendations or prerequisite requirements. These are listed as "Admission Requirements" under the heading for the specific program in the following pages.

Faculty members of the school are available to serve as advisers to freshmen, sophomores and any other undergraduates who aspire to programs in the school. Consult the assistant dean for student affairs for assistance in acquiring a faculty adviser. Undergraduate students interested in applying to an upper-division program are encouraged to seek faculty advisement early.

Health Care Policy and Management Program Admission

The Master's Program in Health Care Policy and Management is offered on either a full-time or part-time basis, with the number of candidates accepted strictly limited to permit close student-faculty interaction. Candidates for admission to graduate study are expected to hold a bachelor's degree from an accredited institution of higher learning. A B average in undergraduate study is required for admission to the graduate program; however, other factors indicating competence and promise are taken into consideration, including Graduate Record Examination (GRE) scores, letters of recommendation, personal interviews, and personal statements by the applicant. In addition, each candidate must hold appropriate professional status (e.g. registration, certification or licensure) in a health field and have practiced in that field for at least one year on a full-time basis (or the equivalent in part-time practice). Candidates must indicate an intention to pursue concentrations in health care management, gerontology, health policy or nutrition.

Students with an unsatisfactory academic history who show evidence of ability in other ways may petition for conditional admission in order to gain an opportunity to prove their ability to successfully carry the course work in the first term of graduate study in the school.

For application procedures, see the section entitled "Health Sciences Admissions" at the beginning of this Bulletin.

Physical Examination and History

Documentation of satisfactory health status, prior to beginning classes, is required. Documentation must include a health history and physical examination report completed by a licensed physician (M.D. or D.O.), registered physician assistant or registered nurse practitioner, not earlier than six months prior to entry into the school; a report of chest x-ray or PPD Mantoux test for tuberculosis; and a report of measles, mumps, rubella, and varicella antibody titer completed within the same period. A note certifying completion of the examination is not acceptable; a full examination report is required. This documentation is submitted to the student health service as part of the student's health record. The school requires an updated health assessment at the beginning of each year.

Additional requirements are specified in the "Physical Examination Policy" section of this Bulletin.

Insurance

Students admitted to the school are required to purchase liability insurance prior to participation in clinical assignments. (Costs vary by program and can range from $15-$65 per year.)

Clinical sites also require students to have proof of health insurance before beginning clinical rotations. It is the individual student's responsibility to arrange appropriate coverage.

Financial Aid

Financial aid, part-time employment, etc., is available in limited amounts. Students may qualify for some of the general support programs administered by the Health Sciences Office of Student Services. For advice and detailed information, contact the Health Sciences Office of Student Services, (See the "Financial Assistance" section of this Bulletin.)

Academic Standing

The School of Health Technology and Management recognizes the necessity for knowledge, as well as superior behavioral, ethical and clinical standards. Students are evaluated on knowledge, professional competence and skill, adherence to professional codes of ethics, sensitivity to patient needs, ability to work with and relate to peers and other members of the health care team, attitude, attendance, punctuality and pro-

fessional appearance. These standards foster the health care team concept and have been established to protect the rights of the patients and communities served by the Health Sciences Center. Failure to demonstrate these important qualities will be reflected in a student's grade.

Undergraduate students must maintain an overall grade point average of 2.0 and a 2.5 minimum average in required professional courses to remain in good standing. Any student who earns a grade point average below 2.0 overall or 2.5 in professional courses will be placed on probation for the following period and terminated if his/her average does not attain those levels at the end of the probationary period. Graduate students must maintain an overall grade point average of 3.0 to remain in good standing. Normally, a student on probation will not be permitted to participate in the required periods of full-time clinical practice. Specific programs may have additional academic criteria or requirements. Refer to individual programs for details.

Grading Policy

The School of Health Technology and Management follows the grading policies stated in the front of this Bulletin with the exceptions that 1) the P/NC, R, and S/U grades are not used; 2) S/F may be used in specifically designated courses where finer grading distinctions are impractical; and 3) D grades may be given to graduate students in graduate level courses for which the credit is counted in determining the grade point average, but no credit is granted toward the Master of Science or Doctor of Physical Therapy degrees.

Dean's List

A Dean's List of superior undergraduate students is compiled at the end of the fourth and eighth modules of each academic year. To be eligible for the Health Technology and Management Dean's List, students must be matriculated full-time in a baccalaureate program of the school and have a minimal grade point average of 3.60 (seniors) or 3.45 (juniors).

Academic Dishonesty

Academic dishonesty shall be defined as misrepresentation of authorship or in any fashion falsifying part or all of any work submitted or intended to be submitted for academic credit. Such misrepresentation or falsification includes, but is not limited to, the use of supportive documentation, mechanical aids or mutual cooperation not authorized by the faculty.

The principles of academic dishonesty also apply to those courses taken during the clinical or internship phases of any program which are taken for credit or otherwise required for completion of a program. Owing to the critical nature of such requirements and student responsibility for the welfare of patients and institutions providing medical care, academic dishonesty is further defined to include the falsification of patient or institutional records, knowingly violating accepted codes of professional ethics or knowingly engaging in activities that might endanger the health or welfare of patients or resident institutions.

The penalty for any substantiated act of academic dishonesty shall be expulsion from the school, unless the dean and the chair of the department in which the accused is a student concur with a Committee on Academic Standing recommendation for a modified penalty.

Appeals

Students may appeal probation or termination by requesting reconsideration of this decision by the dean.

All other academic regulations in effect at Stony Brook University and in the Health Sciences Center ordinarily apply to students of this school. Consult the "Academic Regulations and Procedures" at the beginning of this Bulletin for further information.

Academic Calendar

The School of Health Technology and Management is one of the few schools within the university that is faced with the need to meet concurrent academic and professional requirements. These mandates, joined with the geographic challenges incurred in obtaining suitable clinical experience in the Long Island area, make it impossible to adhere to the usual academic calendar. In order to meet these professional needs, a special academic calendar has been developed. This calendar provides for modules of five weeks in length; courses consist of one, two, three or more modules as determined by the academic faculty. (See the "Academic Calendar" section of this Bulletin and related publications.)

Core Curricula

In addition to the specific professional program required for qualification in their fields, all students registered for the undergraduate programs in clinical laboratory sciences, cytotechnology, occupational therapy, and respiratory care will take one or more of the following core courses and may be required to take other credits within the School of Health Technology and Management:

Core Courses

Course#	Title	Credits
HAS 300	Issues in Health Care	2
HAS 335	Medical Ethics	1
HAS 350	Introduction to Statistics	2
HBP 310	Pathology	3

Programs may require some courses from the following list in addition to the core, basic science and professional courses.

Other Courses

Course#	Title	Credits
HAS 332	Management Concepts for Health Professionals	1
HAS 351	Research Literacy/Research Design	1
HAS 363	Computer Literacy for Health Professionals	1
HAS 490	Research Tutorial	2

Clinical Resources

Clinical instruction takes place at more than 215 clinical affiliates of the Health Sciences Center, in addition to University Hospital. Other sections of this Bulletin describe University Hospital and key affiliates which now exceed 2,400 beds.
Each program director, in consultation with the dean, negotiates affiliation arrangements for the use of those clinical facilities that will provide the best possible range and quality of instruction for students. Therefore, not all programs necessarily send students to any one hospital. Each program director can provide, upon request, information about current arrangements for clinical instruction for his/her student group.

Each student is personally responsible for arranging transportation to and from clinical assignments.

Graduation and Degree Requirements

Undergraduate Degree (B.S.)

Candidates must have earned a minimum of 120 semester hours of credit (including credit granted for proficiency examinations, etc.), with a grade point average of 2.0 during the junior and senior years of study. (Refer to "Requirements for the Bachelor's Degree" in this Bulletin for a complete description.)

All candidates for graduation must complete the general degree requirements, school and core curricula and specific program requirements.

Graduate Degrees (M.S. or D.P.T.)

A cumulative grade point average of 3.0 is required for graduation; the minimum passing grade for each course is a C. See program descriptions for specific degree requirements. All degree requirements for the Health Care Policy and Management and Post-Professional Physical Therapy programs must be completed within five years. In addition, the Health Care Policy and Management program requires that a minimum of 30 semester hours of graduate study be completed at Stony Brook.

Courses

Courses offered by the school are intended for Health Technology and Management students only. However, some are open on a limited basis, with permission of the instructor, to other students. Priority is given to Health Sciences students.

The Center for Public Health Education

The Center for Public Health Education (CPHE) has been involved in education for health professionals and human service professionals since 1983. Its mission is to provide relevant and critical information on HIV/AIDS that will: support health and human service professionals caring for people infected with HIV/AIDS; promote quality care and target resources needed to meet the needs of underserved communities; promote HIV prevention, education and harm reduction; and influence public policy relevant to the HIV/AIDS epidemic.

The number of programs provided by the CPHE document the presence of a strong educational commitment and a very active continuing program of education. Tens of thousands of providers from the Long Island community have participated in a wide variety of programs conducted by the CPHE throughout the region.

- The CPHE is a partner in the New York/New Jersey AIDS Education and Training Center (AETC), funded by the Health Resources and Services Administration (HRSA). As a local performance site, the CPHE designs HIV-related training programs tailored to the specific needs of clinicians. Programs range from general HIV/AIDS overviews to in-depth, advanced trainings, mini-residencies, and clinical consultations. Focused training is offered in subspecialties that address the needs of men, women and children with HIV, as well as special populations such as adolescents, inmates, substance abusers and the mentally ill.
- The New York State Department of Health AIDS Institute provides funding to the CPHE to develop and deliver a wide range of HIV educational programs that include the new NYS 2005 HIV Testing Guidance as well as other relevant topics such as domestic violence, cultural competency, and HIV risk reduction and harm reduction, viral hepatitis and STIs.

The AIDS Institute provides support to the CPHE as a Center of Expertise in Case Management. The Center has received a contract from the New York State Department of Health to work on a Long Island wide needle and syringe disposal initiative.

For further information contact:
The Center for Public Health Education
School of Health Technology and Management
Bededict House
Stony Brook University
Stony Brook, New York 11794-4016
(631) 444-3245 fax: (631) 444-6744
Attention: Patricia Campagna, Associate Director

Program in Health Science Leading to the Bachelor of Science Degree

Program Director: Deborah Zelizer

Professors: Peter S. A. Glass, Lawrence E. Reinstein, Stephen A. Vitkun

Associate Professors: Terry M. Button, Maria R.G. Lagade, Srinivas N. Pentyala

Assistant Professors: Michael J. Bonvento, Cathy A. Cahill, Linda M. Cimino, MaryAnne Cronin, Sharon A. Cuff, Leo J. DeBobes, Karen R. Dybus, Robert G. Eaton, Peter C. Flanagan Jr., Vanessa Glover, Cheryl Hochenberg, Anthony M. Indelicato, Paul Keraga,, David B. LaBelle, Olga Larios, John T. Marchese, Melinda Monteforte, Edward J. O'Connell, Margaret J. Perno, Carol A. Russo, Marianna Savoca, Joy E. Schabel, Andrew Schaeffer, Nina Patti Slota, William Stanley, Marie Varela,

Tamara E. Weiss, Andrew C. White, Joseph E. Whitton, Deborah Zelizer

Lecturers:, Sandeep Ailawadi, Joseph J. Balsamo, Nesly Beausoleil, John M. Esposito, Wendy Griffin, Ellen Malezsewski, Catherine D. McWilliams, Stacey L. Murphy, Bessie Ortega, Stephanie Patterson, Paul S. Reyes, Michele Rice-Nelson, Marianne T. Russo, Deodat Dan Somaiah

Instructors: Laura J. Borghardt, Louis A. Coronia, Katherine Sara Degen, Robbye E. Kinkade, Laurie Leverich, Carmen P. McCoy, Randin S. Miller, Janet Zwergel

Affiliated Faculty

Program Advisors: Alan M. Leiken (Associate Professor, Health Care Policy and Management), Nanci C. Rice (Associate Professor, Health Care Policy and Management), Candace Golightly (Assistant Professor, Clinical Laboratory Sciences)

Professor: Craig A. Lehmann (Clinical Laboratory Sciences)

Associate Professor: Moises Eisenberg (Pharmacology Science)

Assistant Professors: Donna A. Crapanzano, Donna Ferrara-McCord, Valerie Kuemmel (Physician Assistant Education); M. Veronica McKinnon (Health Care Policy and Management); Christine Pitocco (Clinical Laboratory Sciences); Paul Werfel (EMT–Paramedic); Dawn Blatt, Sharon Martino (Physical Therapy)

Lecturers: Carol M. Gomes, Dennis L. Proul (Health Care Policy and Management); Lawrence M. Zacarese (EMT – Paramedic)

The School of Health Technology and Management offers a Bachelor of Science degree in Health Science (BSHS), with clinical and non-clinical concentrations. Non-clinical concentrations of study include community health education, disability studies, environmental health, health care informatics, health care management, medical billing and coding, pharmacy technician, and public health. Clinical concentrations of study include anesthesia technology, emergency and disaster management, medical dosimetry, nuclear medicine technology, radiation therapy, and radiologic technology. The curriculum requires that students receive a broad liberal arts education during their first three years. In the senior year, the curriculum focuses on health care related topics. Graduates will be liberally educated and knowledgeable about health care, and can expect to be employed by hospitals; integrated health care delivery systems; physician group practices; health departments; nursing homes; and managed care, corporate and not-for-profit organizations. They can also pursue clinical degrees through appropriate admissions processes.

While there is no formal application process, students should complete the following requirements before advancing to the senior year courses in the program*:

a. 91 credits with a minimum grade point average of 2.0
b. All D.E.C. requirements
c. A minimum of 16 credits of D.E.C. E classified courses in the natural sciences.
d. 21 credits of related electives (see below). Any natural science course taken beyond the minimum requirement of 16 credits can also satisfy related elective requirement.
e. 10 upper-division credits (300 and 400 level courses). Note: Can be met by courses meeting D.E.C., natural science, or elective requirements.
f. 10 credits of computer science/information systems electives are strongly recommended as prerequisites for the Health Care Informatics concentration. CSE 101, CSE 113, and CSE 114 are strongly recommended.

Related Electives

Students are encouraged to take related electives designated:

- ECO, CSE and BUS for the Health Care Management concentration
- CSE, PSY, ECO and BUS for the Health Care Informatics concentration
- HIS, HBP, ECO, MEC, BCP, SOC and BUS for the Environmental Health concentration
- LHW, ECO, ANT, SOC, HMC, PSY and BUS for the Public Health concentration
- SOC, HWC, LHW, PSY, SSI and HMC for the Community Health Education concentration

Call the Health Science program for advising and an extensive list of related electives or see the Course Description listing in the University Undergraduate Bulletin for complete information.

Program Requirements

A. Required Core Courses - Fall Semester (Senior Year)

For the first semester of the last year of study (senior year), all students enroll in 15 credits of core health science courses including:

Course #	Title	Credits
HAN 300	Health Care Issues	3
HAN 333	Communication Skills	3
HAN 335	Professional Ethics	3
HAN 364	Issues in Health Care Informatics	3
HAN 383	Professional Writing	3

Special Academic Requirements

To be in good standing in the Health Science program, a student must maintain a 2.0 overall cumulative grade point average, with a 2.5 minimum professional grade point average in the required HAN (health science major) courses. All core Health Science program courses must be passed with a grade of C or better before a student is permitted to advance to the concentration courses. If a student receives a grade less than C in any of the HAN courses, the course must be repeated.

*A conditional approval for advancement may be granted if, upon judgment of the faculty, there are exceptional circumstances concerning program prerequisites. A student with 85 credits or U4 standing by the fall start date may be allowed to advance to the senior year curriculum. Outstanding prerequisites may be taken concurrently with the BSHS senior year curriculum, subject to approval by the program director.

B. Concentration Courses - Spring Semester (Senior Year)

During the last semester of the senior year, students must take one of the following concentrations.

Health Care Management

This concentration provides students with the knowledge and skills required to manage health care practices, plan health care programs and utilize the fundamentals of health care management and health services administration.

Course#	Title	Credits
HAN 432	Introduction to Health Care Management	4
HAN 434	Corporate Compliance and Regulation	4
HAN 435	Sales and Marketing in Health Care	3
HAN 436	Continuous Quality Improvement in Health Care	3

Community Health Education

This concentration provides students with the knowledge and skills needed to plan, implement and evaluate health education programs in the community. Students who successfully complete this concentration may be eligible to apply for the national certification examination for health educators. Employment opportunities may be found in public and private health-related agencies, hospitals and HMOs.

Course#	Title	Credits
HAN 440	Introduction to Community Health Education	3
HAN 442	Community Health Education Models and Resources	3
HAN 444	Teaching Strategies	4
HAN 456	Behavioral and Social Aspects of Health	3

Public Health

This concentration provides students with a basic foundation, including epidemiology and biostatistics, in public health. Students who graduate with this concentration may find employment in health departments, public health agencies, health maintenance organizations and health-related corporations.

Course#	Title	Credits
HAN 450	Introduction to Public Health	4
HAN 452	Epidemiology and Biostatistics	3
HAN 454	Issues in Public Health	3
HAN 456	Behavioral and Social Aspects of Health	3

Health Care Informatics

This concentration prepares students for a career in health care information systems, and processing and managing health care data with computer and communication technologies. Emphasis is placed on health care information systems' architecture, computerized medical data processing and clinical decision support systems. Ten credits of computer science/information systems electives are strongly recommended as prerequisites (CSE 101, CSE 113 and CSE 114 are strongly recommended).

Course#	Title	Credits
HAN 462	Developing Health Information Systems	4
HAN 464	Health Information Systems Management	4
HAN 466	Applied Health Care Informatics	4
HAN 467	Utilization and Outcomes Research Methods	3

Environmental Health

This concentration explores the concepts and principles of various environmental health issues, including lead management, pest management, hazardous waste management, and food service sanitation. Emphasis is placed on the recognition, identification and control of environmental contaminants in the workplace; prevention and preparedness for hazardous material incidents; and compliance with various regulatory agencies.

Course#	Title	Credits
HAN 470	Environmental Health, Radiation Safety and Safety Engineering	4
HAN 474	Industrial Hygiene	4
HAN 476	Hazardous Materials, Emergency Response and Environmental Auditing	4
HAN 478	Independent Study in Environmental Health	2

Medical Billing and Coding

This concentration provides students with the knowledge and skills required to enter the health care industry in the field of medical billing and coding. Coursework covers the practices and procedures for coding, reimbursement, medical records issues and The Centers for Medicare and Medicaid Services guidelines.

Course#	Title	Credits
HAN 420	ICD-9-CM for Medical Billers and Coders	4
HAN 421	CPT for Medical Billers and Coders	4
HAN 422	Medical Billing Methodologies	3
HAN 423	Clinical Records	3

Pharmacy Technician

This concentration provides students with the knowledge and skills required for competent performance as nationally certified pharmacy technicians in either hospital or retail settings.

Course#	Title	Credits
HAN 411	Math and Dosage Calculations for the Pharmacy Technician	3
HAN 412	Legal and Ethical Issues for Pharmacy Technicians	2
HAN 413	Pharmacology for Pharmacy Technicians	3
HAN 414	Pharmacy Technician I	3
HAN 415	Pharmacy Technician II	3

Disability Studies

This concentration provides students with an interdisciplinary focus of study in areas such as independent living, employment, adults and children with disabilities, and health and community issues. This concentration will prepare students for entry-level professional and managerial positions in developmental or physical disability services agencies, independent living centers, mental health centers, and geriatric and vocational rehabilitation agencies.

Course#	Title	Credits
HAN 443	Aging and Disability	3
HAN 446	Disability Health and Community	3
HAN 447	Children with Disabilities	3
HAN 448	Disability and Employment	3
HAN 449	Project in Disability Studies	4

Emergency and Disaster Management: Emergency Medical Service Specialist

This concentration of study provides a foundation in the recognition and management of HAZMAT incidents; a comprehensive overview of the nuclear, biological and chemical (NBC) agents that are more likely to be used as Weapons of Mass Destruction; and an understanding of the tactics and objectives of terrorism. Students will also be trained as emergency medical technicians through a 120-hour EMT course. Students that successfully complete this concentration of study will be admitted into the nationally known post-baccalaureate paramedic-training program, a 1204-hour program with a heavy clinical commitment. This concentration was specifically developed to expand conventional EMS training programs to better prepare paramedics for the realities of today's workforce.

Course#	Title	Credits
HAN 370	Prehospital Care	6
HAN 472	Weapons of Mass Destruction: Nuclear, Biological and Chemical Agents	3
HAN 473	Emergency Response to Terrorism	3
HAN 477	HAZMAT Training for Emergency Medical Services	3

Radiation Therapy

This concentration is designed to provide students with the knowledge and skills required for the competent performance in entry-level positions in the field of radiation therapy. Radiation therapy is the use of radiation to treat or relieve pain of cancer and other diseases. HAN 392 Radiation Oncology/Medical Physics I (4 credits) is required during the fall semester of the senior year as a prerequisite to acceptance into the concentration. Acceptance into the post-baccalaureate clinical year is required in order to enter the concentration. Students must complete the one-year post-baccalaureate clinical training in order to be eligible to take the National Registry Examination.

Note: Preference will be given to students who document a strong science and mathematics background (minimum grade of C in each course; overall G.P.A of 2.5). Coursework to include: calculus, general physics, human anatomy, and physiology or other natural science courses. Preference will also be given to students who have CPR certification; health care experience (paid or volunteer) and/or community service.

Course#	Title	Credits
HAN 482	Introduction to Pathology	3
HAN 486	Principles and Practice of Radiation Therapy	4
HAN 488	Medical Imaging and Radiographic Anatomy	3
HAN 492	Radiation Oncology/Medical Physics II	4

Medical Dosimetry

This concentration is designed to provide students with the knowledge and skills required for competent performance in entry-level positions in the field of medical dosimetry. A medical dosimetrist is a member of the radiation oncology team who has the education and expertise necessary to generate radiation dose distributions and dose calculations for cancer patients, in collaboration with the medical physicist and the radiation oncologist. HAN 392 Radiation Oncology/Medical Physics I (4 credits) is required during the fall semester of the senior year as a prerequisite to acceptance into the concentration. Acceptance into the post-baccalaureate clinical year is required in order to enter the concentration. Students must complete one-year post-baccalaureate clinical training in order to be eligible to take the National Registry Examination.

Note: Preference will be given to students who document a strong science and mathematics background (minimum grade of C in each course; overall G.P.A. of 2.5). Coursework to include: 2 semesters of college calculus and physics, human anatomy, and physiology or other natural science courses. Preference will be given to students with health care experience (paid or volunteer) and/or community service.

Course#	Title	Credits
HAN 482	Introduction to Pathology	3
HAN 486	Principles and Practices of Radiation Therapy	4
HAN 488	Medical Imaging and Radiographic Anatomy	3
HAN 492	Radiation Oncology/Medical Physics II	4

Anesthesia Technology

This concentration provides the knowledge and skills required for students to function as integral members of anesthesia teams in surgical settings. After completion of this concentration, students can work in entry-level non-clinical positions in an anesthesia department or continue to the post-baccalaureate Anesthesiology Technologist Program to be eligible to take the ASATT certification examinations.

Course#	Title	Credits
HAN 434	Corporate Compliance and Regulation	4
HAN 481	Introduction to Anesthesia	2
HAN 483	Cardiopulmonary Physiology for ASATT	3
HAN 485	Clinical Monitoring	1
HAN 489	Pharmacology for ASATT	4

Nuclear Medicine

This concentration within Radiologic Sciences is designed to educate students to meet a growing need in the health care industry for highly trained technologists who utilize rapidly developing technologies to image the human body. Nuclear medicine is widely used for imaging the bodies of patients with cancer and cardiac conditions. HAN 394 Imaging Physics (3 credits) is required during the fall semester of the senior year as a prerequisite to acceptance into the concentration. Acceptance into the post-baccalaureate clinical year is required in order to enter the concentration. Students must complete the one-year post-baccalaureate clinical training in order to be eligible to take the National Registry Examination.

Note: Preference will be given to students who document a strong science and mathematics background (minimum grade of C in each course; overall G.P.A of 2.5). Coursework to include: college calculus and physics, human anatomy, and physiology or other natural science courses. Preference will be given to students with health care experience (paid or volunteer) and/or community service.

Course#	Title	Credits
HAN 401	Radiobiology and Health Physics	3
HAN 402	Radiographic Anatomy and Pathology	3
HAN 426	Nuclear Medicine Instrumentation	3
HAN 427	Nuclear Medicine Procedures	6
HAN 429	Radiopharmacy and Therapy in Nuclear Medicine	3

Radiologic Technology

This concentration in Radiologic Sciences has been developed to educate students to meet the growing demand for imaging technologists. HAN 394 Imaging Physics (3 credits) is required during the fall semester of the senior year as a prerequisite to acceptance into the concentration. Acceptance into the post-baccalaureate clinical year is required in order to enter the concentration. Students must complete the one-year post-baccalaureate clinical training in order to be eligible to take the National Registry Examination.

Note: Preference will be given to students who document a strong science and mathematics background (minimum grade of C in each course; overall G.P.A of 2.5). Coursework to include: college calculus and physics, human anatomy, and physiology or other natural science courses. Preference will be given to students with health care experience (paid or volunteer) and/or community service.

Course#	Title	Credits
HAN 401	Radiobiology and Health Physics	3
HAN 402	Radiographic Anatomy and Pathology	3
HAN 404	Radiology Instrumentation	3
HAN 405	Radiographic Technique	3
HAN 406	Radiographic Procedures and Positioning I	6

Courses

HAN 200 Human Anatomy and Physiology for Health Science I

This is the first course in a two-part sequence that introduces the study of human anatomy and physiology at the cell, tissue and organ system levels of organization, with emphasis on understanding disease processes associated with systems. This course is designed for Health Science (HAV) majors, particularly those interested in pursuing HAN clinical concentrations of study. Open to non-HSC students. Prerequisite: one BIO course

3 credits Lecture

HAN 300 Health Care Issues

Provides students with an overview of the organization of the health care delivery system. Includes the role of health care professionals and healthcare organizations. Explores issues regarding health care insurance, the uninsured and underserved, managed care and changes in the healthcare marketplace. Provides an overview of major diseases including epidemics, chronic and acute illness. Discusses the role of health promotion and disease prevention as well as alternative and complementary medicine. Restricted to HAN majors.

3 credits Lecture

HAN 312 Medical Terminology and Human Anatomy

Provides the medical terminology and human anatomy needed for non-clinical roles in healthcare. Presents medical terminology through didactic and experiential techniques by reviewing the digestive, urinary, integumentary, reproductive, respiratory, endocrine, nervous, musculoskeletal, cardiovascular and lymphatic systems. Students will learn how to build a medical vocabulary and understand the importance of precise communication in the delivery of health care.

2 credits Lecture

HAN 333 Communication Skills

Introduces the principles of effective communication and stages of group development. Offers theory and practice of interpersonal communication and groups. Provides specific topics related to health care teams. Restricted to HAN majors.

3 credits Lecture

HAN 335 Professional Ethics

Provides students with a framework for identifying ethical dilemmas in professional settings.Through the use of case studies and role-playing, students simulate ethical situations relating to confidentiality, informed consent and truth-telling, and explore various approaches for resolving these conflicts. Presents professional codes of ethics using small and large group discussions. Presents and discusses ethics-related topics such as genetics, transplants, cloning, advance directives, and health care accessibility. Restricted to HAN majors.

3 credits Lecture

HAN 364 Issues in Health Care Informatics

Acquaints students with the use and application of personal computers and medical information systems used in health care. Emphasizes the optimization and customization poten-

tial of computer functions for standard and specialized tasks. Examines the present and potential use of the Internet in the health care arena. Presents the application of medical informatics to health care delivery though classroom demonstrations and discussions. Restricted to HAN majors.
3 credits Lecture

HAN 370 Prehospital Care

Provides necessary knowledge and skills to recognize signs and symptoms of illness and injury and the appropriate application of emergency medical care. Upon successful completion of the course and the completion of a 24-hour clinical observation rotation, students will be eligible to take the New York State Department of Health Emergency Medical Technician (EMT) exam. Includes advanced pathophysiology and expands upon the EMT training curriculum. Serves as a prerequisite course for paramedic training. Restricted to students approved for appropriate senior year track in the Health Science major.
6 credits Lecture, Laboratory

HAN 383 Professional Writing

Comprehensive overview of the skill set required to write professional documents. Students will be required to communicate to a variety of audiences via letters, memos, electronically transmitted documents, researched essays, and brochures. Introduces students to software packages and other web-based resources. Restricted to HAN majors.
3 credits Lecture

HAN 392 Radiation Oncology/Medical Physics I

Provides students interested in a career in medical dosimetry with an introduction to medical physics for radiation oncology. First of a two-part course that provides the basis for further study of the applications of radiation oncology physics to radiation treatment planning and radiation dose calculations. Includes topics such as structure of matter, nuclear transformations, x-ray production, radiation generators, interaction of radiation with matter, measurement of ionizing radiation, quality of x-rays, and measurement of absorbed dose. Restricted to HAN majors.
4 credits Lecture

HAN 394 Imaging Physics

Provides an introduction to Radiological Physics for students interested in a career in medical imaging or radiation therapy. Elements of general physics relevant to Radiological Sciences are presented. Topics include production of radiation, radioactivity, interaction of radiation with matter, radiation detection, nuclear magnetic resonance, and production and detection of ultrasound. Restricted to HAN majors
3 credits Lecture

HAN 395 Radiation Physics in Medicine

Provides an introduction to radiological and radiation oncology physics for students interested in a career in either medical imaging or radiation therapy/oncology. Presents elements of mathematics and general physics relevant to the radiological sciences. Topics include production of radiation, radioactivity, interaction of radiations with matter, radiation detection, characteristics of high energy medical LINAC radiation, absorbed dose calculation and measurement, radiography, radionuclide imaging, imaging with ultrasound, imaging with magnetic resonance, and basic medical radiation safety
4 credits Lecture

HAN 401 Radiobiology and Health Physics

Presents an overview of the biological effects of radiation by examining the interaction of radiation with matter, macromolecules, cells, tissue and the whole body. Studies the clinical impact of responses to radiation. Introduces students to radiation safety through topics such as biologic consequences of irradiation, regulatory limitation of exposure, methods for exposure minimization, and radiation monitoring. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394
3 credits Lecture

HAN 402 Radiographic Anatomy and Pathology

Provides basic radiographic anatomy from both the projection and cross sectional point of view. Introduces to basic disease processes, including the nature and causes of disease and injury. Examines these processes on medical images acquired through radiography, computed tomography, angiography, magnetic resonance, scintigraphy, emission computed tomography and ultrasonography. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394
3 credits Lecture

HAN 404 Radiology Instrumentation

Expands imaging physics into the area of Radiologic Technology. Studies the physical basis, construction, operation, and quality control of radiographic, fluoroscopic, computed radiographic, direct radiographic, digital subtraction, and computed tomography systems. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394
3 credits Lecture

HAN 405 Radiographic Technique

Focuses on production of radiographic image. Includes rationale for selection of technical factors, issues of image resolution and contrast, image receptor technology; film sensitometry; image intensification; film processing; grids; automatic exposure control; portable/surgical procedures; and basic contrast agent pharmacology, and administration directly related to the production of radiographic images. Presents an overview of the special modalities of computed radiography (CR), direct radiography (DR), fluoroscopy, digital fluoroscopy, digital subtraction angiography (DSA), computed tomography (CT), and picture archive communication systems (PACS). Special emphasis is placed on reducing patient exposure to radiation. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394
3 credits Lecture

HAN 406 Radiologic Procedures and Positioning I

Examines routine clinical radiographic positioning of the upper and lower extremities, shoulder, spine, chest, pelvis, skull, abdomen, and digestive and urinary systems. Includes portable studies, operating room applications, angiography and advanced imaging techniques. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394
6 credits Lecture, Laboratory

HAN 410 Survey of Nursing

Provides introduction and overview of nursing concepts. Addresses the realities of work and social and political pressures of the nursing profession.
2 credits Lecture

HAN 411 Math and Dosage Calculations for the Pharmacy Technician

Comprehensive overview of math concepts essential to the practice of the pharmacy technician's skill set. Through extensive work with fractions, decimals, ratios, percentages, and alligations, students will be able to develop the skills necessary to calculate doses and prepare medications. Apothecary, Avoirdupois, and Metric systems will be explained and compared. Prepares student to function as a technician on the national level while clearly delineating the role as prescribed by New York State law. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 412 Legal and Ethical Issues for Pharmacy Technicians

Comprehensive overview of the laws governing the practice of pharmacy on both the state and Federal levels. Focus is on the scope of practice and the legal and ethical role of the pharmacy technician. Regulatory agencies and professional organizations will be discussed in depth. Restricted to students approved for appropriate senior year track in the Health Science major.
2 credits Lecture

HAN 413 Pharmacology for Pharmacy Technicians

Comprehensive overview of all categories of prescription and non-prescription medications. Emphasis is placed on drug classes and mechanism of action in order to provide understanding of why certain drugs are prescribed for certain disease states. Topics will include drug classes, pharmacokinetics, therapeutic uses, adverse effects, and drug interactions, adapted specifically for the pharmacy technician. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 414 Pharmacy Technician I

Comprehensive overview of topics and subjects relevant to the skills set of pharmacy technicians in both hospital and retail settings. Focus is on service aspects, roles, prescription filling, order filling, preparation of products, and proper use of equipment, inventory management, pharmacy literature, and reimbursement. Prepares student to function as a technician on the national level while clearly delineating the role as prescribed by New York State law. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 415 Pharmacy Technician II

Comprehensive overview of topics and subjects relevant to the skills set of pharmacy technicians, specifically in the retail settings. Focus is on service aspects, roles, prescription filling, order filling, preparation of products, and proper use of equipment, inventory management, pharmacy literature, and reimbursement. Prepares student to function as a technician on the national level while clearly delineating the role as prescribed by New York State law. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 418 Pharmacy Technician Retail Clinical

Experiential practicum enables the student to practice as a pharmacy technician in the retail setting under the supervision of an approved preceptor. The focus of this experience will include: the role of the pharmacy technician in the retail setting, customer service principles, prescription reading, patient profiles, preparation of prescriptions for filling, third party billing, cash handling, purchasing, and use of the computer. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Clinical

HAN 419 Pharmacy Technician Hospital Clinical

Experiential practicum enables the student to practice as a pharmacy technician in the hospital setting under the supervision of an approved preceptor. The focus of this experience will include: the role of the pharmacy technician in the hospital setting, customer service principles, prescriber order reading, patient profiles, preparation of medications for order filling, aseptic technique, preparation of intravenous and extemporaneous medication and use of the computer. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Clinical

HAN 420 ICD-9-CM for Medical Billers and Coders

Comprehensive overview of the practice and procedure of International Classification of Diseases, 9th Revision, Clinical Modification, (ICD-9-CM) guidelines for coding and reporting in the hospital and physician's office. Topics include: accurately translating infectious, parasitic, body-systems disease; physical and mental disorders, Uniform Hospital Discharge Data Set (UHDDS) definitions and ICD-9-CM codes to hospital inpatient records, identification of patient encounter types, and interpretation of health/medical records. Course will also cover Supplementary Classification such as E and V Codes. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 421 CPT for Medical Billers and Coders

Comprehensive overview of the practice and procedures of the Current Procedural Terminology (CPT-4) code set. Topics include: interpreting conventions, formats and instructional notations; definitions of the classification system and CPT nomenclature; and applying basic guidelines from medical, surgical, evaluation/management, and diagnostic services to select medical procedures and services that require coding in the hospital and physician office. Restricted to students

approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 422 Medical Billing Methodologies

Comprehensive overview of the practice and procedures of the Medical Billing in both the hospital and physician's office. Topics include the link between International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) diagnoses and Current Procedural Terminology (CPT-4) procedure coding for reimbursement, reimbursement methodologies, medical records issues, and guidelines of the Health Care Financing Administration (HCFA) and Evaluation and Management codes and guidelines. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 423 Clinical Records

Exposes students to actual medical records from a variety of clinical settings: ambulatory surgery centers, emergency departments and various inpatient and outpatient hospital departments. Focuses on an intensive application of coding skills. Advanced areas of medical records coding will emphasize sequencing of multiple diagnoses and procedures to assure correct reimbursement. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 426 Instrumentation for Nuclear Medicine Technology

Expands on HAN 394 (Imaging Physics), specifically in the area of Nuclear Medicine Technology. Examines the physical basis, construction, operation and quality control of radiation detection, pulse height analysis, planar imaging, Single Photon Emission Tomography (SPECT) imaging and Positron Emission Tomography (PET) imaging devices. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394
3 credits Lecture

HAN 427 Nuclear Medicine Procedures

Covers principles, methods and instrumentation used in Nuclear Medicine imaging. Examines the preparation and performance of planar, Single Photon Emission Tomography (SPECT) and Positron Emission Tomography (PET) nuclear medicine imaging procedures. Provides information needed to perform a variety of imaging and/or functional studies (e.g. liver, spleen, hepatobiliary, gastric reflux, gastrointestinal bleeds, lung, endocrine, central nervous system). Presents in vitro nuclear medicine procedures.Principles of sensitivity, specificity, accuracy, and predictive values of diagnostic testing are also examined. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394
6 credits Lecture, Laboratory

HAN 429 Radiopharmacy and Therapy in Nuclear Medicine

Examines the production, labeling, quality control, clinical biodistribution, and application of radionuclide tracers for nuclear medicine imaging. Covers radionuclide and radiopharmaceutical characteristics that provide suitable imaging properties. Discusses various aspects of laboratory procedures (e.g. safe handling of radionuclides, radiation safety surveys, hot laboratory instruments, radiopharmaceutical preparation, quality control and sterile technique). Explores pathologies, radiopharmaceuticals, dosage calculation and administration, and patient management issues related to radionuclide therapy. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394
3 credits Lecture

HAN 432 Introduction to Health Care Management

Introduces students to the practices and theories of health care policy and management. Presents an overview of the trends in public policy and management techniques. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 434 Corporate Compliance and Regulation

Provides an overview of recently enacted legislation requiring healthcare institutions' compliance programs. Introduces regulations and compliance including anti-trust, controlled substances, Americans with Disabilities Act, Occupational Safety and Health Act, Joint Commission on Accreditation of Health Care Organizations, Department of Health jurisdiction over hospitals and licensure requirements. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 435 Sales and Marketing in Health Care

Introduces the essential aspects of marketing and sales in the changing health care world. Addresses the concept of marketing, the nature of marketing strategy and the environment in which marketing operates. Provides a framework for understanding the consumer, along with key selling methods. Topics included the “four Ps” of marketing, promotional elements of marketing, the communication process, and personal selling. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 436 Continuous Quality Improvement in Health Care

Provides basic principles associated with Total Quality Management (TQM) and Continuous Quality Improvement (CQI). Aids identification and quality problem solving found in all health care organizations utilizing continuous quality improvement (CQI) tools and techniques. Through the use of case studies, current events, and textbook materials, students will learn how to identify problems, recommend improvements, and collect data to demonstrate process improvement.

Restricted to students approved for appropriate senior year track in the Health Science major. Co-scheduled with HPH 617.
3 credits Lecture

HAN 440 Introduction to Community Health Education

Introduces students to the foundation of planning, implementing and evaluating community-based health education programs. Presents classic theories of health education including the social learning theory, health belief model, and the attribution theory. Reviews relevant health education programs. Examines various learning styles and skills. Basic health education models are introduced and critiqued through individual and group projects. Reviews health education professional organizations and associations. Each student is required to design a health education program for a selected population. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 442 Community Health Education Models and Resources

Reviews past and present community health education models utilized locally, nationally and internationally. Analyzes health education programs and teaches skills that may be applied to future projects. Discusses resources for providing community health education from private corporations, foundations, and public organizations and agencies. Introduces governmental and non-governmental resources for planning and implementing health education programs for diverse and special populations. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 443 Aging and Disability

Provides comprehensive overview of aging and disability. Includes introduction to the field of geriatrics, age related disabilities, and the experiences of people with disabilities as they age. Presents an interdisciplinary perspective. Incorporates social, environmental, cultural, economic and historical issues related to disability and aging. Film, narrative, biography and guest speakers provide students with first-hand accounts of elders with disabilities. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 444 Teaching Strategies

Students examine their roles as health planners and health teachers for diverse communities. Presents written goals, behavioral objectives, health education teaching strategies and evaluation plans. Reviews appropriate media (print, audiovisual, software, interactive programs) for selective programs. Requires students to prepare, deliver and evaluate a community health education session that is videotaped and reviewed by the class. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 445 Independent Living and Disability

Interdisciplinary exploration of how independent living has evolved as a social and political movement. Topics include analyzing current legislation, social issues and living philosophies. Guest speakers will facilitate the students gaining a multi-layered understanding of the issues faced by people with disabilities who are living independently. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 446 Disability Health and Community

Presents a comprehensive view of health and community concerns experienced by people with disabilities. Explores historical analysis, biomedical discourse, cultural critique, and field research to understand the evolution of medical practices, cultural beliefs, and social structures influencing the treatments, services, and opportunities available to people with disabilities in the United States and internationally. Includes gender, sexuality, race, poverty, "invisible disabilities", eugenic sterilization, assisted suicide topics. Guest speakers will facilitate a multi-layered understanding of the issues faced by people with disabilities and their families. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 447 Children with Disabilities

Provides a comprehensive overview of the theories of child development and issues related to children with developmental spectrum disorders, neurodevelopmental disorders, and communication and learning disorders. Includes behavioral, developmental, language, medical, motor and sensory needs of children with developmental disabilities. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 448 Disability and Employment

Presents a comprehensive overview of the Disability and Employment field. Explores pertinent employment-related legislation, the vocational rehabilitation system, the structure of existing governmental and not-for-profit programs, and current disability employment practices, through the use of didactic and experiential techniques. Emphasizes the key roles of placement professionals. Provides individualized learning opportunities for individuals with disabilities who happen to be job seeking. Restricted to students approved for appropriate senior year track in the Health Science major
3 credits Lecture

HAN 449 Project in Disability Studies

Students will develop independent projects in topic area of disability studies. They will be required to develop a set of readings, engage in a minimum of 15 hours of experiential learning [in the form of community site-visits, volunteerism, or internships]. Course instructors, and assigned mentors will assist students during bi-weekly group meetings and by scheduled appointments. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture, Laboratory

HAN 450 Introduction to Public Health

Introduces the principles and practices of public health, including definitions and concepts, history and development, determinants of health, and ethical and legal aspects of public health. Orients students to various public health settings such as local and state health departments, not-for-profit community organizations, and agencies for special populations. Provides students with basic knowledge and skills for conducting community needs assessment with diverse populations. Addresses infectious disease control, environmental health, chronic disease control, tobacco and drug control, maternal and child health, women's health, and injury control topics. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 452 Epidemiology and Biostatistics

Provides students with the basic knowledge and skills for studying diseases of individuals and groups. Introduces biostatistical approaches and skills for collecting and organizing data of communities to meet health needs. Addresses epidemiological concepts, limitations and resources. Through the use of case studies, students study various epidemiological models used regionally, nationally and internationally. Includes discussions about ethical situations related to research and statistical studies. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 453 Research Methods in Public Health

Focuses on the details of public health research design. Guides students through a step-by-step approach through qualitative, comparative, and quantitative research designs and analysis methods. Students will learn the language of research, various methods for conducting research and how to identify and synthesize research literature. Builds on concepts covered in the other courses in the public health/community health concentration. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 454 Issues in Public Health

Addresses contemporary topics related to public health policies and practices. Topics include recent regional and national pandemics, changes in public health prevention programs and current political policy-making. Introduces health trends and patterns through the study of changing laws and policies governing public health services and education. Guest lecturers from the county health departments and local community health and public health organizations present up-to-date information on public health issues. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 456 Behavioral and Social Aspects of Health

Introduces social and behavioral factors as determinants of health. Explores theories of human and group behavior and health behavior change models through lecture and case study. Explores the dynamics between health behaviors and culture, gender, age and socioeconomic status. Students study various inventory tools for measuring health-related knowledge and methods for measuring behavior change. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 462 Developing Health Information Systems

Introduces students to fundamental hardware and software concepts, operating systems, GUI environments and system development life cycles. Reviews Windows applications such as spreadsheet, database, forms, queries and reports. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 464 Health Information Systems Management

The course includes organizational change issues in healthcare environments, resource management (inventory, tracking and acquisition) and the role of policy formulation. Consumer issues, standards and security and the provision of health information resources to healthcare workers will also be covered. Relevant applications and issues related to health services will also be explored. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 466 Applied Health Care Informatics

Provides overview of the role of information systems in healthcare organizations. Emphasizes the integration of evidence-based research into clinical decision-making and the influence of information systems on health outcomes. Explores technical, organizational and cost-benefit issues related to healthcare information systems, including clinical decision-support, integrated networking and distributed computing technologies, telemedicine applications and artificial intelligence solutions. Through a combination of classroom-based seminars, group case studies, and computer laboratory exercises, students will develop and exercise analytical skills for appraising health information systems, as well as acquire practical experience using biomedical research databases, desktop application software, and electronic communication systems. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 467 Utilization and Outcomes Research Methods

Provides the necessary tools to evaluate and implement research methods and utilize outcomes within the healthcare system. Presents an overview of statistics and research methods as well as , and evaluation techniques by utilizing group discussions and case studies. Demonstrates the utilization of technology as a resource for existing research as well as management tools. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 470 Environmental Health, Radiation Safety and Safety Engineering

Presents an overview of the field of occupational health and safety. Focuses on three key areas including radiation protection, environmental health, and safety engineering. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 472 Weapons of Mass Destruction: Nuclear, Biological and Chemical Agents

Presents a comprehensive overview of nuclear, biological incendiary, chemical and explosive agents that are more likely to be used as Weapons of Mass Destruction (WMD). Expands the Emergency Medical Service (EMS) provider's training in responding to conventional HAZMAT incidents and focuses on the recognition and management of incidents involving bioterrorism, chemical and nuclear weapons. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 473 Emergency Response to Terrorism

Prepares emergency medical services (EMS) providers to recognize and respond to terrorist incidents. Topics include identification of on-scene indicators of a suspicious incident, recognition of the tactics and objectives of terrorism, and scene/perimeter control issues that are unique to a terrorist incident. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 474 Industrial Hygiene

Introduces basic concepts of industrial hygiene. Presents the methodology and procedures that professionals in the field use to identify, measure, and correct hazards in the work environment. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 476 Hazardous Materials, Emergency Response and Environmental Auditing

Concentrates on the nature of hazardous materials and how they are handled in the workplace. Presents the fundamentals of emergency response planning and how to perform environmental audits. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 477 HAZMAT Training for Emergency Medical Services

Comprehensive overview of the practice and procedures required of Emergency Medical Service (EMS) providers when responding to major HAZMAT incidents. Includes management strategies for Hazards Materials (HAZMAT) disasters. Emphasizes on the coordination of services and resources by national, federal and local agencies. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 478 Independent Study in Environmental Health

Proposals for special projects involving advanced readings, reports and discussions on selected environmental health topics must be submitted. A research paper on the selected topic will be submitted to an assigned faculty sponsor. Restricted to students approved for appropriate senior year track in the Health Science major.
2 credits Tutorial

HAN 480 Introduction to Radiation Therapy and Medical Dosimetry

Provides students with a history and an overview of radiation therapy and medical dosimetry and their role in medicine. Students will be oriented to academic and administrative structure, key departments and personnel. Introduces other health science professions and how they interrelate to the radiation therapy and medical dosimetry professions. The student will be oriented to the hospital organization and radiation oncology services organization. Certification examinations, professional credentialing, accreditation, and professional organizations will be identified and discussed. The clinical education component will be introduced and emphasis placed upon how knowledge, attitudes and skills will be applied within the clinical setting, and what teaching must occur in the clinic. A detailed list and explanation of the clinical duties and responsibilities of radiation therapy and medical dosimetry students will be provided. Career advancement and mobility will be explored. Restricted to students approved for appropriate senior year track in the Health Science program.
1 credit Lecture

HAN 481 Introduction to Anesthesia

Introduces the basics of the anesthesia specialty. Defines the role of the anesthesia specialist as an integral part of the anesthesia patient care team. Through the use of lecture, video, tour and hand-on demonstration, students will gain a working knowledge of how to assist anesthesiologists and anesthetists in the acquisition, preparation and application of equipment and supplies required for the administration of anesthesia. Restricted to students approved for appropriate senior year track in the Health Science major.
2 credits Lecture

HAN 482 Introduction to Pathology

Pathology is the branch of medicine devoted to the study and understanding of disease. This course will introduce the student to the concept of disease. The types of growth, causative factors and biological behavior of neoplastic diseases are discussed. Staging procedures are introduced. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 483 Cardiopulmonary Physiology for ASATT

Familiarizes students with the anatomical structures and physiological mechanisms and functions of the cardiopulmonary system. Reviews mathematical formulas and calculations used in clinical applications of physiologic concepts. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits Lecture

HAN 484 Radiation Therapy Physics

Introduces students interested in a career in radiation therapy to medical physics for radiation oncology. It will provide the basis for further study of the applications of radiation oncology physics to radiation treatment planning and radiation dose-calculations. Restricted to students approved for appropriate senior year track in the Health Science program.
3 credits Lecture

HAN 485 Clinical Monitoring

Provides students with a working knowledge of clinical monitoring devices and their application to clinical settings. Covers duties of anesthesia technologist including the provision of technical support to professional staff in order to facilitate anesthesia departmental function. Develops skills to maintain and organize the anesthesia environment, equipment and supplies. Restricted to students approved for appropriate senior year track in the Health Science major.
1 credit Lecture

HAN 486 Principles and Practice of Radiation Therapy

Introduces student to the practice and technical aspects of radiation therapy. An overview of cancer to include: statistics, epidemiology, etiology, patient education and assessment, and pharmacology and drug administration. Radiation therapy techniques specific to anatomical site will be demonstrated and treatment outcome statistics discussed. Explores treatment options available to cancer patients. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 488 Medical Imaging and Radiographic Anatomy

Presents an overview of a variety of diagnostic imaging modalities and therapeutic applications and procedures provided by modern healthcare facilities. Discusses imaging equipment and procedures, and includes recording images on film media and operation of photochemical processing equipment. Restricted to students approved for appropriate senior year track in the Health Science program.
3 credits Lecture

HAN 489 Pharmacology for ASATT

Presents basic principles of pharmacologic properties and clinical applications. Through the use of lectures and scenarios, provides working knowledge base of drug classifications and their modes of action to produce therapeutic effects on target sites. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits Lecture

HAN 492 Radiation Oncology/Medical Physics II

Provides students interested in a career in medical dosimetry with an introduction to medical physics for radiation oncology. This is the second course in a two-part series that provides the basis for further study of the applications of radiation oncology physics to radiation treatment planning and radiation dose calculations. Covers topics such as radiation dose distribution, patient dose calculations, treatment planning, electron beam therapy, brachytherapy, modern treatment delivery, and radiation protection. Restricted to students approved for appropriate senior year track in the Health Science program.
4 credits Lecture

Department of Health Care Policy and Management

Chair: Alan M. Leiken

Vice Chair: Nanci C. Rice

Professors: Robert O. Hawkins Jr. (emeritus), I. Bernard Hirsch, H. Barry Waldman

Associate Professors: Lisa Benz Scott, Kenneth J. Feldman, Karen Goldsteen, Arnold Jaffe, Theodore A. Jospe, Alan M. Leiken, Nanci C. Rice, Thomas R. Sexton, Fred S. Sganga, Rose A. Walton (emerita)

Assistant Professors: Susan C. Cappello, Josephine Connolly-Schoonen, M. Veronica McKinnon, Karen J. Mendelsohn, Hector Sepulveda, Robert A. Wild

Lecturers: Josef Bohm, Sabra Boughton, Francis X. Burke, Gabriella R. Chiaramonte, Jane E. Franz, Carol A. Gomes, Loretta C. Gvazdinskas, Marilyn L. Haig, Terry Hargadon, Ronald F. LaValle, Robert M. Lipp, Walter L. Markowitz, Dennis L. Proul, Oliver C. Schepers, Sabina Steiner, Richard J. Zaino

Instructor: Lorraine E. Danowski, Reginald E. Matthews Jr.

Program in Health Care Policy and Management Leading to the Master of Science Degree

Program Director: Nanci C. Rice

This program is open to qualified health professionals who wish to pursue careers in health care management, health policy, gerontology, and nutrition within their own professional fields.

Program Requirements

Candidates must complete a minimum of 36 credits and satisfy the specific core, concentration, and practicum requirements described below. Courses are chosen with program advisement and approval.

Core: Candidates must successfully complete courses to demonstrate understanding and competence in the areas of medical care delivery, research methodology, statistics and communication (12 credits).

Concentration: Candidates must select a specialty concentration in health care management, health policy, gerontology, nutrition, or sales and marketing in the clinical environment and complete courses in the chosen area.

Practicum: Candidates must complete a practicum in their specialty concentrations (3-6 credits).

Thesis: A master's thesis is optional (4-6 credits) and is in lieu of the practicum requirement.

The Advanced Certificate Program in Health Care Management

Program Directors: Alan Leiken and Thomas Sexton

Program Requirements

The Advanced Certificate Program in Health Care Management is a professional development program intended for health practitioners who require management training and for managers who require specific management training in the health care field. The program is jointly sponsored by the School of Health Technology and Management and the College of Business.

The curriculum consists of 18 credits. Students are required to complete a minimum of four courses with a health care management focus.

Dietetic Internship Program

Program Director: Josephine Connolly-Schoonen

The Dietetic Internship Program is a 35-week program beginning each September, co-sponsored by the School of Medicine and the School of Health Technology and Management. Applicants are required to have a baccalaureate degree from an accredited college or university, a preferred minimum grade point average of 3.0, and an American Dietetic Association verification statement of completion of a dietetic program. Students may apply to the Master of Science degree program in Health Care Policy and Management with a concentration in nutrition and pursue the graduate degree concurrently. The Internship program participates in the national computer matching process.

Undergraduate Courses

HAS 151 Preparation for Statistics

Arithmetic, algebra, exponents, and graphing needed for elementary statistics. Requires permission of the instructor, whose decision will be based on results of a preliminary diagnostic test.
1 credit Lecture

HAS 190 Introduction to the Health Professions

Presents topics of interest to students considering careers as health professionals. Introduces the student to basic concepts of health, factors influencing health care, health care settings, and selected health professions. May not be taken for credit in addition to LHW 102. Open to west campus students.
1 credit Lecture

HAS 290 Medicine and Society

Examines traditional concerns of the humanities and social sciences as they interface with health care and its delivery. Practicing physicians or other health professionals present clinical cases. Emphasizes confidentiality, experimentation, dying and death, and allocation of scarce resources. Focuses on the social, historical, ethical, and humanistic importance of the cases. Permission of instructor required. Open to west campus students.
3 credits Lecture

HAS 292 Behavioral Intervention for Children with Autism

Provides framework to develop and implement behaviorally based instruction for children with autism spectrum disorders.Presents the variables that control learning in instructional environments. Offers opportunity to develop technical competencies in behavior analytic intervention strategies (defining and measuring behavior, shaping, chaining, and discrete trial instruction) that facilitate acquisition, maintenance and generalization of skills. Involves "hands on" experience for minimum of five hours per week at sites that provide services for children with autism. Corequisite or prerequisite: HAS 192, not to be taken for credit in addition to HAS 502. Transportation to off-campus sites must be provided by the student. Open to west campus students.
4 credits Lecture

HAS 300 Issues in Health Care

Examines major issues influencing health care delivery. Emphasizes analysis of significance of these issues to the health professions. Covers organization of the delivery system, professional roles, quality control, cost controls, health agencies and alternative delivery models, consumer lifestyles, and health statistics. Integrates current trends in managed care, reimbursement, health policy and reform. Discusses infectious disease and nutrition. Allows for discipline-specific program development and implementation through HSC outreach efforts.
2 credits Lecture

HAS 332 Management Concepts for Health Professionals

Identifies coping strategies with bureaucracies as agent, participant, and consumer. Considers the human dimensions of personnel, financial and materials management as related to the service functions of health agencies.
1 credit Lecture

HAS 335 Medical Ethics

Introduces health professional students to basic concepts and challenges in medical ethics. Uses a framework and decision-making process to help students learn how to approach ethical dilemmas. Explores current topics in health care ethics including advance directives, assisted dying, genetics, cloning, transplants, confidentiality, informed consent, and professional conduct.
1 credit Lecture

HAS 350 Introduction to Statistics

Discusses elements of biostatistics, graphs and tables, descriptive statistics, probability, populations of samples, normal distribution, hypothesis testing, and computers.
2 credits Lecture

HAS 351 Research Literacy/Research Design

Prepares students to perform a literature search in their respective disciplines to find scientific and health articles and books in the Health Sciences Center Library. Presents research terminology, methods, and design. Provides basic skills to enhance interpretation, evaluation and analysis of research articles, including the hypothesis, literature review, design, methodology, and data analysis.
1 credit Lecture

HAS 363 Computer Literacy for Health Professionals

Surveys the uses of computers for health practitioners. Offers practical experience in literature database searching and use of applications software.
1 credit Lecture

HAS 391 Readings in Health

Supplementary specialized readings under faculty supervision. Topics determined by mutual agreement between undergraduate student and faculty and must have the approval of the program director in the School of Health Technology and Management prior to registration.
1-3 credits Tutorial

HAS 399 Independent Study in Health

A special project involving advanced readings, reports, discussions, research, or special course work on topics or problems of the student's choosing, with the guidance of an assigned faculty member. Projects must have the approval of the program director in the School of Health Technology and Management prior to registration.
1-6 credits Tutorial

HAS 490 Research Tutorial

An original research project is conducted. Prerequisite: HAS 351
2 credits Tutorial

Graduate Courses

HAS 501 Autism Spectrum Disorders

Provides educators a comprehensive overview of autism and related disorders. Extensive literature review explores manifestations at varied developmental, intellectual levels across the age span. Includes current theories of casualty, Asperger's syndrome and other pervasive developmental disorders. Examines educator's role in therapeutic interventions. NOTE: not to be taken for credit in addition to HAS 192
3 credits Lecture

HAS 502 Behavioral Intervention for Students with Autism

Provides educators with comprehensive framework to develop and implement behaviorally based instruction for children with autism spectrum disorders. Explores variables that control learning in instructional environments. Students will develop expertise in behavior analytic intervention strategies that facilitate acquisition, maintenance and generalization of skills. Involves a minimum of five hours per week of experiential work at sites that provide services for children with autism. NOTE: not to be taken for credit in addition to HAS 292
3 credits Lecture

HAS 503 Issues, Trends and Challenges in Nutrition

Analyzes and integrates current trends and issues in food and nutrition. Evaluates complementary and alternative forms of medical nutrition therapy, functional foods and nutraceuticals. Examines evidence regarding efficacy, safety and cost of new products. Discusses applications in practical professional settings.
3 credits Lecture

HAS 506 Food Nutrition Policies: Cultural, Behavioral, Social Aspects

Introduces health care professionals to existing food and nutrition policies, the types of data that these policies are based on and the process by which they are developed. Offers skills needed to critically analyze the process and resulting policies, and those used in developing new policies and securing funds for such projects.
3 credits Lecture

HAS 507 Fundamentals of Nutrition Policy and Management

This course is designed for nutritionists who want to develop effective management skills in the food service and clinical areas with an emphasis placed on clinical dietetics. Case studies, problem-based learning scenarios, and role-playing scenarios will complement lectures and provide students with an opportunity to problem solve and apply information acquired. Personnel issues, cost containment and management principles pertinent to clinical and food service functions will be discussed and applied to real life situations. Reviews safety and sanitation procedures with practical applications. The survey process and accreditation standards will be covered.
3 credits Lecture

HAS 513 Health Care and Older People

Course is designed to maximize a student's understanding of policy and administrative issues in delivering health care to older people. Highlights examples of policy directions on the national, state and local levels and the practical application of administrative tools in managing health facilities mandated for older people.
3 credits Lecture

HAS 515 Measurement and Evaluation in Health Professions Education

Explores issues of measurement and evaluation in educational institutions. Emphasizes approaches to testing, types of instruments, reliability, validity, and item analysis, and examines methods and approaches to evaluation of research.
3 credits Lecture

HAS 516 Health and the Aging Process

An overview of information and issues pertinent to physical and psychosocial health of aging Americans. Includes demographics, attitudes, physiological and psychological changes, health promotion, disease prevention, health care delivery settings, and ethical and legal issues.
3 credits Lecture

HAS 518 Women and Health Care

This course provides an overview of women as users and providers of health care in the United States. Attention is given to women as active participants in their health care today as compared to historical times when women were encouraged to be passive. Throughout the course, case studies are introduced to demonstrate the contemporary utilization patterns of health care by women, including the use of managed care companies, women's public health agencies and grassroots health organizations. In addition, a number of issues are addressed regarding the role of women in providing health care, specifically from a public health management perspective. The course includes examples and presentations of national and regional women's health concerns, such as breast cancer, reproductive choices, heart disease, tobacco use, menopause-related issues, and domestic violence. Special populations are also discussed as they relate to women and health care, including adolescents, older women, homeless women, working women, caretaking women and middle-class uninsured women. Traditional and alternative health care strategies are offered as acceptable methods for meeting the growing and changing needs of women presently and in the future.
3 credits Lecture

HAS 521 Disability and Health Promotion

Examines the life experiences of people with disabilities from a disability studies perspective. Includes a study of the history, sociology, and psychology of disability, and looks at interactions between people with disabilities and health care providers in terms of miscommunication, prejudice, communication, and health promotion. Explores the larger systems that can help or hinder health promotion including structural barriers of poverty, lack of insurance, inaccessibility of services, architectural barriers and lack of transportation. Addresses particular health care challenges faced by women and ethnic, racial, and sexual minorities who have disabilities.
3 credits Lecture

HAS 523 Occupational Safety and Environmental Health

Designed to provide students with an in-depth understanding of occupational and environmental public health issues including the effects that biological, chemical and physical factors have on the community's health. Specific topics addressed are lead poisoning, chemical toxins, asbestos, OSHA, EPA, child labor, infectious diseases and ergonomics.
3 credits Lecture

HAS 525 Complementary and Alternative Medicine

Examines the theory, philosophy and applications of complementary and alternative medicine within today's health care system. Presents the many alternatives to traditional Western or allopathic medicine, and how these various models, systems and therapies impact on the delivery of health care in the United States. Addresses skills needed to best respond to consumers' requests for information about these approaches. Students will examine the current body of research available on complementary and alternative medicine and be introduced to the vast array of resources available, the type of training involved in license/certification, and how to incorporate these approaches into their clinical practices. This course will combine lecture, readings, speakers, independent research and some expediential, hands-on work.
3 credits Lecture

HAS 526 Community Mental Health Programs

Provides a critical examination of the mental health system as it has evolved in the United States. Focuses on the service delivery system: how it has developed, what it is today and where it is going. Deals with the mental health system as a business: how it operates, how it is funded, who it employs and how it will develop in the new managed care environment.
3 credits Lecture

HAS 527 Principles and Practice of Public and Community Health

Provides an overview of the public health system, the philosophy and purpose of public and community health, the managerial and educational aspects of public health programs, how the public health sector responds to disease prevention, environmental issues, community public health provisions and other core public and community health components. The impact of federal health care reform on the public health delivery system and the economic and fiscal implications of the system on state and local governments will be discussed. Students will analyze the critical elements of a health care system.
3 credits Lecture

HAS 528 Long Island's Community Health

Provides students with an overview of community health concerns of Long Island and information and resources for addressing them. Presents conditions that are associated with special populations such as the Native Americans, baymen, homeless, migrant workers, rural residents, urban residents, and the uninsured middle-income residents. Community health problems with high incidence on Long Island including breast cancer, Lyme disease, AIDS, and tuberculosis will be covered. Reviews Long Island's environmental health problems with special emphasis on those associated with drinking and swimming water, agriculture, pesticides, and transportation. Discusses and presents the community health care delivery system and model programs and resources.
3 credits Lecture

HAS 529 Community Health and Patient Education

Provides information on current trends in patient education program development. Emphasizes techniques used by health professionals in planning, implementing and evaluating patient education programs in hospitals and other health care organizations concerned with the educational component of patient care.
3 credits Lecture

HAS 530 Health Care Operations

Addresses the operations within health care institutions from the macro to the micro levels of management. Analyzes philosophy and significant occurrences affecting health care operations in the past, present, and future. Divisions within health care operations (clinical, support and informational services, nursing, finance, and ambulatory care) will address the following aspects of management: financial forecasting and monitoring, staffing, employee productivity and morale, customer service, cost containment, decision making, total quality management, and managed care. Emphasizes hospital operations, and presents nursing home and community health care center operations.
3 credits Lecture

HAS 533 Communication and Group Dynamics

Assists students in understanding and improving interpersonal communication skills through structured exercises in speaking, writing and interacting. Emphasizes leadership skills in group interactions especially in the health care fields.
3 credits Lecture

HAS 534 Fundamentals of Health Care Management

Provides students with a realistic knowledge of management, not only the theories and techniques, but the ways in which they are worked out in practice. Emphasizes the essentials of management pertinent to practicing managers, e.g., organizational profiles, political and power relationships, planning, organizing, staffing, directing, leading, controlling and evaluating. Looks at essentials as a system interacting with the manager's total environment - economic, technological, social, political and ethical.
3 credits Lecture

HAS 535 Essentials of Health Care Finance

The course is designed to introduce the student to those types of financial decisions that health care executives are most likely to be involved with, and to provide material that will help them understand the conceptual basis and mechanics of financial analysis and decision-making as it pertains to health care.
3 credits Lecture

HAS 536 Health Law

Acquaints students with the general applicability of law to the health field and the health delivery system. Covers specific areas of laws (including statutory law, common law and rules and regulations) applicable to and controlling the operation of hospitals, long-term care facilities, medical practices, health professional practices and other institutions and individuals involved in the delivery of health care. Identifies legal problems affecting the delivery of health care and addresses problems encountered by institutions and individuals.
3 credits Lecture

HAS 537 Resource Management: Planning and Budgeting

Describes the external forces that affect health care agency operation, increasing evolution of laws, agency regulations, and controls that apply to health organizations. Includes elements of planning and budgeting that apply to the internal functioning of health care institutions. Emphasis on development of management ability and departmental relationship to the total agency's activities.
3 credits Lecture

HAS 538 Health Economics and Public Policy

Presents an in-depth analysis of the effects of economic principles on health care and the effect of health policy and economic forces on the health care delivery system. Examines the ways in which these concepts may be used to analyze health policy and improve the delivery of health care services. The effect of changes in market forces, human resources needs, formation of integrated delivery systems, health promotion initiatives and the impact of technology will be studied.
3 credits Lecture

HAS 539 Strategic Planning for Health Programs, Facilities and Networks

Conveys to prospective and current health program managers the fundamentals of strategic thinking and planning and the integration of these processes into executive management functions. Prepares prospective and current managers to fulfill their roles and responsibilities within a dynamic, changing medical marketplace where health care entities are undergoing a major paradigm shift, changing from independent organizations that provide illness-focused episodic care to networks and systems of entities that address the health care needs of populations over entire lifetimes.
3 credits Lecture

HAS 541 Strategic Management in Health Care

Designed for health services organization managers. Provides exposure to varied theories of organization and management to prepare students to predict and explain organizational and managerial actions and responses relative to public policy. Readings focus on four major themes: organization/environment relationships, organization complexity, strategic management, and the significance of economic theory in understanding organization and systems behavior.
3 credits Lecture

HAS 542 The Political Setting of Public Health Policy and Management

Examines the influences and effects of politics on the implementation of health policy at federal, state and local levels of government. Analyzes the roles and consequences of various governmental and social entities involved in policy implementation including structure and process. Reviews outcomes of selected public policies within the legislative or administrative context.
3 credits Lecture

HAS 543 Health Policy

Provides students with an overview of health care policy making principles. Specific policy formats will be analyzed using examples of local and national policies. Students will learn to develop selective health policies using case studies.
3 credits Lecture

HAS 544 Principles of Managed Care

Provides an in-depth understanding of the meaning of managed care in the context of the United States health care system. Reviews the history, components and various organizational forms of managed care systems. Potential benefits, inherent limitations, and the legal, social and ethical implications of managed care as a health care delivery system will be discussed.
3 credits Lecture

HAS 545 Ethics and Health Care

Provides an overview of ethics in health care in a rapidly changing society. Teaches students to approach ethical dilemmas using theoretical frameworks and decision making processes. Explores ethical issues surrounding health care reform and public health policy and includes distribution of resources and rationing of services. Introduces students to the ethical perspectives of euthanasia, reproduction, transplants, and HIV/AIDS through case studies. Reviews classic cases in health care ethics and their shaping of health policy. Discusses patient education and professional codes of ethics and standards.
3 credits Lecture

HAS 547 Grantsmanship in the Health Professions

Introduces the grantsmanship process, in both federal and private domains. Focuses on research, design, preparation, and submission of grant applications.
3 credits Lecture

HAS 550 Statistics and Data Analysis

Teaches the use of descriptive statistics such as means, medians, standard deviations and histograms to report results of experiments. Illustrates how inferences can be made from hypothesis testing and regression analysis. Includes analysis of the validity and appropriateness of statistical techniques employed by researchers in the health field.
3 credits Lecture

HAS 551 Research Design and Proposal Writing

This course is designed to help students learn the skills to write an independent research or practicum proposal that demonstrates an understanding of how to plan, design, implement, analyze, and interpret a study to address a problem in health care management, policy and/or practice. Students will learn and apply the tools and skills needed to develop and implement a research study or practicum project in the future: formulate a research question or hypothesis, conduct literature searches, use library resources, critically appraise scientific literature, select an appropriate research design ad methods for data collection, consider the protection of human subjects and health information and determine whether or not application to the Committee on Research Involving Human Subjects is appropriate; apply descriptive and inferential techniques, and write/orally present proposal papers.
3 credits Lecture

HAS 554 Marketing in Health Services

Provides an introductory explanation of marketing as a requisite component of modern business. While presenting the basic principles and general philosophies of marketing, the course concentrates on the importance of marketing in health care service delivery in a managed care environment.
3 credits Lecture

HAS 555 Essentials of Health Care Sales and Marketing

Introduces strategic selling methodology and looks at the health care buying decision. Focuses on the health care customer's needs, both organizational and personal. The resultant analysis will allow the student to better determine how to add value to the health care customer's organization and create a long-term business relationship that benefits all parties. Focuses on the key principles, methodologies and strategies of marketing, and expands these basic concepts to include an analysis of the health care value chain: trading relationships between the producers (manufacturers) of the health care products, purchasers of those products (groups purchasing organizations, wholesalers/distributors), and health care providers (hospital customers) that are end users of these products.
3 credits Lecture

HAS 556 Outcome Measures and Continuous Quality Improvement (CQI) in Health Care

Reviews the conceptual and statistical development of outcome measures in a variety of health care settings including health care delivery situations and health policy considerations. CQI principles will be developed, and outcome measures will be illustrated. Appropriate statistical methods will be introduced. Prerequisite: HAS 550 or MGT 515
3 credits Lecture

HAS 557 Planning and Evaluating Health Programs

Prepares students to conduct needs assessments of various diverse populations and to plan, implement and evaluate programs to meet the needs. Plans include detailed goals, behavioral objectives, methods, resource and budget allocation, including grant and contract considerations.
3 credits Lecture

HAS 558 Epidemiology and Health Policy

Presents the concepts, principles and applications of epidemiology through the use of public health case studies. Examines the distributions and determinants of disease, human morbidity and mortality, the characteristics of populations and the biological bases of health and disease. Prerequisite: HAS 550
3 credits Lecture

HAS 559 Health Behavior and Risk Reduction

Discusses the impact of behavior on the health and well-being of the public. Addresses the leading causes of death and disability that are largely attributable to behaviors that can be modified or prevented through changes in individual, community, and institutional or organizational behavior. The course Is designed to help students acquire knowledge of theories and concepts to describe, explain, and predict health-related behaviors as well as behavioral responses to risk communica-

tion; and learn the skills to apply this knowledge to evaluate the effectiveness of behavioral responses to risk communication; and develop a health-related behavioral intervention project proposal that includes a plan to evaluate behavior change outcomes.
3 credits Lecture

HAS 560 Evaluation of Community Health Programs

Addresses basic principles and practices of program evaluation including identifying the goals of a community health program; designing an evaluation plan that can determine if program goals are achieved; implementing an evaluation plan; interacting with stakeholders, and using the results of the program evaluation to improve performance. Students are required to design an evaluation component for the community health program they developed in HAS 557.
Prerequisite: HAS 557
3 credits Lecture

HAS 562 Teaching Strategies for Health Professionals

Examines selection and use of teaching strategies including group discussions, lectures, workshops/demonstrations, simulations, workbooks, self-instructional materials, and audiovisual resources. Includes problem-solving and classroom practice. Requires selection and development of an individual teaching problem or project for presentation, discussion, and evaluation.
3 credits Lecture

HAS 563 Computer Case Studies in Health Care Management

Examines problem solving in health care management through the application of personal computers and case studies. Prerequisite: Knowledge of spreadsheets
3 credits Lecture

HAS 564 Health Information and Communication Systems

Course acquaints students with the types of information systems available in health care and their applications to health care delivery. Includes an overview of various health care networks, patient centered information systems, and imaging systems. Reviews system platforms, electronic medical records and computer assisted instruction. Students discuss the integration of health information systems with communication systems such as E-mail, fax, pagers and wireless telephones. Through the use of classroom demonstrations and site visits, students gain hands-on experience with several health related information and communication systems.
3 credits Lecture

HAS 568 HIV/AIDS: A Continuing Societal and Medical Challenge

Examines the social, psychological and medical issues of the HIV/AIDS epidemic in relation to the concerns of health care professionals and educators. Explores and assesses how personal values and attitudes impact on the delivery of health care and/or educational programs. This is offered as both CEM 568 and HAS 568.
3 credits Lecture

HAS 570 Business Aspects of Managed Care

Introduces the students to and expands on their knowledge base of the business and financial aspects of the managed care delivery system. Trends in the financing of health care will be explored, as well as the practical application of developing and writing a formal business plan.
3 credits Lecture

HAS 571 Issues in Health Care Management

The course is designed to introduce the student to current trends in the United States health care system, including trends in medical-legal issues, labor relations, cost accounting and managed care. Models of progressive programs and health care delivery systems will be reviewed and discussed.
3 credits Lecture

HAS 572 Ambulatory Care Management

Familiarizes the student with areas of ambulatory care management. Identifies national and local trends and practical applications needed to administer outpatient care programs and facilities.
3 credits Lecture

HAS 574 Group Practice Management

Introduces the student to the practices and theories of Group/Physician Practice Management. Provides fundamental understanding of the financial and regulatory issues that influence todays medical practice. Presents issues such as leadership, operations, compensation, and clinical productivity for review.
3 credits Lecture

HAS 575 Long Term Care

Enhances the student's understanding of health care options for the elderly, the existing system of long term care delivery and particularly, the administrative aspects of operating a nursing home. The course will include actual exposure to clinical and operational departments in a nursing home and their roles in the interdisciplinary process. It will also include a review of the rules and regulations governing nursing homes in New York State and the financial implications and reimbursement methodologies that impact upon them.
3 credits Lecture

HAS 576 Workplace 2010

Provides an overview of issues affecting the American workplace in the future through the year 2010. Expected working conditions, human resources, schedules and technology are explored as students learn how to plan for advances and changes in the health system. Through the use of case studies, introduces students to early experiments in organizational evolution and resulting applications to the health care environment. Discusses issues related to diversity, team building and employee education.
3 credits Lecture

HAS 577 e-Healthcare: e-Commerce and e-Care

Introduces students to e-trends and their impact on healthcare. Revisits the traditional models of healthcare delivery and disease management. Introduces students to the evolution of e-care models. Addresses the use of the Web in healthcare organizations, hospitals, medical offices and pharmaceutical companies. Includes e-business strategies, planning and development, e-health and law concepts related to e-services in healthcare.
3 credits Lecture

HAS 578 Leadership in Health Care

Focuses on the future role of the leader in the emerging society of organizations. Draws on lessons learned from the past, in both theory and practice. Examines the impact of leadership on the future quality of life, business, learning institutions and society. Defines difference between management and leadership skills and strategies for balancing and developing each skill set.
3 credits Lecture

HAS 579 Advanced Seminar in Health Policy

Analyzes the principle of health policy-making. The goal of the session is a complete health policy statement/paper deliverable to the appropriate policy-maker/legislator. Students will have round table discussions about general public health topics and develop their own health policy project.
3 credits Lecture

HAS 580 International Seminar

Compares United States health care systems with those of another country. Includes visits to health facilities, educational institutions, and agencies. Focuses on health promotion and disease prevention in that country as compared to United States programs. Lectures and seminars by SHTM faculty and faculty of participating foreign universities.
1-4 credits Lecture

HAS 582 Seminar in Curriculum Design

Discusses problems and processes of curriculum design in the health fields. Includes developing a rationale for curriculum design, components and levels of educational design, implementation problems, and evaluation for curriculum improvement.
3 credits Lecture

HAS 583 Scientific Writing for Thesis and Publication

Provides basic skills and information to plan, research and execute the writing of a scientific abstract, thesis outline, research proposal and develop current literature and raw data into a form for written presentation to support or refute a hypothesis. Focuses on scholarly writing and deductive logic, through the use of scientific data (whether from the literature or the research data book) to support an argument. Permission of instructor required.
3 credits Lecture

HAS 584 Practicum: Community Health Education

Open only to degree candidates in the community health planning and education track. Allows student to test, under supervised circumstances, his or her ability to apply knowledge learned in courses to the health care field.
1-6 credits Tutorial

HAS 586 Practicum: Health Professions Management

Open only to degree candidates in the management track. Allows student to apply theory learned while functioning as a manager in health practice.
1-6 credits Tutorial

HAS 588 Practicum: Health Policy

Open only to degree candidates in the research track. Allows student to apply and demonstrate knowledge of research methodology by either conducting or participating in a major research effort under the supervision of an experienced researcher.
1-6 credits Tutorial

HAS 590 Independent Study

Independent study proposals in health sciences. Must have the approval of the Research and Directed Study Committee of the School of Health Technology and Management prior to registration.
1-6 credits Tutorial

HAS 591 Independent Readings

Supplementary specialized readings for graduate students under faculty supervision. Topics include but are not limited to: community and public health, mental health, health policy, health care management, health care ethics, gerontology, patient education and health economics and policy. Approval must be obtained from the Research and Directed Study Committee of the School of Health Technology and Management prior to registration.
1-3 credits Tutorial

HAS 598 Thesis Seminar

Complements thesis research. Includes presentation by degree candidate of research purpose, methodology and findings and culminates in presentation and discussion of final results.
Corequisite: HAS 599
1 credit Tutorial

HAS 599 Thesis Supervision

Topic, statement of intent, and thesis committee membership must be approved prior to registration.
Corequisite: HAS 598
4-6 credits Tutorial

Division of Diagnostic and Therapeutic Sciences

Chair: James A. Ganetis

Department of Clinical Laboratory Sciences

Chair: Kathleen Finnegan
Professors: Craig A. Lehmann, Martin H. Rosenfeld (emeritus), George T. Tortora

Associate Professors: Edward J. Briglia, Ronald Malowitz, Maria Reitano, Sylvia G. Spitzer

Assistant Professors: Donna D. Castellone, Kathleen Finnegan, Deborah T. Firestone, Candace J. Golightly, Jeannie M. Guglielmo, Mary Hotaling, Joseph Moreschi, Christine Pitocco, Vivien A. Soo, Marie I. Tsivitis

Instructors: Robert J. Borley, Christine A. Munz, Alfred Palma, Todd P. Rueb

Program in Clinical Laboratory Sciences Leading to the Bachelor of Science Degree

Program Director: Kathleen Finnegan

Medical Advisor: Jay Bock

The Department of Clinical Laboratory Sciences offers an upper-division program leading to the Bachelor of Science degree. Stony Brook freshmen are given the option to declare clinical laboratory sciences as a lower-division major. A double major in clinical laboratory sciences and biology is available. Clinical laboratory scientists utilize a wide variety of sophisticated equipment and skills to perform tests that analyze specimens to produce data for the diagnosis, prevention and treatment of disease. Many of the same tests are used for organ transplants, therapeutic drug monitoring, crime investigation, genetic studies and research. The program now offers three expansion tracks (Forensic Medical Diagnostics, Laboratory Information Systems and Diagnostic Instrumentation) within its traditional clinical laboratory curriculum.

The majority of clinical laboratory scientists work in hospital laboratories; however, many job opportunities exist in other areas such as research and development, industry, sales and technical services, health departments, and computer firms. Competitive salaries, career advancement, and a versatile background make the clinical laboratory professional well-equipped to enter a variety of scientific fields. The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), located at 8410 West Bryn Mawr Avenue, Suite 670, Chicago, IL 60631-3415. NAACLS's phone number is 773-714-8880. In addition to the baccalaureate degree, the school's Certificate of Professional Achievement in Clinical Laboratory Sciences is awarded upon satisfactory completion of all required course work.

Admission Requirements

Candidates for the clinical laboratory sciences program must meet the upper-division admission requirements of the School of Health Technology and Management. The requirements may be fulfilled through previously completed college studies.

In addition to the general academic requirements for junior status in the School of Health Technology and Management, the Department of Clinical Laboratory Sciences requires candidates to meet the department's natural science requirement by successfully completing 8 credits of biology with laboratories, 12 credits of chemistry with laboratories (including one course in organic chemistry or biochemistry), and 3 credits of college level mathematics.*

In order to be eligible for admission to the expansion tracks, students must complete all the requirements for the Clinical Laboratory Sciences degree and the applicable requirements associated with the individual tracks. A genetics course, as well as an extra credit in chemistry (for a total of 13 credits), is recommended for the Forensic Medical Diagnostics tract. An Introduction to Computer Science course (CSE 110 or equivalent) is required as an additional prerequisite for the Laboratory Information Systems track. A basic electronics course is highly recommended as an additional prerequisite for the Diagnostic Instrumentation tract.

The department strongly recommends courses in anatomy, computer literacy, general microbiology, genetics, molecular biology, and physiology. All prerequisite and recommended science courses must be designated for science majors.

Stony Brook freshmen are able to declare a lower-division clinical laboratory sciences major. To advance to junior status, they must meet the requirements described above, and successfully complete HAD 210 with a grade of B+ or higher.

Program Requirements

All clinical laboratory sciences students must complete the core course requirements of the School of Health Technology and Management. In addition, the following courses are required for successful completion of the upper-division program leading to the baccalaureate degree.

Basic Science Courses/Other Health Technology and Management Courses (Junior and Senior Year)

Course#	Title	Credits
HAS 300	Issues In Health Care	2
HAS 332	Management Concepts for Health Professionals	1
HAS 335	Medical Ethics	1
HAS 350	Introduction to Statistics	2
HAS 351	Research Literacy/Research Design	1
HAS 490	Research Tutorial**	2
HBC 331	Introductory Biochemistry	3
HBP 310	Pathology	3
HBP 401	Immunology	3
HBY 350	Physiology	4

Professional Courses (Junior Year)

Course#	Title	Credits
HAD 313	Clinical Biochemistry I	3.5
HAD 315	Hematology I	4
HAD 316	General Microbiology	2
HAD 317	Medical Microbiology	2
HAD 330	Foundations in Phlebotomy	1.5
HAD 340	Foundations in Clinical Laboratory Sciences	1.5
HAD 363	Computer Applications in Clinical Laboratory Sciences	2
HAD 380	Clinical Microbiology I	2.5
HAD 381	Clinical Microbiology II	2.5
HAD 397	Clinical Microbiology Practicum*	6
HAD 398	Clinical Hematology Practicum I*	3

Professional Courses (Senior Year)

Course#	Title	Credits
HAD 403	Medical Molecular Biology	3
HAD 411	Clinical Biochemistry II	2.5
HAD 412	Clinical Biochemistry III	2
HAD 414	Coagulation, Urinalysis and Body Fluids	4
HAD 416	Immunohematology	3.5
HAD 425	Parasitology/Mycology	3.5
HAD 432	Pharmacology	1.5
HAD 460	Clinical Laboratory Quality Management	1
HAD 493	Advanced Seminar in Clinical Laboratory Sciences	2
HAD 494	Clinical Chemistry Practicum*	4
HAD 496	Histocompatibility Practicum (elective)*	1
HAD 497	Immunohematology Practicum*	3
HAD 498	Clinical Coagulation/Urinalysis/ Body Fluids Practicum*	1

*A conditional acceptance may be granted if, upon the judgment of department faculty, there are exceptional circumstances concerning department prerequisites.
**Students may be exempt from HAS 490 after successful completion of elective tracks in either Diagnostic Instrumentation or Laboratory Information Systems.

Special Academic Requirements

In addition to the academic policies of the school, specific academic policies of the program specify that all SHTM and required professional (HAD) courses must be successfully passed in order to remain matriculated in the program. In addition, all professional (HAD) courses with a laboratory component must be passed with a grade of C- or better to remain matriculated in the program. Failure to pass all SHTM and required professional (HAD) courses, or failure to achieve a minimum grade of C- in all professional (HAD) courses with a laboratory component, will require a student to repeat the course.

Elective Track Courses

Forensic Medical Diagnostics

Course#	Title	Credits
HAD 304	Introduction to Criminalistics	1
HAD 435	Seminar in Forensic Biology	1
HAD 438	Forensic Biology Clinical*	1-5
HAD 439	Forensic Toxicology Clinical*	3
HAD 440	Forensic Science Practicum*	3-5
HAD 445	Topics in Toxicology	1.5

Diagnostic Instrumentation

Course#	Title	Credits
HAD 352	Introductory Electronics and Test Equipment	2
HAD 453	Electronic Troubleshooting	2
HAD 458	Diagnostic Instrumentation Internship	2

Laboratory Information Systems

Contact the Clinical Laboratory Sciences Department for specific course list, which includes a Laboratory Information Systems Internship (HAD 468).

Courses

All basic science, professional and other required courses must be passed in order to graduate.

HAD 210 Introduction to Clinical Laboratory Sciences

Defines basic clinical laboratory sciences terminology and application. Introduces the specialties within the clinical laboratory sciences profession including microbiology, hematology, chemistry, immunohematology, and immunology and their roles in patient care. Reviews professional organizations and licensures. Examines employment opportunities. Visitation of clinical laboratories included.
Open to west campus students.
1 credit Lecture

HAD 304 Introduction to Criminalistics

Introduces the student to forensic science. Describes the interesting and diverse disciplines that comprise the field of investigation for evidence in criminal and civil investigations. Open to west campus students.
1 credit Lecture

HAD 310 Clinical Lab Practice

Lecture and laboratory exercises in general clinical laboratory practice. Topics include general hematology,coagulation, urinalysis, blood banking, and clinical chemistry. For health professions students not enrolled in the clinical laboratory sciences program.
2 credits Lecture, Laboratory

HAD 313 Clinical Biochemistry I

Examines the physiological, biochemical and mathematical relationships involved in the establishment and utilization of laboratory procedures in the clinical chemistry laboratory. Includes, principles of routine clinical chemistry analytical methods of analysis and the clinical significance of routine clinical chemistry analytes.
3.5 credits Lecture

* Clinical practice consists of full-time clinical instruction and practice at the clinical affiliates and other affiliated patient-care facilities.

HAD 315 Hematology I

A comprehensive study of the human hematopoietic system and its relationship to other organ systems. Includes morphological identification and biochemical relationships of erythropoiesis and leukopoiesis in healthy vs. disease states. Includes principles and applications of current methods in hematologic analysis, techniques and technology.
4 credits Lecture, Laboratory

HAD 316 General Microbiology

Presents the biology of eucaryotic and procaryotic microorganisms as well as consideration of microbial form, structure, function, physiology, metabolism, growth and genetics. Some applications of microbiology considered, including dairy, food and water bacteriology.
2 credits Lecture

HAD 317 Medical Microbiology

Studies the nature and epidemiology of infectious disease and the role of microorganisms in health and disease. Includes the clinical effects of microbial infection on the human host.
Prerequisite: HAD 316
2 credits Lecture

HAD 319 Medical Microbiology for Physician Assistants

Studies microorganisms involved in health and disease and their relation to the host. Emphasizes microorganisms commonly encountered by physician assistants in clinical practice.
1 credit Lecture

HAD 330 Foundations in Phlebotomy

Introduces the student to the theory, principles and procedures of blood collection. Course is divided into a didactic portion for theory and principles of blood collection and a laboratory portion for blood collection procedures and techniques.
1.5 credits Lecture, Laboratory

HAD 340 Foundations in Clinical Laboratory Sciences

Introduces the student to important issues in clinical laboratory sciences. Addresses personal and professional developments facing the clinical laboratory scientist. Includes the performance of basic laboratory techniques.
1.5 credits Lecture

HAD 352 Introductory Electronics and Test Equipment

Introduces students to introductory electronics and electronic test equipment. Includes basic current and voltage theory; electronic components (i.e., resistors, capacitors); parallel and serial network transistor theory; operational amplifiers; digital components; basic microprocessors; digital computers and electronic test equipment.
2 credits Lecture

HAD 363 Computer Applications in Clinical Laboratory Sciences

Acquaints the student with the use and application of basic computers and laboratory information systems in the clinical laboratory. Includes utilization and multiple functions of the computer in the medical laboratory. The laboratory component of the course provides practice with various software applications utilized in the clinical laboratory.
2 credits Lecture, Laboratory

HAD 380 Clinical Microbiology I

Lectures on the morphologic and biochemical differentiation of commonly isolated microorganisms in the clinical laboratory as well as the biochemical basis of all media, reagents, tests and antimicrobials used in clinical microbiology. Simulated clinical laboratory includes practical experience in the isolation, identification and antimicrobial susceptibility testing of microorganisms commonly encountered. Includes morphologic, biochemical and serologic clinical laboratory techniques using microorganisms involved in human disease.
2.5 credits Lecture, Laboratory

HAD 381 Clinical Microbiology II

A continuation of HAD 380.
Prerequisite: HAD 380
2.5 credits Lecture, Laboratory

HAD 390 Independent Study in Diagnostic Technologies

Proposals for special projects involving advanced readings, reports and discussions, or research on selected topics must be submitted to the program director for approval prior to registration for this course.
1-6 credits Tutorial

HAD 397 Clinical Microbiology Practicum

Full-time instruction and practice of laboratory procedures in clinical microbiology in an approved hospital laboratory for a six-week period. Practice in the proper techniques for processing specimens for the isolation and identification of bacterial, fungal, and parasitic organisms commonly encountered in infectious processes. Instruction and practice in appropriate techniques for antimicrobial susceptibility testing are included.
Prerequisites: HAD 317, HAD 380, HAD 381
6 credits Clinical

HAD 398 Clinical Hematology I Practicum

Full-time instruction and practice of laboratory procedures in hematology and special hematology in an approved hospital laboratory for a three-week period. Prerequisite: HAD 315
3 credits Clinical

HAD 403 Medical Molecular Biology

Provides an overview of the structure and function of genes. Includes theory and laboratory practice of diagnostic molecular biology techniques utilized in the clinical laboratory to analyze DNA.
3 credits Lecture, Laboratory

HAD 411 Clinical Biochemistry II

A continuation of HAD 313.
Prerequisite: HAD 313
2.5 credits Lecture

HAD 412 Clinical Biochemistry III

Covers the clinical significance and analytical methods for special biochemistry analytes including hormones and metabolites, amino acids, trace elements and vitamins, porphyrins, etc.
Prerequisites: HAD 313, HAD 411
2 credits Lecture

HAD 414 Coagulation, Urinalysis and Body Fluids

A comprehensive study of the function and disorders of hemostatis and thrombosis and anticoagulant therapy. Laboratory diagnosis and laboratory applications are presented. Includes the fundamental principals of urine and body fluid analysis with correlation of laboratory methods and practice.
Prerequisites: HAD 398 and HAD 315
4 credits Lecture, Laboratory

HAD 416 Immunohematology

Examines basic immunology, the human blood groups and blood group genetics, hemolytic disease of the newborn, transfusion therapy and current blood bank practice. Includes the performance of clinical laboratory techniques that are routinely performed in an immunohematology laboratory and the interpretation of results.
Prerequisite: HAD 315
3.5 credits Lecture, Laboratory

HAD 425 Parasitology/Mycology

Encompasses two specialty areas in clinical microbiology, parasitology and mycology. The first part of the course consists of a comprehensive study of parasites of human and related hosts with a special emphasis on those of medical importance. Host parasite relationships and the role of the parasite in pathogenesis are addressed in lecture. Laboratory exercises demonstrate current methods for identification of parasites of medical importance using prepared slides. The second part of the course consists of lecture and laboratory studies of fungi of medical importance. Prerequisite: HAD 381
3.5 credits Lecture, Laboratory

HAD 432 Pharmacology

Describes the basic concepts in pharmacology as they relate to the clinical toxicology laboratory. Presents principles and applications of therapeutics in clinical pharmacology.
1.5 credits Lecture

HAD 435 Seminar in Forensic Biology

Introduces general concepts of forensic science. Presents the recovery, examination and types of body fluids recovered as evidence in criminal cases. Describes methods to determine the source of questioned physiological material by identification of its biological nature. Introduces state of the art molecular biological methods (DNA testing) utilized to individualize the physiological material deposited at a crime scene. Examines correlations of methodology and theory between forensic science and clinical laboratory sciences. Prerequisite: HAD 304
1 credit Lecture

HAD 438 Forensic Biology Clinical

Provides basic working knowledge of forensic biological testing currently practiced in the criminalistics laboratory. Offers hands-on experience with molecular methods used to individualize body fluids deposited at a crime scene. Prerequisites: HAD 304, HAD 435, HAD 445 and permission of CLS faculty
1-5 credits Clinical

HAD 439 Forensic Toxicology Clinical

Familiarizes students with instrumental methods of analysis and interpretation of data in a clinical toxicology laboratory. Prerequisites: HAD 304, HAD 435, HAD 445 and permission of CLS faculty
1-5 credits Clinical

HAD 440 Forensic Sciences Practicum

Full time instruction and practice in a section of the medical examiner's office (e.g., forensic biology, forensic toxicology) to acquire hands-on experience with techniques utilized in the investigation of criminal activities. Prerequisites: HAD 304, HAD 435, HAD 445 and permisson of CLS faculty
3-5 credits Clinical

HAD 445 Selected Topics in Toxicology

Familiarizes students with basic concepts of pharmacology and toxicology. Covers methods of analysis and interpretation of laboratory data.
Prerequisites: HBC 331 and HAD 432
1.5 credits Lecture

HAD 453 Electronic Troubleshooting

Introduces students to methods of troubleshooting electronic devices. Topics include essential principles and methods of electronic troubleshooting, test equipment, digital circuitry, aw well as sequential digital circuitry and principles, applications and procedures for repair of medical and therapeutic devices. Prerequisite: HAD 352
2 credits Lecture

HAD 458 Diagnostic Instrumentation Internship

Full-time instruction and practice with electronic equipment and medical electronic devices, service repair and electronic troubleshooting.
Prerequisites: HAD 352, HAD 453 and permission of CLS faculty
2 credits Clinical

HAD 460 Clinical Laboratory Quality Management

Introduces students to total quality managed environments and provides tools to affect quality management programs as their careers progress into leadership roles.
1 credit Lecture

HAD 468 Laboratory Information Systems Internship

Familiarizes students with responsibilities of a laboratory information systems (LIS) manager. Provides exposure to various operations involved with developing, maintaining and troubleshooting an LIS in the laboratory and medical infor-

matics setting. Prerequisites: HAD 363; additional prerequisite track coursework, permission of CLS instructor
1 credit Clinical

HAD 490 Independent Study/ Clinical Laboratory Sciences

Proposals for special projects in clinical laboratory sciences involving readings, research, and laboratory problems must be submitted to the program director for approval prior to registration for this course.
1-6 credits Tutorial

HAD 493 Advanced Seminar in Clinical Laboratory Sciences

Guided discussions about laboratory problems and case studies. Integrates all areas of clinical laboratory sciences for a comprehensive coverage of laboratory medicine.
2 credits Lecture

HAD 494 Clinical Chemistry Practicum

Full-time instruction and practice of laboratory procedures in clinical chemistry and automation in an approved hospital laboratory. Prerequisites: HAD 313 and HAD 411
4 credits Clinical

HAD 496 Histocompatibility Practicum

Full-time instruction and practice to introduce and expose the student to various methodologies and instrumental techniques used in a histocompatibility laboratory.
Prerequisites: HBP 401, permission of instructor
1 credit Clinical

HAD 497 Immunohematology Practicum

Full-time instruction and practice of laboratory procedures in immunohematology (blood banking) in an approved laboratory. Emphasizes laboratory techniques used in the identification and resolution of problems encountered in current blood bank practice.
Prerequisites: HAD 416
3 credits Clinical

HAD 498 Coagulation and Urinalysis Practicum

Full-time instruction and practice of laboratory procedures in coagulation and urinalysis in an approved hospital laboratory.
Prerequisite: HAD 414
1 credit Clinical

HAD 499 Clinical Toxicology Practicum

Familiarizes students with instrumental methods of analysis in a clinical toxicology laboratory and the interpretation of laboratory data.
Prerequisites: HAD 445, permission of instructor
1 credit Clinical

HAD 590 Independent Study/ Clinical Laboratory Sciences

Proposals for special projects in clinical laboratory sciences must be submitted to the program director for approval prior to registration.
1-6 credits Tutorial

HAD 596 Seminar in Immunohematology

For graduate clinical laboratory scientists involved with decision making in immunohematology. Includes the immune process, immunogenetics, perinatal immunohematology problems, unfavorable effects associated with transfusion, component therapy, and the administrative policy and practices of blood banking.
3 credits Lecture

Patient Services Training (Phlebotomy/EKG) Program Leading to a Certificate

Program Director: Kathleen Finnegan

The patient services training program is a non-degree, noncredit ASPT (American Society of Phlebotomy Technicians) accredited program designed to train students in effective phlebotomy and cardiographic techniques and EKG interpretations. Graduates can be employed in a variety of settings including hospitals, private laboratories and physician's offices. The phlebotomy portion of the program consists of 60 hours of lecture and 30 hours of professional laboratory practice followed by 100 hours of clinical training at a local hospital. The EKG portion of the program consists of 15 hours of lecture and 15 hours of professional laboratory practice.

Admission Requirements

Applicants must be 18 years of age or older, have a high school diploma (or an equivalent), and a minimum grade point average of 80 (on a scale of 100) or 2.5 (on a scale of 4.0). Upon successful completion of the program, students receive a certificate of achievement and are eligible to take a national certifying examination in phlebotomy.

Program in Cytotechnology Leading to the Bachelor of Science Degree

Program Director: Catherine M. Vetter

Medical Director: Alan Heimann

Associate Professors: Era Khurana, Jelveh Ziba

Assistant Professors: David H. W. Bell II, Kathleen A.M. DaSilva, Catherine M. Vetter

Instructors: Ina Chan, Emily H.G. Gu, Gary Maini

The Program in Cytotechnology offers an upper-division program leading to the Bachelor of Science degree. Cytotechnologists are skilled laboratory scientists who employ microscopic and other analytic methods to evaluate clinical biological cellular specimens for the presence of disease. Detecting changes in cells that may lead to early, life-saving treatment, cytotechnologists are employed as practitioners in hospital and private laboratories, and as researchers, managers and educators.

The School's Certificate of Professional Achievement and the university's baccalaureate degree are awarded upon satisfactory completion of all coursework. This program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), in conjunction with the Cytotechnology Programs Review Committee (CPRC) of the American Society of Cytopathology (ASC).

Admission Requirements

Candidates for the Cytotechnology Program must meet the upper-division admission requirements of the School of Health Technology and Management. The requirements may be fulfilled through previously completed college studies. In addition to the general academic requirements for junior status in the School of Health Technology and Management, the program requires candidates to meet the school's natural science requirement by successfully completing 12 credits of biology with laboratories, 8 credits of chemistry with laboratories and 3 credits of college level mathematics. All science courses must be designated for science majors.

The program strongly recommends courses in genetics, cell biology, anatomy, general microbiology, organic chemistry, computer literacy, sociology and human sexuality.

Program Requirements

All cytotechnology students must complete the core course requirements of the School of Health Technology and Management. In addition, the following courses are required for successful completion of the upper division program leading to the baccalaureate degree.

Basic Science Courses/Other Health Technology and Management Courses (Junior and Senior Year)

Course#	Title	Credits
HAS 300	Issues In Health Care	2
HAS 332	Management Concepts for Health Professionals	1
HAS 335	Medical Ethics	1
HAS 350	Introduction to Statistics	2
HAS 351	Research Literacy/Research Design	1
HAS 490	Research Tutorial	2
HBA 460	Regional Human Anatomy	3
HBC 331	Introduction to Biochemistry	3
HBP 310	Pathology	3
HBY 350	Physiology	4

Professional Courses (Junior Year)

Course#	Title	Credits
BIO 310	Cell Biology*	3
BIO 311	Techniques in Molecular Cell Biology*	3
HAD 315	Hematology I	4
HAD 316	General Microbiology	2
HAD 317	Medical Microbiology	2
HAD 340	Foundations in Laboratory Sciences	1.5
HAD 380	Clinical Microbiology I	2.5
HTO 360	Current Trends in Cancer Management	2

Professional Courses (Senior Year)

Course#	Title	Credits
HTO 410	Microscopic Techniques	1.5
HTO 415	Basic Cytologic Diagnosis	3
HTO 416	Advanced Laboratory Diagnosis	3.5
HTO 425	Gynecologic Cytology	6
HTO 427	Non-Gynecologic Cytology	4
HTO 428	Fine Needle Aspiration Cytology	4
HTO 431	Specimen Preparation Techniques	2
HTO 432	Applied Cytology Techniques	1
HTO 480	Cytopathology Case Studies	3
HTO 482	Cytology Practicum**	4
HTO 484	Advanced Cytology Practicum I **	5
HTO 486	Advanced Cytology Practicum II**	5
HTO 488	Quality Review	1
HTO 490	Cytology Research	1
HTO 493	Issues in Cytopathology I	2
HTO 494	Issues in Cytopathology II	2.5

Courses

HTO 360 Current Trends in Cancer Management

Introduces current trends in cancer treatment and management. Examines the social implications of cancer treatment, such as insurance coverage, work capability and quality of life.
2 credits Lecture

HTO 410 Microscopic Techniques

Familiarizes students with various types of microscopes used to analyze biological materials with emphasis on the light microscope. Presents appropriate uses and basic concepts of the scanning electron and transmission microscopes.
1.5 credits Lecture

HTO 415 Basic Cytologic Diagnosis

Presents a systematic approach to the analysis of cytologic specimens. Involves case material of a routine and unusual nature. Students learn techniques of daily specimen slide screening. Requires students to prepare and deliver specimen case presentations based on cytodiagnostic criteria.
3 credits Lecture

HTO 416 Advanced Laboratory Diagnosis

A continuation of HTO 415, the course presents more complex material for cytologic diagnosis. Students develop advanced evaluator skills, specifically for non-gynecologic and fine needle aspiration specimens. Prerequisite: HTO 415
3.5 credits Lecture

HTO 425 Gynecologic Cytology

Presents histology, endocrinology, normal cytology, abnormal cytology, and disease processes of the female genital tract.

*See University Undergraduate Bulletin
**Clinical practice consists of full-time clinical instruction and practice at the clinical affiliates and other affiliated patient-care facilities.

Includes a review of female genital tract anatomy. Examines the biological processes seen under the microscope.
6 credits Lecture

HTO 427 Non-Gynecologic Cytology

Explores the anatomy, histology, normal cytology, abnormal cytology and disease processes that affect the cytology of the respiratory tract, gastrointestional tract, central nervous system, body cavities and dermis. Examines the biological processes seen under the microscope with an emphasis on carcinoma. Prerequisite: HTO 425
4 credits Lecture

HTO 428 Fine Needle Aspiration Cytology

Explores the anatomy, histology and cytology of body sites. Emphasizes needle aspiration specimens such as central nervous system, breast, liver, pancreas, kidney, adrenal glands, lymph nodes, thyroid, salivary glands. Presents biological processes ranging from inflammation to neoplasia. Distinguishes normal cellular preparation from abnormal samples and addresses differential diagnosis. Requires extensive microscopic specimen evaluation.
4 credits Lecture

HTO 431 Specimen Preparation Techniques

Practical experience in the preparation of biological material for microscopic evaluation. Includes cell concentration and fixation techniques, staining procedures, specimen preservation, and quality control measures.
2 credits Lecture

HTO 432 Applied Cytology Techniques

Students accompany and observe cytotechnologists and physicians during fine needle aspiration procedures. Familiarizes students with different types of specialized cell staining, specimen preparation methods beyond the routine and the diagnostic interpretation of these methods. Familiarizes students with the operation of specialized instrumentation related to diagnostic cytology. Emphasizes quality diagnosis.
Prerequisite: HTO 431
1 credit Laboratory

HTO 450 Laboratory Management

Provides knowledge and skills to function optimally in, and guide the operation of, a cytology laboratory. Students will undertake an organizational plan for a cytology laboratory.
1 credit Lecture

HTO 480 Cytopathology Case Studies

Introduces the students to diagnostic clinical material and the formal systematic evaluation leading to a final report. Discusses diagnostic agreement and review of clinical assessment. Corequisite: HTO 427 Prerequisites: HTO 425
3 credits Laboratory

HTO 482 Cytology Practicum

Clinical instruction in a medical center/cytopathology laboratory. Emphasizes slide screening accuracy and speed, as well as fine needle aspiration, and specimen collection, preparation, interpretation and sign out. Students will observe and participate in fine needle aspiration procedures. Prerequisite: HTO 480
4 credits Clinical

HTO 484 Advanced Cytology Practicum I

Full-time instruction and practice in cytologic procedures and evaluations in an approved cytology laboratory for a five week period. Prerequisite: HTO 482
5 credits Clinical

HTO 486 Advanced Cytology Practicum II

A continuation of HTO 484. Prerequisite: HTO 484
5 credits Clinical

HTO 488 Quality Review

Discusses problems in cytology practice as presented by faculty and guest lecturers. Runs concurrently with Advanced Practicum and draws on relevant experiences.
Prerequisite: HTO 486
1 credit Lecture

HTO 490 Cytology Research

Allows investigation of a topic of choice in gynecologic cytology. Student, with faculty assistance, pursues the investigation, delivers an oral report, and submits a written report.
1 credit Tutorial

HTO 491 Cytology Project II

Involves a more in-depth study than HTO 490. Resulting paper is to be potentially publishable.
2 credits Tutorial

HTO 493 Issues in Cytopathology I

Discussion of areas of major interest in cytology, including medical and legal issues, ethics, government regulations, the role of specimen evaluation in health care management, and health care research as related to diagnostic cytopathology. Laboratory management issues, Journal Club and presentations from national meetings will be included.
2 credits Lecture

HTO 494 Issues in Cytopathology II

Emphasizes Journal Club presentations and discussions of cytology automation, cancer epidemiology, patient management and changes in the health care system, and litigation related to cytotechnologists and the laboratory.
2.5 credits Lecture

Program in Respiratory Care Leading to the Bachelor of Science Degree

Program Director: James A. Ganetis

Medical Director: Gerald Smaldone

Clinical Education Director: Lisa M. Johnson

Associate Professors: Edgar L. Anderson, Jr. (emeritus), William J. Treanor (emeritus)

Assistant Professors: Kenneth L. Axton Jr., Ingrid Bozeat, James A. Ganetis, Joseph P. Hock, Kenneth W. Hughes, Lisa M. Johnson, Michael McPeck, James M. O'Connor, Thomas R. Smalling, Stephen G. Smith

Instructors: Jeffrey Adelman, Susan Andersen, Patricia J. Berkoski, John Brittelli, Edward Carito, Jennifer Caulfield, Kevin Caulfield, , Edwin L. Coombs, Albert Mario Corso, Lisa Endee, William L. Ericsson, Gloria Hoerning, Roseann S. Hundertmark, Joanne Jacobsen, Deniese S. LeBlanc, Andrew J. Lee, Laurie Lenox, Wendy Ann Linder, Jane Luchsinger, Carol A. Marlborough, Donna McEvoy, Ute McKenna, Lori A. McKernan, Donald F. Meyer, Diana Mlyn, Theodore L. Nilsson, Ken Okorn, Robin Paladino, Daniela Rianna, Russell E. Rozensky, Natalie Jean Sachman, Matthew Traub, Patricia A. Wolman

The respiratory care program offers a full-time upper-division program leading to the Bachelor of Science degree. A certificate in sleep studies is also offered to students who complete the optional senior year courses in polysomnography. Stony Brook freshmen are given the option to declare respiratory care as a lower-division major.

Respiratory therapists utilize a variety of sophisticated medical equipment and therapies in the diagnosis and management of patients with a wide range of cardiorespiratory disorders. The knowledge and skills of the respiratory therapist are utilized in many aspects of health care including medical/ surgical intensive care, neonatal intensive care, pediatrics, emergency and trauma care, cardiopulmonary diagnostic laboratories and in rehabilitation and home care. Individuals who graduate from the program are employed as clinicians, managers, educators and researchers.

The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), in cooperation with the Committee on Accreditation for Respiratory Care (CoARC), and the New York State Department of Education.

The school's Certificate of Professional Achievement and the University's baccalaureate degree are awarded upon satisfactory completion of all coursework.

Admission Requirements

Candidates for the respiratory care program must meet the upper-division admission requirements of the School of Health Technology and Management. The requirements may be fulfilled through previously completed college studies.

In addition to the general academic requirements for junior status in the School of Health Technology and Management, candidates must have a minimum grade point average (GPA) of 2.5 and a minimum science GPA of 2.0. The program also requires candidates to meet the school's natural science requirement by successfully completing 11 credits of biological sciences (including 3 credits of microbiology), 8 credits of chemistry with laboratories, 4 credits of physics with laboratory, 3 credits of college level mathematics and certification in basic life support (BLS) from the American Heart Association. An additional physics course, with laboratory, as well as courses in anatomy and physiology, is also recommended. Science courses designated for science majors are preferred.

To advance to junior status, Stony Brook students who declared a respiratory care major as freshmen must meet the requirements described above, maintain a 2.5 cumulative GPA, and successfully complete HAT 210 with a grade of B or higher.

Program Requirements

All respiratory care students must complete the core course requirements of the School of Health Technology and Management. In addition, the following courses are required for successful completion of the upper-division program leading to the baccalaureate degree.

Basic Science/Other Health Technology and Management Courses

Course #	Title	Credits
HAS 300	Issues in Health Care	2
HAS 332	Management Concepts for Allied Health Professions	1
HAS 335	Medical Ethics	1
HAS 350	Introduction to Statistics	2
HAS 363	Computer Literacy for Health Professionals	1
HBA 561	Human Gross Anatomy	5
HBH 330	Fundamentals of Pharmacology I	2
HBH 331	Fundamentals of Pharmacology II	3
HBP 310	Pathology	3
HBY 350	Physiology	4

Professional Courses (Junior Year)

Course #	Title	Credits
HAT 304	Cardiopulmonary Physiology	4
HAT 306	Patient Evaluation	2
HAT 320	Cardiovascular Diagnosis and Treatment I	2
HAT 330	Pulmonary Pathology	3
HAT 331	Respiratory Care Techniques I	4
HAT 333	Pulmonary Diagnostic Techniques	3
HAT 340	Cardiovascular Clinical*	2
HAT 350	Basic Respiratory Care Clinical*	4
HAT 353	Pulmonary Diagnostic Clinical*	4
HAT 354	Airway Management Clinical*	2

Professional Courses (Senior Year)

Course #	Title	Credits
HAT 402	Advanced Cardiac Life Support	1
HAT 404	Neonatal Resuscitation	1
HAT 410	Introduction to Clinical Education	2
HAT 411	Clinical Teaching in Respiratory Care*	4
HAT 415	Instrumentation in Respiratory Care	2
HAT 420	Cardiovascular Diagnosis and Treatment II	3
HAT 431	Respiratory Care Techniques II	4
HAT 432	Perinatal Respiratory Care	3
HAT 450	Critical Care Clinical*	5
HAT 451	Perinatal Care Clinical*	4
HAT 482	Physiologic Monitoring Clinical*	2
HAT 487	Cardiopulmonary Rehabilitation Clinical*	2

*Clinical practice consists of full-time clinical instruction and practice at the clinical affiliates and other affiliated patient-care facilities.

HAT 493	Seminar/Readings in Respiratory Care I	1
HAT 494	Seminar/Readings in Respiratory Care II	1

Optional Polysomnography Certificate Courses

Course#	Title	Credits
HAT 470	Polysomnographic Technology I	2
HAT 471	Polysomnographic Technology II	2
HAT 475	Polysomnographic Technology I Clinical*	2
HAT 476	Polysomnographic Technology II Clinical*	2

Courses

HAT courses are given for respiratory care (RC) majors. The courses are sequential and require successful completion of prior courses. Non-RC students may take selected HAT courses, with the exception of clinical practica, with permission of instructor.

HAT 210 Introduction to Respiratory Care

An introduction to the science of respiratory care. Current trends in professional practice are discussed and students have the opportunity to observe clinical practice at a variety of affiliated health care facilities. This course is specifically designed for lower-division four year respiratory care majors. Open to west campus students.
1 credit Lecture

HAT 304 Cardiopulmonary Physiology

Presents a detailed study of the physiology of human respiration and circulation. Topics include functional cardiopulmonary anatomy, embryology, ventilation, diffusion, blood flow, gas transport, acid-base states, mechanics and regulation of ventilation and basic cardiac function.
4 credits Lecture

HAT 306 Patient Evaluation

Provides concept of data base, historical information, medical terminology, chief complaint and present illness, and chest physical examination. Applies problem based learning to the study of clinical assessment skills.
2 credits Lecture, Laboratory

HAT 320 Cardiovascular Diagnosis and Treatment I

Provides the basic technical and interpretive skills required to execute and read an electrocardiogram. Covers basic electrophysiology and presents the etiology, diagnosis and treatment of arrhythmias, as well as common cardiovascular pathologies, including congenital heart disease. The laboratory component includes EKG's, Holter monitoring and stress testing.
2 credits Lecture, Laboratory

HAT 330 Pulmonary Pathology

A comprehensive study of the etiology, diagnosis, pathogenesis, pathophysiology, treatment, and prognosis of various types of pulmonary pathologies.
3 credits Lecture

HAT 331 Respiratory Care Techniques I

Covers the basic therapeutic modalities of respiratory therapy including oxygen therapy, humidification, aerosol therapy, chest physiotherapy, incentive spirometry, intermittent positive pressure breathing, blood gases, and airway management. Includes application of techniques of infection control, rehabilitation and home care, and patient education. Prerequisites: HAT 304, HAT 306
4 credits Lecture, Laboratory

HAT 333 Pulmonary Diagnostic Techniques

Provides the basic technical skills of pulmonary function testing, including an introduction to the instrumentation and physical principles of clinical measurement; procedures for measuring the lung functions of ventilation, mechanics, diffusion, gas distribution and exchange; and interpretation of tests results and their relation to various pathophysiologies. Prerequisite: HAT 304
3 credits Lecture, Laboratory

HAT 340 Cardiovascular Clinical

Provides clinical practice in cardiovascular technology, including both invasive and noninvasive techniques. Students will be introduced to clinical EKG's, Holter scanning, stress testing, and general noninvasive cardiography.
Prerequisite: HAT 320
2 credits Clinical

HAT 350 Basic Respiratory Care Clinical

An introduction to the clinical application of basic respiratory procedures such as oxygen administration, aerosol therapy, IPPB, arterial punctures and other monitoring and diagnostic procedures. Additional experience is provided in the home care setting. Prerequisite: HAT 331
4 credits Clinical

HAT 353 Pulmonary Diagnostic Clinical

Clinical application of spirometry, diffusion studies, blood gas analysis, flow volume loops, body plethysmography, helium dilution, nitrogen washouts, and bronchodilator responses. Prerequisite: HAT 333
4 credits Clinical

HAT 354 Airway Management Clinical

Introduces the use of mechanical, cognitive, and decisional skills required in managing the airways of critically ill patients. Introduces students to actual patient management under supervision. Prerequisite: HAT 331
2 credits Clinical

*Clinical practice consists of full-time clinical instruction and practice at the clinical affiliates and other affiliated patient-care facilities.

HAT 402 Advanced Cardiac Life Support

Prepares the Respiratory Care student to be a participating member of the Advanced Cardiac Life Support team. The content of this course is modeled after the ACLS course offered by the American Heart Association.
1 credit Lecture

HAT 404 Neonatal Resuscitation

Provides students with knowledge and skills to perform neonatal resuscitation utilizing simulated situations for practice. Demonstrates the use of resuscitation equipment on manikins.
1 credit Lecture

HAT 410 Introduction to Clinical Education

Introduces clinical teaching to senior students. Modalities include the decision making process, teaching strategies, classroom management, instructional design, and formative and summative evaluation.
2 credits Lecture

HAT 411 Clinical Teaching in Respiratory Care

An extension of HAT 410. Develops skills for senior students to conduct clinical teaching strategies under faculty supervision. Prerequisite: HAT 410
4 credits Clinical

HAT 415 Instrumentation in Respiratory Care

Explores principles of biophysics, mechanics, and electronics related to the application of equipment used in cardiorespiratory care. Includes a comprehensive discussion of quality assurance, equipment maintenance, and diagnostic analysis.
Prerequisites: HAT 320, HAT 331, HAT 420, HAT 431, HAT 432
2 credits Lecture, Laboratory

HAT 420 Cardiovascular Diagnosis and Treatment II

Examines the theory and practical applications of invasive physiologic monitoring, including metabolic and hemodynamic monitoring, Swan-Ganz catheterization, cardiac output measurement and aseptic technique. Also contains an in depth study of the etiology, pathology and treatment of advanced cardiac disease, including congenital heart disease. Prerequisite: HAT 320
3 credits Lecture, Laboratory

HAT 431 Respiratory Care Techniques II

Introduces the concepts of advanced airway management and mechanical ventilation used in the respiratory support of the critically ill patient. Emphasizes the physiological basis for ventilator use, indications for ventilation, parameters monitored during ventilation, and ventilator design, function and clinical application. Prerequisite: HAT 331
4 credits Lecture, Laboratory

HAT 432 Perinatal Respiratory Care

Examines anatomy, physiology, and pathology relating to management of the neonatal/pediatric patient. Includes analysis of neonatal and pediatric ventilator function in terms of mechanics and suitability in clinical application. Corequisite: HAT 431
3 credits Lecture, Laboratory

HAT 450 Critical Care Clinical

Develops clinical skills in the management of the critical care patient. Includes specialized learning experiences in therapeutic modalities, mechanical ventilation, cardiovascular monitoring and home care ventilation. Prerequisites: HAT 350, HAT 431
5 credits Clinical

HAT 451 Perinatal Care Clinical

An extension of HAT 432. Presents in-depth diagnostic and therapeutic concepts utilized in pediatric and neonatal intensive care as well as other areas related to the holistic care of the newborn. Emphasizes specific technical procedures that differ from the adult patient.
Prerequisite: HAT 432
4 credits Clinical

HAT 470 Polysomnographic Technology I

Designed to provide entry-level personnel with both didactic and laboratory training in polysomnographic technology. Presents medical terminology, instrumentation setup and calibration, recording and monitoring techniques, documentation, professional issues and patient-technologist interactions. Lab sessions will provide practical experience in the skills in the skills required of an entry-level polysomnographic technologist.
Prerequisites: Completion of all junior year courses
2 credits Lecture, Laboratory

HAT 471 Polysomnographic Technology II

Provides training in more advanced aspects of polysomnographic technology. Students become familiar with the skills and knowledge needed to obtain and evaluate high quality sleep recordings. Covers all the aspects of sleep scoring and event recognition, recording and monitoring techniques, documentation, professional issues, therapeutic interventions, and patient-technologist interactions related to polysomnographic technology.
2 credits Lecture, Laboratory

HAT 475 Polysomnographic Technology I Clinical

Provides clinical training in the basics of polysomnographic technology. Familiarizes students with instrumentation setup and calibration, recording and monitoring techniques, documentation, professional issues, and patient-technologist interactions related to polysomnographic technology. Provides patient contact in a sleep lab. Presents opportunity to observe, perform (under supervision) and evaluate sleep studies.
2 credits Clinical

HAT 476 Polysomnographic Technology II Clinical

Provides student with patient contact in a sleep lab through observation, performance under supervision, and evaluation of sleep studies. Familiarizes student with skills required to obtain and evaluate quality sleep recordings.
Pre-requisite: HAT 470; HAT 471, HAT 475
2 credits Clinical

HAT 482 Physiologic Monitoring Clinical

Provides a clinical experience in the hemodynamic and metabolic monitoring of patients in critical care units/labs. Covers invasive diagnostic cardiovascular procedures, including cardiac catheterization, intra-arterial pressure monitoring, and indwelling arterial catheter insertion and monitoring. Prerequisites: HAT 420, HAT 431
2 credits Clinical

HAT 487 Cardiopulmonary Rehabilitation Clinical

A clinical experience concentrating on program planning and evaluation of patients with chronic cardiopulmonary disorders. Includes discharge planning, rehabilitative services, stress testing, graded exercise and other supportive techniques. Prerequisites: HAT 320, HAT 331
2 credits Clinical

HAT 490 Independent Study

Proposals for independent study in respiratory care must be submitted through the program director to the Committee on Research and Directed Study for approval prior to registration for this course.
1-6 credits Tutorial

HAT 493 Seminar/Readings in Respiratory Care I

A journal club offering that is designed to assist the student in the development of a professional knowledge base. Each student is expected to review and critically analyze current research publications in the field of respiratory care and report those findings to the faculty and their peers in an informal discussion setting.
1 credit Seminar

HAT 494 Seminar/Readings in Respiratory Care II

A practical discussion and seminar course that prepares the student to take the national certification and registry examinations. Each student will take self-assessment exams that analyze their technical and clinical skills in the areas of data collection and interpretation, as well as decision making skills.
1 credit Lecture

Division of Rehabilitation Sciences

Chair: Richard W. Johnson

Department of Physical Therapy

Chair: Richard W. Johnson

Director of Academic Administration: Janice M. Sniffen

Director of Curriculum and Faculty Development: Anita M. Santasier

Associate Professors: William E. DeTurk, Richard W. Johnson, Eric Lamberg, Raymond F. McKenna, Margaret A. McNurlan, Clifton S. Mereday (emeritus), Lisa M. Muratori, Margaret M. Plack, Anita M. Santasier, Jacob S. Schleichkorn (emeritus), Janice M. Sniffen, Teri Tiso

Assistant Professors: Vincent J. Barry, Dawn M. Blatt, David R. Borenstein, Lynn A. Cataldo, Tara L. Cattaneo, Brenda Collins, Elaine E. DeFrancesco, Maryanne Driscoll, Kerry J. Falvey, Ralph K. Garcia, Joseph M. Giglio, Cheryl A. Gillespie, Ann Goerdt, Catherine C. Goodman, Cheri L. Gostic, Lisa Anne Grieco, Christine S. Hammer, Evelyn Hecht, Kyle D. Hewson, Matthew Hyland, Michelle Hyland, Jody Klein, Howard W. Makofsky, Lisa M. Mancini, Sharon A. Martino, Andrew L. McDonough, Patric McQuade, Maria A. Meigel, Joseph Montalto, Karen O'Hagen, Rose M. Ortega, Peter C. Panus, Diana R. Ribaudo, Candiano Rienzie, Susan Ruck, Nicole M. Skidmore, Robert E. Spagnoli, Susan E. Spagnoli, Robert M. Streb, Catherine M. Tuppo, Debra M. Vion, Kevin C. Weaver, Scott Yerys, Sandra F. Zamparo

Lecturers: Gina Alaimo, Robert Biaggi, Elizabeth A. Budd, Paul-Neil Czujko, Barbara W. DeTurk, Agnes McConlogue Ferro, Barbara V. Lee, T. Guillaume Van Moorsel, Deborah L. Weingarten

Instructors: Ann Arcery, Christine M. Calderone, Daniel R. Cammarata, Christopher K. Carden, Donald S. Doherty, Donald S. Hardwick, Raymond F. Mattfeld, James Megna, Diane M. Nicholson, Maureen O'Rourke

Program in Physical Therapy Leading to the Entry-Level Doctor of Physical Therapy Degree

Chair: Richard W. Johnson

Academic Coordinators of Clinical Education: Dawn Blatt, Cheri Gostic and Rose Ortega

Recent trends in health care have precipitated the development of a three-year entry-level graduate clinical doctorate program in physical therapy. These changes in health care include:

- Shorter lengths of stay in traditional environments.
- Higher acuity and survival as a result of medical science and technological advances.
- The need for health management via intervention, prevention and maintenance, as well as the management of disease, impairments and disabilities.
- Role and practice adaptations by physical therapists in anticipation of and in response to market changes.
- The development of strategies by payers that demand evidence-based justifications for interventions.
- Health care models that require greater risk assumption and accountability for outcomes of care.

The three-year graduate program consists of 103.5 didactic credits and 40 clinical credits. Graduates of the program are prepared to provide care in a multitude of physical therapy settings.

The program develops leaders who demonstrate evidence-based practice, critical inquiry skills and clinical decision making skills needed for differential diagnosis and autonomous practice. In addition to direct patient care, graduates can pursue careers in research, administration, consultation, and community health.

The Doctor of Physical Therapy Program is accredited by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association (CAPTE/APTA). Graduates are eligible to sit for the national license exam. In addition to the doctor of physical therapy degree, the school's Certificate of Professional Achievement in Physical Therapy is awarded upon satisfactory completion of all coursework.

Admission Requirements

Applicants for the entry-level doctor of physical therapy program must have a completed baccalaureate degree prior to enrollment in the program. Candidates must meet the school's natural science requirement by successfully completing eight credits each of chemistry, physics, and biology. Each course must be designated for science majors and have a laboratory component. A three credit 300 or 400 level physiology course or eight credits of Anatomy and Physiology is also required.

Completion of required science courses must be within the past ten years. In addition, the department requires 9 credits in social and behavioral sciences, 9 credits in arts and humanities, 3 credits in English composition and 3 credits in statistics. Candidates must complete required course work by the end of the spring term of the year for which the application is made. Certification in cardiopulmonary resuscitation (CPR) and first aid is required. A minimum of a 3.0 cumulative grade point average and a 3.0 grade point average for the required prerequisite science courses is preferred. Applicants must submit Graduate Record Examination (GRE) scores. At least 100 hours of volunteer or work experience within a physical therapy facility is required. A varied exposure to the field is recommended.

Program Requirements

Physical therapy students must complete the following required courses:

Professional Courses (Year One)

Course#	Title	Credits
HBA 540	Human Anatomy for Physical Therapists	6
HAY 500	Neuroscience for Physical Therapy	4
HAY 501	Growth and Development Across the Life Span	4
HAY 504	Introduction to Adult Rehabilitation	3.5
HAY 517	Exercise Physiology	1
HAY 518	Foundations of Exercise and Movement in Physical Therapy	3.5
HAY 519	Kinesiology	5
HAY 526	Clinical Medicine and Pharmacology I	3.5
HAY 527	Acute Care in Physical Therapy	4
HAY 528	Clinical Medicine and Pharmacology II	4
HAY 541	Physical Agents and Wound Care in Physical Therapy	2.5
HAY 542	Electrotherapy in Physical Therapy Practice	3
HAY 553	Computer Literacy and Evidence Based Practice	1
HAY 560	Foundations of Professional Practice in Physical Therapy	2
HAY 561	Teaching, Consulting, Communicating in Clinical Education	2
HAY 570	Physical Therapy Case Studies I	1

Professional Courses (Year Two)

Course#	Title	Credits
HAY 502	Psychosocial Aspects of Disability I	1
HAY 503	Psychosocial Aspects of Disability II	1
HAY 506	Adult Neurological Rehabilitation	4
HAY 507	Orthopedic Physical Therapy I	3.5
HAY 508	Orthopedic Physical Therapy II	3.5
HAY 509	Pediatric Rehabilitation	4
HAY 510	Cardiopulmonary Rehabilitation	3
HAY 512	Prosthetics and Orthoses	4
HAY 523	Biomechanics and Measurement	3
HAY 535	Issues in Motor Control	3
HAY 552	Research Methods for Physical Therapists: Design and Statistics	4
HAY 571	Physical Therapy Case Studies II	1
HAY 595	Clinical Practice I*	8

Professional Courses (Year Three)

Course#	Title	Credits
HAY 524	Health, Wellness and Prevention in Physical Therapy	3
HAY 525	Advanced Therapeutic Exercise	3
HAS 534	Fundamentals of Health Care Management	3
HAS 545	Ethics and Health Care	3
HAY 558	Evidence Based Practice Seminar	3
HAY 562	Teaching Skills for Clinical Instruction	1.5
HAY 572	Physical Therapy Case Studies III	1
HAY 596	Clinical Practice II*	8
HAY 597	Clinical Practice III*	8
HAY 599	Clinical Internship	16

Special Academic Requirements

In addition to the academic policies of the school, a minimum grade of C- in HBA 540 Regional Human Anatomy is required for continued matriculation in the physical therapy program. For the remaining professional courses, each student must achieve a minimum grade of C+. Failure to earn a minimum of a C+ will require a student to repeat the course and prevent the student from participating in clinical affiliations. Failure to successfully complete 3 or more courses during the three-year curriculum will result in a student being subject to termination from the program. Additionally, students must

*Clinical practice consists of full-time clinical instruction and practice at the clinical affiliates and other affiliated patient-care facilities.

maintain a 3.0 cumulative grade point average to remain in good academic standing and participate in clinical affiliations.

Program in Physical Therapy Leading to the Post-Professional (Transition) Doctor of Physical Therapy Degree

Chair: Richard W. Johnson

Program Director: Kyle Hewson

Associate Program Director: Sharon Martino

The Post-Professional (Transition) Doctor of Physical Therapy (tDPT) is designed to enhance clinical decision making skills and promote evidence-based practice necessary for success in today's health care market. Coursework is designed to provide the current knowledge and theory of practice consistent with the demands of the doctoring profession. This program meets the contemporary needs of physical therapy clinicians, managers, and educators. Specific areas of augmentation include: foundational sciences (pharmacology and medical imaging), clinical sciences (evidence-based practice, clinical decision making, differential diagnosis, health care management, and health, prevention and wellness), computer technology, and outcome measurement and analysis. Students are given the opportunity to pursue further study in areas of particular interest by enrolling in elective classes. These electives span current practice in the areas of musculoskeletal, neuromuscular, and cardiopulmonary care as well as health, wellness and prevention, education and administration. Courses are offered in evening and weekend formats to accommodate the working clinician. Courses are offered at two sites, Stony Brook Long Island and Stony Brook Manhattan. Students admitted to the program are eligible to enroll in classes at either or both locations. Please note that the Computer Literacy and the Medical Imaging weekend courses must be completed at Stony Brook Long Island.

Admission Requirements

Applicants must have graduated from a program with a certificate, bachelor's degree or master's degree in physical therapy, and must be licensed in the United States. A cumulative grade point average of 3.0 is preferred.

Program Requirements

Candidates must satisfy all core and elective requirements (30-36 credits).

Core: Candidates must complete the courses listed below

Course#	Title	Credits
HAY 529	Principles of Pharmacology	4
HAY 530	Differential Diagnosis	3
HAY 548	Medical Imaging	2
HAY 551	Introduction to Research Methods and Design	3
HAY 553	Computer Literacy and Evidence Based Practice	2
HAY 556	Outcomes Measurement and Analysis	3
HAY 558	Evidence Based Practice Seminar	3
HAY 576	Clinical Decision Making	3

Electives

Candidates must select 3 courses for a total of at least 7 elective credits. Electives will vary and may include, but not be limited to, the following:

Topics in Musculoskeletal Physical Therapy

Course#	Title	Credits
HAY 520	Biomechanics	3
HAY 521	Musculoskeletal Measurement	3

Topics in Neuromuscular Physical Therapy

Course#	Title	Credits
HAY 531	Motor Learning	3
HAY 533	Implicit vs. Explicit Learning	3
HAY 536	Introduction to Motor Control	3
HAY 537	Neuroplasticity	3

Topics in Cardiopulmonary Physical Therapy

Course#	Title	Credits
HAY 615	Applied Physiological Foundations of Exercise	3
HAY 616	Exercise Prescription	3

Topics in Health, Wellness, and Prevention

Course#	Title	Credits
HAY 601	Issues in Global Health Care	2
HAY 610	Fitness and Wellness	3
HAY 611	Complementary and Alternative Approaches to Rehabilitation and Wellness	3
HAY 612	Sports and Exercise Nutrition	3

Topics in Education and Administration

Course#	Title	Credits
HAY 563	Teaching and Physical Therapy Practice	3
HAY 602	Issues in Health Care Administration	2

Any courses offered in the SHTM Advanced Certificate Program in Health Care Management can be used to satisfy the elective requirement.

Practicum (HAY 580) for Select Students Only. (Requires Permission of the Program Director.) Students may enroll in 3 to 6 credits in research, education, clinical practice, or management administration.

Courses

HAY 500 Neuroscience for Physical Therapy
Integrated approach to general principles of organization and function of the peripheral and central nervous systems. Presents these principles in a systems approach to neuroscience. Covers the anatomy of the system with its physiology and clinical relevance to physical therapists. Clinical topics include neurology, neurological testing, control of posture and balance, locomotion, pain, muscle tone, feedback vs. feedforward control mechanisms, control of reaching, perception and learning. Prerequisite: HBA 540
4 credits Lecture

HAY 501 Growth and Development Across the Life Span
Presents an integrative approach to normal human growth and development throughout the life span. Examines developmental norms and sequences with emphasis on biophysical (motor and sensory), cognitive, language and psychosocial tasks. Discusses social, cultural and environmental influences. Covers prenatal, infant, child, adolescent, adult and older adult geriatric development, as well as related aging issues.
4 credits Lecture

HAY 502 Psychosocial Aspects of Disability I
Emphasizes the psychosocial aspects of disability as they affect the life of the individual. Topics include identification of pre-morbid factors that contribute to positive adjustment or maladaptive responses to disability; the influence of culture on individual and family expectations of the health care system; patient perspectives as consumers of the health care system; and changing roles in the family. Students will practice techniques of positive listening and role-play to develop skills in recognizing psychosocial factors during acquisition of patient history. Emphasizes utilization of psychosocial information in the establishment of a plan of care for patients across the life span.
1 credit Lecture, Laboratory

HAY 503 Psychosocial Aspects of Disability II
Explores the interactions of the individual with disability within the community. Focuses on concerns of the individual beyond physical rehabilitation. Topics include concomitant mental health issues; the mind-body connection; humor in medicine; complementary and alternative medicine; technology and disability; vocational rehabilitation; sexuality; domestic violence and interpersonal abuse; substance abuse; and terminal illness. Promotes identification and communication with local, regional and national resources that enable individuals with disabilities to engage in recreational, vocational, or educational endeavors. Prerequisite: HAY 502
1 credit Lecture, Laboratory

HAY 504 Introduction to Adult Rehabilitation
A systems model of motor control and principles of motor learning will be utilized as a theoretical framework to prepare students to examine, evaluate, establish problem lists, determine and write appropriate goals, develop an intervention plan and implement an intervention for neurologic patient populations. Presents fundamental skills including documentation, body mechanics, bed mobility and patient positioning, wheelchair management, transfers and ambulation training. Introduces students to task-oriented practice and neurotherapeutic techniques and applies exercise principles established in Foundations of Exercise and Movement to the individual with a neurological disorder. Prerequisites: HAY 500 and 518
3.5 credits Lecture, Laboratory

HAY 506 Adult Neurological Rehabilitation
Uses the disablement model to examine the impact of adult neurological or neuromuscular conditions on activities identified by an individual as essential to support physical, social, and psychological well-being and to create a personal sense of meaningful living. Students will continue practicing synthesis of examination data during the evaluation process; however, the major emphasis of the course will be to develop and implement appropriate intervention strategies based on the best evidence available for people with neurological or neuromuscular disorders. Prerequisites: HAY 500 and 504
4 credits Lecture, Laboratory

HAY 507 Orthopedic Physical Therapy I
Introduces concepts of musculoskeletal subjective and objective examination. Sharpens student's evaluation skills as clinical decision-making and differential physical therapy diagnosis, prognosis and intervention are introduced in the framework of musculoskeletal dysfunction. Applies these general skills to various musculoskeletal dysfunctions of the lower extremities. Explores functional anatomy, including the osteokinematics, arthrokinematics, mycology and neurology of the lower extremities as they relate to surgical and non-surgical musculoskeletal conditions. Prerequisite: HAY 519
3.5 credits Lecture, Laboratory

HAY 508 Orthopedic Physical Therapy II
Builds on the concepts and skills of Orthopedic Physical Therapy I by integrating clinical decision-making and differential physical therapy diagnosis, prognosis and intervention of the lower extremities with the spine and upper extremities. Various musculoskeletal dysfunctions of the trunk and upper extremities are explored. Functional anatomy, including the osteokinematics, arthrokinematics, mycology and neurology of the trunk and upper extremities are discussed as they relate to surgical and non-surgical musculoskeletal conditions. Prerequisite: HAY 507
3.5 credits Lecture, Laboratory

HAY 509 Pediatric Rehabilitation
Emphasizes abnormal movement patterns in children. Presents developmental and long term effects of neuromuscular and musculoskeletal dysfunction as they relate to movement. Discusses examination and intervention techniques of selected movement problems. Explores use of adaptive equipment and the role of the pediatric physical therapist in a variety of contexts and environments. Students will assess and work with children with developmental disabilities in a local facility. Prerequisites: HAY 501 and 506
4 credits Lecture, Laboratory

HAY 510 Cardiopulmonary Rehabilitation

Emphasizes the patient-client management model for cardiac and pulmonary patients in out-patient and home care settings. Includes interpretation of electrocardiograms, heart/lung auscultation, and the administration of graded exercise test protocols. Explores aerobic endurance exercise prescription and the use of appliances in elderly patients with congestive heart failure. Emphasizes the use of evaluative findings to develop a total plan of care.
Prerequisites: HAY 517, HAY 526, HAY 527, HAY 528
3 credits *Lecture, Laboratory*

HAY 512 Prosthetics and Orthoses

Studies prosthetic and orthoses management as applied to a variety of patient populations across a life span. Addresses considerations of various pathology and medical surgical management to formulate appropriate patient examinations, evaluation, diagnosis, prognosis and intervention that are consistent with physical therapy practice guidelines. Principals of normal biomechanics, pathomechanics, physiology and pathophysiology will be a major focus for evaluation, intervention and education of the vascular, neuromuscular, and / or musculoskeletal compromised patient that may utilizes prosthetic or orthotic devises. Basic principles of mechanical physics and material characteristics will be applied. Clinical site visits are scheduled to observe and practice patient evaluation, treatment and education techniques.
Prerequisite: HAY 519
4 credits *Lecture, Laboratory*

HAY 517 Exercise Physiology

Reviews the normal physiology of the cardiopulmonary system. Presents the normal immediate response to exercise and long-term effects of exercise in the healthy well individual. Includes presentation of foodstuffs for energy production, metabolic pathways for production of ATP, and energy systems used in aerobic and anaerobic activities. The course includes strength and endurance exercise prescription for the healthy well individual. Also includes laboratory experiences for the measurement of vitals and select exercise testing.
Prerequisite: HBA 540
1 credit *Lecture, Laboratory*

HAY 518 Foundations of Exercise and Movement in PT

Presents an introduction to the fundamental principles of strength and flexibility. Fundamentals of muscle and connective tissue function from microstructure to macrostructure are considered in health and dysfunctional states through the life span. These basic principles will be expanded to explore the concept of myofascial mobility, extensibility and length. Students will combine the skills learned in Kinesiology with those learned in this course to begin the process of examination, evaluation and designing intervention programs for the movement dysfunction
3.5 credits *Lecture, Laboratory*

HAY 519 Kinesiology

Explores the kinetics and kinematics of normal, purposeful human movement. Integrates knowledge of human anatomy, physiology, mechanics and biomechanics as it applies to movement of the extremities and spine. Includes evaluation procedures such as manual muscle testing and measurement of joint range of motion. Direct patient contact is scheduled.
Prerequisite: HBA 540
5 credits *Lecture, Laboratory*

HAY 520 Biomechanics

Biomechanics uses laws of physics and engineering to describe the motion undergone by various body segments and the forces acting on these body parts during activities. Considers the application of classic mechanics, including statics, dynamics, solid mechanics, and fluid mechanics to describe movement and the loads placed on biological tissue. Uses a quantitative biomechanical approach to analyze loads on joints and soft tissue during movement, skill performance especially related to sports, the efficiency of movement and the biomechanical rationale for specific physical therapy intervention. Students analyze a movement biomechanically using appropriate mathematical formulas and analyze and critique relevant quantitative information from the literature.
Prerequisite: HAY 519 (for entry level DPT only)
3 credits *Lecture*

HAY 521 Musculoskeletal Measurement

Presents measurement methodology of human motion including motion analysis, EMG, electric goniometry, force plates and dynamometry. Reviews selected examples of methodology from current literature. Students will choose a measurement project related to one of the topics and record data. Requires a teaching project related to kinematic or kinetic measurement. Prerequisite: HAY 520
3 credits *Lecture*

HAY 523 Biomechanics and Measurement

Presents mathematical and technological tools used in biomechanical analysis of human movement. Through the study of kinematics, kinetics and electromyography, students describe variables used to study movement; identify appropriate variables to answer clinical questions; and explain concepts of measurement and measurement equipment. Reviews algebra, vector algebra, trigonometry and International System of Units. Presents concepts and terminology of measurement and electrical signal processing. Offers opportunities to perform measurements using low and high technology devices and systems.
Prerequisite: HAY 519
3 credits *Lecture, Laboratory*

HAY 524 Health, Wellness and Prevention in Physical Therapy

Presents issues related to promotion of health and wellness and concepts of integrative medicine. Examines and integrates general fitness into the following clinical environments: obstetrics, occupational health and injury prevention, ergonomics, sports medicine (pre, post, and in season), obesity, chronic pain, pediatrics, geriatrics, and athletic programs for the physically and/or mentally challenged. Students will perform screening techniques for the assessment of the following wellness issues: school-based scoliosis, safety and accessibility of children play areas, cardiovascular fitness, and fall prevention in the elderly. Based upon the findings of screens and individual client goals, students will develop, implement and assess the effectiveness of a cohesive wellness program. Introduces issues related to the development of a wellness center and visits to established prevention programs in the community. Prerequisite: HAY 510
3 credits *Lecture*

HAY 525 Advanced Therapeutic Exercise

Provides students with the opportunity to apply and analyze therapeutic exercise techniques in order to formulate exercise programs for diverse patient and client populations. Students will be encouraged to discuss and build upon their knowledge of basic therapeutic techniques attained from previous coursework and clinical training experiences. Advanced techniques will be demonstrated and practiced in lab. Students will evaluate, set goals, develop therapeutic exercise programs and measure outcomes. Issues regarding frequency, intensity and duration of treatment will be discussed throughout the course.
Prerequisites: HAY 507, 508, 518 and 519
3 credits *Laboratory*

HAY 526 Clinical Medicine and Pharmacology I

Provides a foundation in medicine and differential diagnoses. Introduces the concepts of evidence-based practice, Nagi's model of disablement, client/patient management model, and an interaction model between patient, task and environment. These frameworks will guide the process of clinical decision-making. Integrates principles of pharmacology, diagnostic radiology and laboratory diagnostic testing to facilitate safe and effective patient management planning. Familiarizes students with medical terminology and abbreviations for efficient and effective chart reviewing and documentation. Explores select systemic diseases, focusing on epidemiology, pathology, histology, etiology, as well as primary and secondary clinical characteristics. Discusses and integrates subsequent medical and surgical management to formulate appropriate intervention indications, precautions and contraindications.
3.5 credits *Lecture, Laboratory*

HAY 527 Acute Care in Physical Therapy

Emphasizes use of the patient-client management model focused primarily on the acute care in-hospital setting. Includes examination techniques, transfers, bed positioning, orthopedic, pulmonary and cardiac care, and select post-surgical physical therapy intervention protocols. Includes documentation, discharge planning, and the use of appropriate ancillary services and equipment. Prerequisites: HAY 518 and 526; Corequisite: HAY 528
4 credits *Lecture, Laboratory*

HAY 528 Clinical Medicine and Pharmacology II

Continues to build a foundation in medicine and differential diagnosis. Utilizes the concepts of evidence-based practice; Nagi's model of disablement; client/patient management model; and the interaction model as frameworks for clinical decision-making. Presents epidemiology, pathophysiology, etiology, clinical characteristics and subsequent medical and surgical diagnoses and management of select disease/injury. Integrates pharmacology, diagnostic radiology and laboratory diagnostic testing into safe and effective patient management planning through clinical case study exercises. Focuses will be on the formulation of appropriate intervention indications, precautions and contraindications. Based on medical record review and analysis, students synthesize an appropriate patient/client management plan consistent with the Guide to Physical Therapy Practice. Prerequisites: HAY 500 and 526
4 credits *Lecture, Laboratory*

HAY 529 Principles in Pharmacology

Examines the general principles of pharmacology including pharmacokinetics, pharmacodynamics and toxicology of common drugs used in clinical medicine. Explores implications of the use of pharmacological agents for the central nervous, cardiovascular, pulmonary, neuromusculoskeletal, and endocrine systems, as well as chemotherapeutics, as it relates to physical therapy patient/client management across the lifespan.
4 credits *Lecture*

HAY 530 Differential Diagnosis

Introduces students to the role that health screenings and systems review play in the process of making physical therapy diagnoses. Evidence based clinical decision making consistent with the patient client management model will be the foundation upon which differential diagnoses are made. Case studies will be used to integrate screening information in determining a physical therapy diagnosis and making decision regarding intervention versus referral.
3 credits *Lecture*

HAY 531 Motor Learning

Synthesizes and analyzes current theory and research related to skill acquisition through examination of historical and current literature. Places emphasis on determining the implications of this work for future research, educational and/or clinical practice. Includes early and contemporary theory, skill acquisition facilitation, practice, feedback, transfer of training, modeling, part vs. whole training, imagery, implicit learning, explicit learning, and memory systems.
3 credits *Lecture*

HAY 533 Implicit vs Explicit Learning

Students will explore memory systems active in implicit and explicit motor learning. They will critically evaluate and integrate current research related to implicit and explicit learning. Research will include developmental and neuropsychological approaches to learning for rehabilitation. Students will determine the usefulness of the methodology, task design and the results of each study. A teaching project related to implicit or explicit learning is required.
Prerequisite: HAY 531
3 credits *Lecture*

HAY 535 Issues in Motor Control

Establishes historical context for the major explanatory concepts applied to issues of coordination and skill during the last century. Compares readings of original work of Bernstein to current literature pertaining to motor programs, dynamic pattern theory and computational models. Students will critically evaluate papers related to the control of locomotion and the

control of reaching and grasping skills. Entry level and post-professional physical therapy students.
Prerequisite: Biomechanics and Measurement
3 credits Lecture

HAY 536 Introduction to Motor Control

Establishes historical context for major explanatory concepts applied to issues of coordination and skill during the last century. Presents readings of original work of leading theoreticians and researchers who have made significant contributions during this period. Students will critically evaluate papers related to reflex theory, serial order, servocontrol, information processing theory, motor programs, dynamic pattern theory and computational models.
3 credits Lecture

HAY 537 Neuroplasticity

Presents an overview of recovery of function mechanisms. Students critically analyze animal and human research literature examining spinal cord, somatosensory cortex, motor cortex and nueral plasticity. Addresses effectiveness of different human research paradigms exploring the issue of neural changes. Explores the effects of age, nature of lesion, environment and pharmacology on recovery of function. Links neural plasticity research to conceptual frameworks for clinical practice. Prerequisite: HAY 536
3 credits Lecture

HAY 541 Physical Agents and Wound Care in Physical Therapy

Physical modalities including superficial and deep thermal agents, hydrotherapy, aquatic therapy, intermittent compression, mechanical traction, burn and wound care with aseptic technique are presented in class. Emphasis will be placed on evidence-based practice with ample opportunity to learn from experienced clinicians through guest lectures and site visits. Students will focus on pre-treatment assessment and physiological response to treatment as the basis for clinical decision making. Patient education, treatment preparation and performance, indications and contraindications will be covered for each modality. Supervised laboratory sessions provide a safe atmosphere for the administration of these agents as well as direct observation of clinical effects. Laboratory sessions and group discussions will be case study driven to foster critical thinking and collaborative learning.
2.5 credits Lecture, Laboratory

HAY 542 Electrotherapy in Physical Therapy

Explores fundamental skills in application of electromodalities and knowledge of indications, contraindications and physiological principles needed for appropriate patient care. Includes topics such as electric stimulation, T.E.N.S., iontophoresis, ultrasound/phonophoresis, diathermy and electrodiagnostic testing.
Prerequisites: HBA 540, HAY 500, HAY 541
3 credits Lecture, Laboratory

HAY 545 Ethics and Health Care for Physical Therapists

This course provides an overview of the ethics of health care in a rapidly changing society. Explores ethical issues surrounding health care changes and public health policy. Includes an overview of the ethics within patient education and discussions involving the physical therapy professional codes of ethics and standards. The student will learn how to approach ethical dilemmas using theoretical frameworks and decision-making processes. Introduces the student to the ethics within physical therapy and other health care professions through the use of case studies. Includes a review of classic cases in health care ethics, involving issues such as euthanasia and organ transplants, from an ethical, legal and historical perspective.
3 credits Lecture

HAY 548 Medical Imaging

Introduces equipment, procedures and use of medical imaging for examination and evaluation of dysfunction. Examines topics such as radiographs, arthrography, CT scans, MRI, and nuclear studies. Case studies will be used to integrate imaging data into the patient/client management plan.
2 credits Lecture

HAY 550 Statistics

Presents the fundamentals of statistical analysis. Includes performing basic statistical analyses using at least one computer program. Topics include descriptive statistics, statistical inference, tests for experimental comparisons, correlation, regression, and nonparametric tests. Addresses the relationship between statistics and research design by introducing relevant research articles in the field of physical therapy.
3 credits Lecture

HAY 551 Introduction to Research Methods and Design

Introduces basic concepts of scientific design and methodology for the critical examination of scientific literature. Explores the relevance of research application and evidence-based practice in physical therapy. Introduces concepts of dependent, independent variables, hypothesis testing, sampling, and experimental controls. Addresses ethical issues, informed consent and human subject constraints. Measurement reliability and validity will be emphasized with application to outcomes management. Explores a variety of research designs including experimental, quasi-experimental, descriptive, correlation, qualitative and single case study designs. Basic concepts of statistical analyses will be integrated through discussion and literature learning projects.
3 credits Lecture

HAY 552 Research Methods for Physical Therapists: Design and Statistics

Designed to teach entry level physical therapy students the fundamentals of reading and understanding research methods, design, and statistics. Includes reliability and validity, research design, descriptive statistics, statistical inference, test for experimental comparison, correlation, regressions, nonparametric tests, single subject design, and qualitative research. Addresses the relationship between statistics and research design by introducing relevant research articles in the health care field.
4 credits Lecture

HAY 553 Computer Literacy and Evidence Based Practice

Addresses the foundational skills practicing therapists need to effectively manage, integrate, and communicate information for clinical practice, research and professional activities. This course exists in three parts. Part I focuses on accessing and evaluating clinical information. Part II focuses on information organization and manipulation. Part III focuses on the management and professional communication of information.
1-2 credits Lecture

HAY 556 Outcomes Measurement and Analysis

Introduces students to various outcome measures relating to impairments, functional limitations and disability, general health status, and patient/client satisfaction used to guide physical therapy practice across the lifespan. Measurement properties will be explored and strategies discussed to appropriately assess and select various outcome measurement scales. Critical appraisal of the literature will provide the basis for making clinical decisions regarding selection of the most beneficial outcome measure for an individual patient/client, service and/or program.
3 credits Lecture

HAY 558 Evidence Based Practice Seminar

Explores a broad spectrum of research literature examining physical therapy practice. Uses literature as a tool to integrate students critical inquiry skills and depth of knowledge in biomechanical analysis, musculoskeletal measurement, cardiopulmonary functions, motor control and motor learning theory. Students judge the strength of the evidence of each paper and draw conclusions regarding its clinical significance in neuromotor and musculoskeletal rehabilitation. When lacking evidence, challenges students to suggest ways to strengthen the current evidence. Requires each student to facilitate a class discussion.
3 credits Lecture

HAY 560 Foundations of Professional Practice in Physical Therapy

Examines the roles and responsibilities of the physical therapist in the present health care environment. Historical and ethical foundations of the profession, as well as current and emerging issues, are discussed. Explores the scope of practice of the Doctor of Physical Therapy. Introduces the format and function of the APTA Guide to Physical Therapist Practice. Stresses the importance of professionalism, including active membership in the APTA. Explores the dynamics of professional relationships with patients, families, and other care providers.
2 credits Lecture

HAY 561 Teaching, Consulting, Communicating in Clinical Education

Examines different learning styles and their effect on the learning environment. The fundamentals of teaching as they apply to patient education, professional inservices, and clinical education are presented and practiced. Students are introduced to aspects of verbal and nonverbal communication, with the opportunity to work in small groups for application of these principles. The aspect of physical therapy consultation in clinical experiences as well as professional opportunities is explored. Preparation for the first clinical education experience, specifically clinical site and academic program expectations, professional behavior, and student responsibilities, are discussed in detail.
2 credits Lecture

HAY 562 Teaching Skills for Clinical Instruction

Provides framework for assuming the role of a clinical instructor. Includes the preplanning period, structuring the actual clinical experience, and types of evaluation provided to physical therapy students. Discusses the exceptional student in the clinical setting. Explores legal aspects and alternative models of clinical education. Prerequisites: HAY 561, 595 and 596
1.5 credits Lecture

HAY 563 Teaching and Physical Therapy Practice

Introduces students to adult learning principles and strategies for teaching in the academic and clinical environments. Explores teaching/learning philosophies, characteristics of the adult learner, learning styles, self-directed learning, and reflective practice. Discusses the clinical environment as a community of practice, with emphasis on the student, clinical instructor and community as a learning triad. Students will be given the option to become credentialed clinical instructors through the American Physical Therapy Association.
3 credits Lecture

HAY 570 Physical Therapy Case Studies I

First phase in a 3-course sequence designed to develop the student's ability to capture and utilize relevant knowledge and ideas, apply them appropriately within the patient management model, and assess the effectiveness of their interaction. In addition to examining, evaluating, prognosticating, diagnosing and developing and implementing intervention strategies, the students will observe, discover and rediscover how the four systems (neuromotor, cardiopulmonary, musculoskeletal and integumentary) work together to influence function. Faculty and lab assistants will design and mentor problem-based activities and case studies that require students to problem solve, hypothesize and reason. Students will be expected to extract information from a case study, prioritize and sequence patient contact, and demonstrate professional behaviors including effective communication skills. Cases will incorporate patients from the community of diverse cultural backgrounds with and without pathology of the neuromotor, cardiopulmonary, musculoskeletal and integumentary systems. Prerequisite: year 1 Fall courses.
1 credit Lecture, Laboratory

HAY 571 Physical Therapy Case Studies II

Requires the development of examination, evaluation, and intervention plans for assigned patients in an acute care setting under faculty mentorship. Utilizes patients from the pediatric, oncology, general medicine, AIDS, neurological and surgical units. Requires students to manage time, delegate responsibility, document efficiently, perform appropriate discharge planning, and justify clinical decisions at each step in this process. Requires student group presentations with defense of clinical decisions for assigned case studies at the

end of the integrative week. Prerequisite: year 1 courses.
1 credit Lecture, Laboratory

HAY 572 Physical Therapy Case Studies III

Third phase in a 3-course sequence designed to integrate course material throughout the first two years of the program curriculum. With each case study course, the demand on students for synthesis and integration will increase. Faculty and lab assistants involved in year 2 will design and mentor activities and case studies that require students to examine, evaluate, determine a differential diagnosis, prognosticate and develop and implement intervention strategies for case studies of all ages from diverse cultural backgrounds with complex neuromotor, cardiopulmonary, musculoskeletal, and/or integumentary pathology/dysfunction. Prerequisites: all courses in years 1 and year 2
1 credit Lecture, Laboratory

HAY 576 Clinical Decision Making

Explores various theories and concepts of clinical decision-making and physical therapy diagnosis. Clinical reasoning including hypothesis generation and refinement applied within the context of the NAGI Disablement Model and patient/client management model as outlined in The Guide to Physical Therapy Practice. Clinical cases will be used to explore the diagnostic practice patterns across the lifespan.
3 credits Lecture

HAY 580 Practicum

A limited number of students may enroll in 3-6 credits of independent study in research, education, clinical practice, or management/administration. Each practicum project is uniquely designed to meet the needs of the student. Mentored by faculty with expertise in the area of study. Acceptable projects must include design, implementation and analysis phases. 3-6 credits by permission of the Program Director.
3-6 credits Tutorial

HAY 595 Clinical Practice I

An eight-week course that provides students with their first full-time clinical experience. A licensed physical therapist is responsible for close supervision and guidance during the learning experience. Provides students with the opportunity to utilize the patient management model of care. Students participate in documentation, coordination of care and discharge planning. Students will perform reexaminations, measure patient outcomes, and modify interventions accordingly. Students will perform an inservice during this clinical experience. Prerequisite: year 1 courses
8 credits Clinical

HAY 596 Clinical Practice II

An eight-week course that provides students with their second full-time clinical experience. A licensed physical therapist is responsible for guidance and supervision during the learning experience. Provides students with the opportunity to utilize the patient management model of care. Students participate in documentation, coordination of care and discharge planning. Students will perform reexaminations, measure patient outcomes, and modify interventions accordingly. A written case study and an in-service are required by students during this clinical experience. Prerequisite: all courses in years 1 and 2
8 credits Clinical

HAY 597 Clinical Practice III

An eight-week course that provides students with their third full-time clinical experience. A licensed physical therapist is responsible for guidance and supervision during the learning experience. The students will provide direct patient care, collaborate with other health care professionals, coordinate care of patients, delegate and supervise support personnel, and promote wellness and prevention services. Students are able to incorporate outcome measures into the evaluation process and suggest specific measures useful for their particular clinical setting. Students will perform an inservice during this clinical experience. Prerequisite: years 1 and 2 courses and year 3 fall courses
8 credits Clinical

HAY 599 Clinical Internship

This is a sixteen-week full-time capstone clinical experience, supervised by a licensed physical therapist. Students are expected to render evidence-based practice and perform as entry-level physical therapists upon completion of this clinical. Students are expected to fully participate in all aspects of physical therapy's scope of practice including direct patient care, documentation, consultation, education, critical inquiry, and administration, as applicable to the clinical setting. In all aspects of this clinical practice, the student will be able to convert information needs into answerable questions and find the best evidence with which to answer these questions with maximum efficiency. Students will perform an inservice during this clinical experience. The students will also explore one area of interest outside of patient management through the completion of a project designed to meet the needs of the clinical practice and is coordinated by the PT program's ACCEs and the clinical site's CCCE. Prerequisite: all course work and clinical 1-3.
16 credits Clinical

HAY 601 Issues in Global Health Care

Examines theories of health and wellness in the context of national and international public health initiatives. Explores epidemiology of intrinsic and extrinsic high risk factors and the social and political context of professional practice. Current and projected roles of the physical therapist and other health care workers in evolving health care environments are explored, examining various health care models to determine the current impact on practice outcomes and to hypothesize future effectiveness.
2 credits Lecture

HAY 602 Issues in Health Care Administration

Provides an understanding of the role of manager/supervisor as it relates to the goals and objectives of a physical therapy practice or department. Topics include communication skills in business management; ethical decision making in physical therapy practice; delivery systems; legislation and regulation; business planning; marketing and public relations.
2 credits Lecture

HAY 610 Fitness and Wellness

Examines and integrates the principles of strength, endurance, speed and agility training to formulate a wellness screening and program design. These principles will be used as a framework to examine the physical therapist's role in women's health, occupational health and injury prevention, sports medicine (pre-, post-, and in-season), obesity and athletic programs for the mentally and physically challenged. Students will explore the evidence for various fitness techniques.
3 credits Lecture

HAY 611 Complementary and Alternative Approaches to Rehab and Wellness

Examines and integrates the principles of complementary and alternative approaches such as Pilates, Yoga, T'ai Chi, Acupuncture, and Feldenkris into physical therapy directed wellness programs. Explores the evidence for utilization of these techniques in selected patient populations.
3 credits Lecture

HAY 612 Sports and Exercise Nutrition

Integrates the concepts of nutrition, bioenergetics, and energy expenditure into a broad understanding of the role of nutrition in daily activity, wellness parameters, and exercise performance. Emphasis will be placed on the topics of macro- and micro- nutrients and their effects during exercise and training, nutrient bioenergetics, thermoregulation, ergogenic aids, body composition, energy balance and weight control, and optimal nutrition for healthy lifestyles.
3 credits Lecture

HAY 615 Applied Physiological Foundations of Exercise

Explores literature related to the physiological basis for exercise, in healthy and at risk populations, and in patients with disease, at the multi-system level. Moves from substrates and their effects on exercise, through metabolic processes, to energy systems. Identifies various exercise states, and explores the body's immediate response and long-term adaptation. Nutrition and its impact on movement will be detailed. Information from metabolic gas analysis will be coupled with other clinical tests and measures to design exercise programs. Culminates in the application of principles of exercise physiology in the prescription of exercise for health and prevention across the lifespan and in the treatment of various patients and at risk populations. Current research will provide the basis for examining the evidence underlying principles of exercise for various populations across the lifespan.
3 credits Lecture

HAY 616 Exercise Prescription

Presents issues related to exercise prescription for health, wellness and prevention in various healthy and at risk populations across the lifespan. Explores various physiological principles and topics in fitness and cardiopulmonary care through case studies. Examines various patient/client types and health and prevention settings (e.g. cardiac, high risk populations, obstetrics, occupational health and injury prevention, ergonomics, sports medicine (pre, post and in-season), obesity, athletic programs for the physically and/or mentally challenged, falls prevention in the elderly and cardiac fitness programs) and integrates general fitness. Prerequisites: HAY 615
3 credits Lecture

Program in Occupational Therapy Leading to the Bachelor of Science in Health Science/Master of Science in Occupational Therapy Degrees

Interim Program Director: Donna M. Costa

Academic Field Work Coordinator: Eva L. Rodriguez

Associate Professors: Pamela Block, Alfred G. Bracciano, Donna M. Costa, Beverly P. Horowitz, Karen S. Jacobs

Assistant Professors: Marta M. Daly, Karen B. DeChello, Jamie M. Geraci, Alexander Lopez, Eva L. Rodriguez, Kathleen V. Pfitzer, Elizabeth Vanner

Instructor: Carol K. Chamoff, Elin Schold Davis, Tami A. McGowan

The Department of Occupational Therapy offers an upper-division three year program leading to the Bachelor of Science in Health Science/Master of Science in Occupational Therapy Degrees.

This degree program has two entry dates; students may apply for January or July entry. Students who apply for January entry must have completed 57 college credits and may have one to two outstanding program specific prerequisites (1-8 credits). These outstanding prerequisites must be completed in the spring of the same year. All January admits take a reduced number of occupational therapy courses during the first year. Students who are interested in the traditional July entry must have all prerequisites completed by the start date of the program. Students who enter in either January or July, and remain in good standing, will graduate in June, three years post entry.

Occupational therapy is the art and science of directing an individual's participation in selected tasks to restore, reinforce and enhance performance in activities that are important and meaningful to their health and well-being. Reference to occupation in the title is in the context of an individual's goal directed use of time, energy, interest and attention. An occupational therapist's fundamental concern is the client's development and maintenance of the capacity to perform, throughout the life span and with satisfaction to self and others, those tasks and roles essential to productive living and to the mastery of self and the environment.

Occupational therapy provides service to those individuals whose abilities to cope with tasks of living are threatened or impaired by developmental deficits, the aging process, poverty, cultural differences, physical injury or illness, or psychological and social disability.

Occupational therapy serves a diverse population in a variety of settings, such as hospitals and clinics, rehabilitation facilities, long-term care facilities, extended care facilities, sheltered workshops, schools and camps, private homes and community agencies.

The Occupational Therapy Program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE); c/o AOTA, P.O. Box 31220, Bethesda, MD 20824-1220. ACOTE's phone number is 301-652-2682. Graduates of the program will be eligible to sit for the national certification examination for the occupational therapist, administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this exam, the individual will be an Occupational Therapist, Registered (OTR). In addition, most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT certification examination. A felony conviction may affect a graduate's ability to sit for the NCBOT certification examination or attain state licensure.

In addition to the baccalaureate and master's degrees, the school's Certificate of Professional Achievement in Occupational Therapy is awarded upon satisfactory completion of all required course work.

Admission Requirements

Candidates for the occupational therapy program must meet the upper-division admission requirements of the School of Health Technology and Management. The requirements may be fulfilled through previously completed college studies.

In addition to the general academic requirements of the School of Health Technology and Management, the Occupational Therapy Program requires candidates to meet the school's natural science requirements by successfully completing eight credits of biology, eight credits of chemistry, and eight credits of physics, all with laboratories and designated for science majors. Preference is given to those candidates who have completed science courses within the past ten years. A three credit Introduction to Psychology course and a three credit Abnormal Psychology course are required. Candidates must complete required course work by the end of the spring term of the year for which application is made. Preference is given to applicants with a grade point average of 3.0 or higher. A minimum of 40 hours experience observing occupational therapy treatment in two different settings (out-patient rehabilitation, developmental disabilities, acute care, nursing homes, and schools) under the supervision of an occupational therapist (OTR) is also required for admission to the program. The observation must be supervised and documented in writing by the occupational therapists. No more than 50% of the minimum 40 required experience hours can be completed at a place of employment. Current certification in cardiopulmonary resuscitation (CPR) and first aid are required.

Program Requirements

Occupational therapy students must complete the following course requirements of the School of Health Technology and Management.

Basic Science Courses/Other Health Technology and Management Courses

Course#	Title	Credits
HAS 300	Issues in Health Care	2
HAS 335	Medical Ethics	1
HAS 363	Computer Literacy for Health Professionals	1
HBA 561	Human Gross Anatomy	5
HBP 310	Pathology	3
HBY 350	Physiology	4

Professional Courses (Year One)

Course#	Title	Credits
HAO 310	Neuroscience	4
HAO 313	Introduction to Occupational Therapy	1
HAO 315	Foundations of Occupational Therapy	3
HAO 319	Kinesiology for Occupational Therapy	4
HAO 320	Life Span Growth and Development for Occupational Therapy	3
HAO 323	Mental Health Concepts	2.5
HAO 324	Psychosocial Theory and Practice	2.5
HAO 330	Occupational Therapy Theory and Practice in Pediatrics	4
HAO 374	Professional Behaviors I	1.5
HAO 385	Conditions in Occupational Therapy	2
HAO 396	Fieldwork IA*	1
HAO 491	Case Studies I	1

Professional Courses (Year Two)

Course#	Title	Credits
HAO 332	Occupational Therapy Theory and Practice in Adults	4
HAO 334	Acute Care	1
HAO 338	Substance Abuse and Occupational Therapy	2
HAO 340	Prosthetics and Orthotics	2
HAO 397	Fieldwork IB*	1
HAO 398	Fieldwork IC*	1
HAO 421	Physical Agent Modalities for the Occupational Therapist	1
HAO 430	Sensory Integration Theory and Practice in Occupational Therapy	2
HAO 440	Gerontology and Occupational Therapy	3
HAO 451	Introduction to Research for Occupational Therapy	1
HAO 485	Vision, Perception and Cognition	2
HAO 516	Assistive Technology/Rehabilitation Design for Occupational Therapy	2
HAO 518	Work Programs in Occupational Therapy	2
HAO 530	Community, Occupation and Health	3
HAO 531	Management Concepts	1
HAO 542	Patient Education	2
HAO 551	Research Design for Occupational Therapy	2
HAO 574	Professional Behaviors II	1
HAO 592	Case Studies II	2
HAO 596	Fieldwork Level IIA**	12

Professional Courses (Year Three)

Course#	Title	Credits
HAO 530	Community, Occupation and Health	3
HAO 532	Emerging Areas of Practice	2
HAO 534	The Occupational Therapy Manager	3
HAO 547	Grant Writing for Occupational Therapy	1
HAO 550	Statistics and Data Analysis for Occupational Therapy	3
HAO 552	Research Tutorial for Occupational Therapy	1
HAO 562	Principles of Instruction	3
HAO 575	Professional Transition Seminar	1.5
HAO 580	Special Topics in Occupational Therapy	2
HAO 585	Disability and Occupational Therapy	2
HAO 590	Independent Study in Occupational Therapy	2
HAO 593	Case Studies III	2
HAO 597	Fieldwork Level IIB*	12
HAO 598	Fieldwork Level IIC*	10

*Fieldwork Level IA, IB and IC are pre-clinical experiences and generally consist of observation and very limited hands on experience in mental health, physical disabilities, and pediatric settings. Each is a maximum of 40 hours in length.

**Fieldwork level IIA, IIB and IIC are full-time clinical experiences.

Courses

HAO 310 Neuroscience

Presents an integrated approach to the general principles of organization and function of the autonomic, peripheral and central nervous system. Presents principles in a Systems Approach to Neuroscience. The anatomy of a system is followed with its physiology, pathophysiology and clinical relevance to the occupational therapist. Clinical topics include neurological testing, control of posture and balance, pain, muscle tone and spasticity, feedback vs. feedforward control, reflex vs. voluntary control, control of reaching and locomotion, perception and learning. Prerequisites: HBA 461, HBY 350, HAO 319
4 credits Lecture

HAO 313 Introduction to Occupational Therapy

Introduces the history and essential aspects of occupational therapy. Examines philosophical base, definitions related to the practice, scope of practice and role delineations. Provides an orientation to professional organizations, statutes, and credentialing. Open to west campus students.
1 credit Lecture

HAO 315 Foundations of Occupational Therapy

Explores major theories and practice frameworks underlying contemporary occupational therapy practice. Reviews sociological and anthropological themes, as well as the impact of the delivery of health care services. Presents theoretical constructs of occupation, purposeful activity and occupational science. Introduces activity analysis, structured observation and documentation. Professional terminology will be studied.
3 credits Laboratory,Lecture

HAO 319 Kinesiology for Occupational Therapy

Explores the kinetics and kinematics of normal, purposeful human movement. Integrates knowledge of human anatomy, physiology, and physics and biomechanics of the human body. Evaluation procedures such as manual muscle testing and measurement of joint range of motion are studied. Emphasizes importance of human movement as it relates to human function in occupational roles.Prerequisite: HBA 461; Corequisite: HBP 310
4 credits Lecture, Laboratory

HAO 320 Life Span Growth and Development for Occupational Therapy

Provides students with knowledge of the major developmental theories and factors influencing the normal developmental process. Examines developmental norms and sequences and emphasizes physical (sensory and motor), cognitive, language and psychosocial tasks. Discusses cultural and environmental influences on development. The coursework covers the entire lifespan, from prenatal and child, through adolescence and adult life stages to dying and death.
3 credits Lecture

HAO 323 Mental Health Concepts

Explores the psychosocial aspects of disability as they affect the function of the individual, the family and the community. Includes lectures and presentations related to the recognition of psychosocial problems and how they can be better understood, minimized, or eliminated. Delineates the provision of mental health services across all levels of care. Discusses multicultural factors as they relate to mental illness and the recovery process. Exposes the student to the diagnoses and pharmacology of major psychiatric illnesses and reviews psychological theories. Interviewing skills are demonstrated and practiced in the lab sessions. Emphasizes the importance of group dynamics in the student's personal and professional growth. Focuses on the use of group theories, the structure and function of groups in treatment, the analysis of group treatment and group activities, and the therapeutic use of self.
2.5 credits Lecture, Laboratory

HAO 324 Psychosocial Theory and Practice

Offers increased understanding of the identification and treatment of psychosocial disabilities across the life span. Teaches major assessment tools and practice frameworks used in contemporary occupational therapy mental health practice and documentation skills. Presents additional therapeutic activities, their use and gradation in psychosocial practice. Addresses the history, practice and legislation concerning community mental health practice, psychiatric rehabilitation, and work with developmentally disabled populations.
2.5 credits Lecture, Laboratory

HAO 330 Occupational Therapy Theory and Practice in Pediatrics

Presents occupational therapy theories, assessments, and treatment processes as they pertain to current pediatric practice. Reviews the predominant models of current practice and integrates effective treatment interventions. Emphasizes abnormal development, acute and chronic medical conditions and their resulting effects on the central nervous system, orthopedic and musculoskeletal systems. Reviews major causes of disability, the etiology and prognoses. Discusses the impact on the family system and the cultural implications. Students learn to select and adapt age and developmental stage appropriate evaluation and treatment intervention strategies. Teaches students to analyze occupationally-based activities. Prerequisites: HAO 315, HAS 300, HAO 320, HBA 461, HAO 319, HBP 310, HBY 350; Corequisite: HAO 310
4 credits Lecture, Laboratory

*Fieldwork level IIA, IIB and IIC are full-time clinical experiences.

HAO 332 Occupational Therapy Theory and Practice with Adults

Focuses on the evaluation and treatment of adults with physical disabilities. Examines injury, illness, disease and the effects on occupational performance in the areas of work, self-care and leisure. Presents relevant occupational therapy theories and practice. Explores practice frameworks, evaluation/assessments, treatment interventions, selection of age-appropriate occupation-based activities, and activity analysis. Offers opportunity to refine documentation and clinical reasoning skills through written and verbal assignments. Prerequisites: HBA 461, HBP 310, HBY 350, HAO 310, HAO 319, HAO 320, HAO 385

4 credits Lecture, Laboratory

HAO 334 Acute Care

This course covers the occupational therapist's scope of practice, as well as the current assessment, treatment, and documentation methods utilized by occupational therapists in an acute care setting. Students are introduced to high technology equipment found in an acute care setting, i.e. life support, ICU, CCU, PCU, and NICU monitoring devices. Areas discussed include acute care risk factors, the complicated diagnoses often seen in this setting, the role of occupational therapists within this setting, frames of references and treatment techniques, modalities utilized.
Prerequisites: HBA 461, HBP 310, HBY 350, HAO 310, 319, 320, 323, 324, 330, 332, 385

1 credit Lecture

HAO 338 Substance Abuse and Occupational Therapy

Utilizes a life-span approach to examining the physiological, psychological and societal effects of substance abuse on the individual and their family system. Reviews the major categories of drugs, specific drugs in each category, and the effects and withdrawal symptoms. Discusses major theories of substance abuse and philosophies, treatment models, and age specific interventions. Emphasizes the role of the occupational therapist in the identification and evaluation of the individual using/abusing substances. Students learn to design group and individual treatment interventions for specific populations.
Prerequisites: HAS 300, HAO 320, HAO 323, HAO 324, HAO 330 and HAO 385; Corequisite: HAO 332

2 credits Lecture

HAO 340 Prosthetics and Orthotics

Utilizes lecture, discussion and laboratories to teach students about the design, biomechanical principles, fit, function, use, care and patient education involved with upper extremity orthotics. Although there is an emphasis on the design, fabrication and use of upper extremity orthotics, students are introduced to upper and lower extremity prosthetic devices, as well as the use of splints in burn care.
Prerequisites: HBA 461, HBP 310, HBY 350, HAO 310, HAO 319, HAO 330, HAO 332, HAO 385 Corequisite: HAO 421

2 credits Lecture, Laboratory

HAO 374 Professional Behaviors I

Focuses on expectations of professional behavior at fieldwork sites. Integrates reflective journals and professional portfolio to document clinical competence. Examines the nature of the supervisory process and how to maximize the use of clinical and administrative supervision. Explores cultural competency and the scope of diversity in healthcare.

1.5 credits Lecture, Laboratory

HAO 385 Conditions in Occupational Therapy

Provides foundation of clinical diagnoses, symptomatology, and prognosis of common medical conditions across the life span. Emphasizes the impact of disease on society, families and individual physical, cognitive and emotional function.

2 credits Lecture

HAO 396 Fieldwork IA

The first of three introductory level clinical experiences. Offers opportunity to identify symptomology, observe treatment interventions, and formulate treatment plans in a mental health setting. Promotes effective communication skills used with patients and professionals. Uses reflective journals to monitor development of professional behaviors and skills.

1 credit Clinical

HAO 397 Fieldwork IB

The second of three introductory level clinical experiences. Offers opportunity to identify symptomology, observe treatment interventions, and formulate treatment plans in a pediatric practice setting. Promotes effective communication skills used with patients and professionals. Uses reflective journals to monitor development of professional behaviors and skills.
Prerequisites: HAO 310, 320, 330, 323, 324, 374, 385

1 credit Clinical

HAO 398 Fieldwork IC

The third of three introductory level clinical experiences. Offers opportunity to identify symptomology, observe treatment interventions, and formulate treatment plans in an adult physical disabilities practice setting. Promotes effective communication skills used with patients and professionals. Uses reflective journals to monitor development of professional behaviors and skills. Prerequisites: HAO 310, 320, 323, 324, 332, 374, 385

1 credit Clinical

HAO 421 Physical Agent Modalities for the Occupational Therapist

Presents physical agent modalities utilized as adjuncts to occupational therapy treatment. Reviews therapeutic applications of heat and cold, ultrasound, paraffin, TENS and functional electric stimulation. Provides opportunity to practice applications. Addresses physiological effects of physical agent modalities and their clinical uses and contraindications.

1 credit Lecture, Laboratory

HAO 430 Sensory Integration Theory and Practice in Occupational Therapy

Enhances basic knowledge and skills regarding sensory integration theory and techniques. Identifies types of sensory integrative dysfunction, reviews approaches to clinical assessment, outlines characteristics of both direct and indirect modes of intervention, and addresses the issue of effectiveness research. Prerequisites: HAO 310, HAO 315, HAO 320, HAO 330

2 credits Lecture

HAO 440 Gerontology and Occupational Therapy

Focuses on the role of occupational therapists with older adults and families across the continuum of care. Addresses the influence of aging processes on physical, sensory, and cognitive function and their relationship to functional capabilities. Discusses psychosocial aspects of aging, and how environment, culture, and values impact lifestyle and occupational performance. Theories, issues, and clinical skills specific to practice in geriatric rehabilitation, home health care, long term care, adult day care programs, hospice, and community practice, including wellness and prevention programs are addressed. The role of practitioners with older adults with Alzheimers disease and related dementias, lifestyle redesign, the use of assistive technology to promote safety and functional capability, and the role of occupational therapy with the elderly driver is emphasized. Discusses the role of occupational therapy in supporting older adults health, quality of life and community living. Students learn methods of assessment, use of EMB to help guide treatment, interdisciplinary approaches of providing treatment and methods of utilizing community resources to maximize the functional capabilities of older adults.

3 credits Lecture, Laboratory

HAO 451 Introduction to Research for Occupational Therapy

Provides a foundation for future professional and scholarly activities and stresses the importance of research for informed practice decisions. Students learn to review published, peer-reviewed research, identify research topics of interest, and implement the literature review process. Students work collaboratively to develop research questions and hypotheses and to review literature pertinent to a topic. Requires the CORIHS human subjects research training. Emphasizes professional writing skills for publications and professional presentations.

1 credit Lecture

HAO 485 Vision, Perception and Cognition

Provides students with theoretical rationale and necessary skills to evaluate and treat a wide range of visual, perceptual and cognitive task components. Through a combination of lecture, demonstrations, readings and assignments, students will evaluate patients with visuocognitive dysfunction. Presents a variety of treatment approaches/techniques that can improve functional performance and outcome.

2 credits Lecture

HAO 490 Independent Study

An elective learning experience that combines clinical observation with an occupational therapist in a practice setting, with faculty mentored learning in a specialty area of the student's choice.

1.5 credits Tutorial

HAO 491 Case Studies I

This seminar-style course introduces the student to clinical reasoning skills through case study analysis. Students will be given basic information about a variety of clinical cases, and then in small groups will analyze data, obtain additional information, develop treatment intervention strategies, and then present cases in written and verbal formats with its accompanying rationale for their decisions. Prerequisites: HAO 315, 320, 323, 324

1 credit Seminar

HAO 516 Assistive Technology/Rehabilitation Design for OT

Centers on adapting the environment to improve the client's quality of life. Examines the therapist's ability to help the patient reintegrate into society. Areas covered include the Americans with Disabilities Act, mobility, (power and manual), seating/positioning systems, adapted toys, augmentative communication systems, computer access, environmental control units, independent living aids, and vocational adaptations.

2 credits Lecture

HAO 518 Work Programs in Occupational Therapy

Ergonomics consulting, welfare to work services and ticket to work services have been identified as emerging practice areas for occupational therapists. Offers opportunity to learn basics of this practice area including knowledge of ergonomics, work hardening, functional capacity evaluations, and vocational programs. Presents information about the federal regulations for work-related programs, and the professional certification requirements for this practice area. Prerequisites: HAO 332, 385, 485

2 credits Lecture

HAO 530 Community, Occupation and Health

Presents the importance of occupation as a precursor to health, and of occupational therapy as a health promoting profession. Examines the theories and applications of occupational science through a review of the professional literature and class discussion. This occupational perspective of health will be the foundation for each student's design of a community-based practice program. Reviews social theories, socio-cultural and socio-political trends that impact the individual's health status and the delivery of health care services. Offers experience in designing/administering needs assessments in the community, and in organizing outcome data.

3 credits Lecture

HAO 531 Management Concepts

Introduces the student to the practices and theories of health care management. Presents an overview of management concepts, techniques, and service management functions. Prerequisites: successful completion of undergraduate Occupational Therapy curriculum.

1 credit Lecture

HAO 532 Emerging Areas of Practice

Discusses the delivery of occupational therapy services in emerging areas of practice. Provides students with alternative models of service delivery and occupational therapy prac-

tice. Explores role development and delineation; ethical practice; malpractice; liability concerns; insurance reimbursement; scope of practice and licensure statutes related to emerging areas. Prerequisites: HAO 323, 324, 330, 332, 440, 530
2 credits Lecture

HAO 534 The Occupational Therapy Manager

This course builds on previously learned management concepts examining in greater detail the specific responsibilities of the manager of occupational therapy services. Students will learn the mechanics of designing and implementing an occupational therapy department, program or practice. Financial, legal and administrative issues will be discussed, along with marketing strategies. Lectures and class discussions will prepare the student for the culminating course assignment of designing a unique occupational therapy practice. Prerequisite: successful completion of undergraduate Occupational Therapy curriculum.
3 credits Lecture

HAO 542 Patient Education

Provides working knowledge of the theories, approaches, and procedures utilized in communicating health and disease information to patients, their families, collateral staff and the community at large. Concepts of health, disease, and health promotion are examined, along with the health belief models. Further develops the students' ability to communicate effectively with a wide variety of audiences. Topics include evaluation of literacy, design of instructional materials, evaluating audiovisual materials, health promotion strategies, marketing educational interventions, and measuring outcomes of interventions. Lectures, learning activities and classroom presentations will be utilized to meet the course objectives. Prerequisites: successful completion of undergraduate Occupational Therapy curriculum.
2 credits Lecture

HAO 547 Grant Writing for Occupational Therapy

Presents students with the practical skills needed to transform pilot research and program development projects into full-scale grant proposals. Discusses the beginning of the grant writing process, identifying resources, determining funding priorities, and how to prepare a competitive grant proposal to obtain funds from public or private sources at the federal, state and local levels.
Prerequisites: HAO 551, HAO 552, HAO 590
1 credit Lecture

HAO 550 Statistics and Data Analysis for Occupational Therapy

Presents fundamentals of statistics and data analysis. Topics include descriptive statistics, statistical inference, tests for experimental comparisons, correlation, regression, and nonparametric tests. Students learn to use available computer programs for data management and statistical analysis. Discusses validity and reliability of various statistical techniques. Corequisite: HAO 552 Prerequisites: HAO 551
3 credits Lecture

HAO 551 Research Design for Occupational Therapy

Provides a foundation for future professional and scholarly activities, stressing the importance of national, international, and evidenced-based research for informed practice decisions. Explores research methods and the analytical skills needed to review research articles. Students critique published peer-reviewed research as well as identifying research topics of interest. The literature review process is implemented. Students work collaboratively to develop research questions and hypotheses while designing a beginning-level research project. Integrates the importance of ethics in research, institutional review board processes and human subjects research training. Emphasizes oral communication and professional writing skills for publication and professional presentations as students prepare and present the beginning segments of their project proposal. Prerequisite: successful completion of undergraduate Occupational Therapy curriculum.
2 credits Lecture

HAO 552 Research Tutorial for Occupational Therapy

Offers the opportunity to apply and demonstrate knowledge of research methodology by conducting, designing or participating in a research project under the mentorship of experienced clinicians. Students begin to develop their research proposals by identifying topical areas and formulating hypotheses within small groups. They are expected to demonstrate competencies in identifying and evaluating conclusions from theory and available data in relation to questions of practice .Prerequisites: HAO 551
1 credit Tutorial

HAO 562 Principles of Instruction

Examines theories of adult learning and education. Focus on principles of curriculum design, various curriculum models, and instructional methods used in various educational settings including professional education, professional development, work place learning and community education. Reviews evaluation and measurement methods. Students design course objectives and outcomes. Discusses elements of successful oral presentations and effective use of instructional media. Prerequisites: Open to third year OT students
3 credits Lecture

HAO 574 Professional Behaviors II

Builds on previously learned material covered in Professional Behaviors I. Students will work on more advanced documentation and communication skills required for entry-level practice. Provides opportunity to discuss professional behavior expectations from their clinical fieldwork assignments. Use of the reflective journal to enhance professional development, and the continuation of the professional portfolio will assist students in developing and documenting their clinical competence. Explores the supervisory process in greater detail, in the context of its use for personal and professional growth. Discusses the role of the occupational therapy assistant as a colleague and collaborator. Continues to emphasize the importance of life-long learning. Lectures, role-plays, presentations and experiential activities will be used to achieve learning outcomes. Prerequisite: successful completion of undergraduate Occupational Therapy curriculum
1 credit Lecture

HAO 575 Professional Transitional Seminar

Discusses issues related to transition of student to entry-level practitioner role. Presents information on licensure, certification exam preparation, NBCOT certification, AOTA specialty examinations, models of supervision, mentoring, job search strategies, marketing skills, malpractice, continuing competency, professional organizations, networking and career goal planning.
Prerequisite: Open to third year Occupational Therapy students
1.5 credits Seminar

HAO 580 Special Topics in Occupational Therapy

Offers students the opportunity to explore and expand knowledge and skills in a practice area of specific interest.
Prerequisite: Open to third year Occupational Therapy students
2 credits Lecture

HAO 585 Disability and Occupational Therapy

Introduces a social model of disability and explores the ethical and psychological issues faced by people with disabilities across their lifespan. Presents historical analysis, healthcare discourse, and cultural critique to understand the evolution of health practice, cultural beliefs and social structures influencing the treatments, services, and opportunities available to people with disabilities in the United States and internationally. Offers students a multi-layered understanding of the issues faced by people with disabilities and their families. Includes assigned readings, films, guest speakers, site visits, and one-on-one interactions with people with disabilities.
2 credits Lecture

HAO 590 Independent Study in Occupational Therapy

Students develop and/or implement their research projects under the mentorship of the course instructor and a faculty advisor who has expertise in their chosen topic. Literature reviews are completed and the project is prepared in a format appropriate for professional publication or presentation.
2 credits Tutorial

HAO 592 Case Studies II

This seminar-style course further develops the student's clinical reasoning skills. Building on experiences from Case Studies I, students are expected to synthesize knowledge gained from basic science and theory/practice courses, along with initial Level I fieldwork experiences to formulate treatment planning on hypothetical cases. Covers the current assessment, treatment, and documentation methods utilized by occupational therapists in a variety of physical disabilities settings. Students have the opportunity to work independently as well as in small groups when reviewing and discussing patient cases that concern areas such as complicated diagnoses, risk factors, the role of occupational therapy within the specific setting, frames of references, treatment techniques/modalities, discharge planning, safety issues, and follow up. Cases are presented in written as well as oral formats.
2 credits Seminar

HAO 593 Case Studies III

The third in a series of three clinical reasoning seminars, this course will focuses on the synthesis of all clinical and academic coursework in formulating a comprehensive plan of care. Greater emphasis on students responding spontaneously to case presentations in class, much as they would be expected to do in the clinical setting.
2 credits Seminar

HAO 596 Fieldwork Level IIA

Fieldwork IIA is an in-depth clinical experience in the delivery of occupational therapy services. According to AOTA guidelines, this fieldwork is designed to promote clinical reasoning and reflective practice; transmit values and beliefs that enable the application of ethics related to the profession; enable the student to communicate and model professionalism as a developmental process and career responsibility; and develop and expand a repertoire of occupational therapy assessments and interventions related to human occupation and performance. This first of three level II fieldwork experiences exposes the student to a variety of clinical conditions in a specific practice area for 12 weeks on a full time basis.
12 credits Clinical

HAO 597 Fieldwork IIB

This second of three clinical fieldwork experiences provides the occupational therapy student with opportunities to apply the knowledge and skills learned thus far in the curriculum. Students will be assigned to a fieldwork site for 12 weeks on a full time basis in a particular area of practice.
12 credits Clinical

HAO 598 Fieldwork IIC

Fieldwork IIC is the third of three in-depth clinical experiences in the delivery of occupational therapy services, designed to promote clinical reasoning and reflective practice; transmit values and beliefs that enable the application of ethics related to the profession; enable the student to communicate and model professionalism as a developmental process and career responsibility; and to develop competency and expand a repertoire of occupational therapy assessments and interventions related to human performance. The three Level II fieldwork experiences expose students to a variety of clinical conditions and practice areas across the life span. Students are assigned to a fieldwork site for 10 weeks on a full-time basis.
10 credits Clinical

Program in Athletic Training Education Leading to the Bachelor of Science Degree

Program Director: Kathryn A. Koshansky

Curriculum Director: Xristos K. Gaglias

Clinical Coordinator: Richard J. Boergers

Professor: Mark Wolff

Associate Professors: Kathryn A. Koshansky

Assistant Professors: Xristos K. Gaglias, Richard J. Boergers, Jeanine M. Engelmann, Jennifer L. Livingston, Stuart B. Cherney, Donna Meltzer, James Penna, Joseph C. White

Instructors: Lisa Cantara, Eric Lehnert, Yoshi Shiratori

The Athletic Training Education Program, offered by the School of Health Technology and Management is accredited by the Commission on Accreditation of Athletic Training Education (CAATE).

The program is designed for students interested in becoming a Certified Athletic Trainer (ATC ®). The ATC works with physicians and other medical personnel, employers, patients, parents, guardians, and athletic personnel in the development and coordination of efficient and responsive health care delivery systems. Athletic trainers are integral members of the health care team in secondary schools, colleges and universities, professional sports programs, sports medicine clinics, corporate/industrial, and other health care settings.

The athletic trainer's professional preparation is based on the development of specified educational competencies and clinical proficiencies. Through a combination of formal classroom and clinical instruction and clinical experience, the athletic trainer is prepared to provide health care within each of the following content areas: risk management and injury prevention; pathology of injuries and illnesses; clinical examination and diagnosis; acute care of injury and illness; pharmacology; therapeutic modalities; therapeutic and rehabilitative exercise; general medical conditions and disabilities; nutritional aspects of injury and illness; psychosocial intervention and referral; health care administration; and professional development and responsibilities. In addition, all students are required to fulfill their clinical education requirements under the direct supervision of an approved clinical instructor. Major emphasis is placed on the development of psychomotor skills in addition to cognitive knowledge. Required courses include practicum, laboratory, and clinical rotations. The curriculum prepares students for the National Athletic Trainers' Association Board of Certification Inc. (BOC) examination. Upon passing this examination, an individual may apply for certification by the New York State Education Department Office of Professions.

In addition to the baccalaureate degree, the school's Certificate of Professional Achievement in Athletic Training is awarded upon satisfactory completion of all required course work.

Admission Requirements

Candidates for the athletic training education program must meet the upper division admission requirements of the School of Health Technology and Management. The requirements may be fulfilled through previously completed college studies.

In addition to the general academic requirements for junior status in the School of Health Technology and Management, the program requires candidates to meet the school's natural science requirement by successfully completing 8 credits in biology (to include 4 credits in human physiology); 8 credits in chemistry; 8 credits in physics and 3 credits in calculus. Science classes must have labs.

The program also requires candidates to successfully complete each of the following courses with a grade of B or higher:

- HAL 205 Introduction to Athletic Training
- HAL 210 Emergency Care of Athletic Injuries
- HAL 300 Kinesiology
- ANP 300 Human Anatomy

Candidates must complete required course work by the end of the spring term of the year for which the application is made. Certification in cardiopulmonary resuscitation (CPR) at the professional level is required. A minimum of a 2.5 cumulative grade point average is required. Fifty observational hours with a certified athletic trainer is also required for admission.

Program Requirements

Athletic training students must complete the following required courses:

Professional Courses (Year One)

Course#	Title	Credits
HAL 305	Prevention and Care of Athletic Injuries	3
HAL 306	Prophylactic Taping, Bracing and Equipment Fitting	2
HAL 320	Evaluation and Assessment of the Lumbar Spine and Lower Extremity	3
HAL 321	Evaluation & Assessment - Head, Cervical Spine and Upper Extremity	3
HAL 345	Therapeutic Modalities	4
HAL 360	Rehabilitation of Athletic Injuries	4
HAL 370	Exercise Physiology	4
HAL 481	Athletic Training Practicum I	3
HAL 482	Athletic Training Practicum II	7
HAL 483	Athletic Training Practicum III	7

Professional Courses (Year Two)

Course #	Title	Credits
HAL 351	Research Methods and Biostatistics	3
HAL 355	General Medical Conditions and Disabilities in the Physically Active	4
HAL 435	Organization and Administration in Athletic Training	3
HAL 450	Senior Research Seminar in Athletic Training	3
HAL 460	NATABOC Certification Exam Primer	1
HAL 484	Athletic Training Practicum IV	3
HAL 485	Athletic Training Practicum V	7
HAL 486	Athletic Training Practicum VI	7
HAL 499	Athletic Training Teaching Practicum	2

Special Academic Requirements

To fulfill the upper-division writing requirement in athletic training the student will submit a writing sample to the program writing committee. The writing sample can be a term paper or research study. It must be accompanied by a form (available in the program office) signed by the student and by the instructor of the course for which the material was written. The deadline for submission of the writing sample is February 1 for students graduating in May or August, and October 1 for students graduating in December. If the writing sample is judged satisfactory by the program writing committee, the requirement is fulfilled. If the writing is judged unsatisfactory, the student is advised to seek help in writing skills from the University Writing Center.

Courses

HAL 205 Introduction to Athletic Training

Introduction to the health care profession of athletic training. The course explores the history and development of the profession and the concept of the sports medicine team, as well as medical terminology. Students will be required to complete a 50 hour clinical observation. Open to west campus students.
2 credits Lecture

HAL 210 Emergency Care of Athletic Injuries

Recognition and management of medical emergencies with emphasis on those conditions that are most commonly suffered by athletes. Successful completion of the course leads to Professional level Cardio-Pulmonary Resuscitation(CPR), Automated External Defibrillator (AED) and First Aid certification by the American Academy of Orthopedic Surgeons Emergency Care and Safety Institute. HAL 205 is recommended prerequisite. Open to west campus students.
3 credits Lecture, Laboratory

HAL 300 Kinesiology

The mechanical aspects of human motion and the structure and function of these motions in physically active individuals with or without pathological involvement. The student learns basic qualitative and quantitative clinical techniques used in identifying pathological movement. Open to west campus students.
4 credits Lecture, Laboratory

HAL 305 Prevention and Care of Athletic Injuries

A course addressing the areas of knowledge, skills, and values needed needed by an entry-level certified athletic trainer needs to identify injury and illness risk factors encountered by athletes and others involved in physical activity and to plan and implement a risk management and prevention program.
3 credits Lecture, Laboratory

HAL 306 Prophylactic Taping, Bracing and Equipment Fitting

The student will demonstrate the ability to select and apply preventative and protective taping, wrapping, splinting, bracing, and rehabilitative devices in order to prevent further injury. Additionally, the student will identify, select and fit general protective and sports specific protective athletic equipment.
2 credits Lecture, Laboratory

HAL 320 Evaluation and Assessment of Lumbar Spine/Lower Extremity

Focuses on principles of orthopedic examination and assessment. Emphazies the components of the comprehensive orthopedic physical examination, including history, inspection, palpation, functional testing, and special evaluation techniques of the lumbar spine and lower extremity. Designed to develop the student's psychomotor skills of orthopedic examination and assessment.
3 credits Lecture, Laboratory

HAL 321 Evaluation and Assessment/ Head, Cervical Spine and Upper Extremity

This course focuses on the principles of orthopedic examination and assessment. Emphasis will be placed on the components of the comprehensive orthopedic physical examination including: history, inspection, palpation, functional testing, and special evaluation techniques of the head, cervical spine and upper extremity. The laboratory course is designed to develop the student's psychomotor skills of orthopedic examination and assessment.
3 credits Lecture, Laboratory

HAL 345 Therapeutic Modalities

Knowledge, skills, and values needed by the entry-level certified athletic trainer to plan, implement, document, and evaluate the efficacy of therapeutic modalities in the treatment of injuries and illnesses of athletes and others involved in physical activity.
4 credits Lecture, Laboratory

HAL 351 Research Methods and Biostatistics

This course introduces the student to research in athletic training. The student learns about the research process, reads, comprehends and appreciates journal articles and begins writing a research proposal on a topic related to athletic training.
3 credits Lecture

HAL 355 General Medical Conditions and Disabilities in the Physically Active

Presents the pathophysiology and management of common diseases and other medical disorders or disabilities as they relate to athletes and the physically active.
4 credits Lecture

HAL 360 Rehabilitation of Athletic Injuries

Presents the principles and objectives inherent in rehabilitating athletic injuries. Discusses orthopedic rehabilitation fundamentals and specific conditioning and re-conditioning

techniques. Exposes the student to different types of exercise and equipment used in rehabilitation. Provides laboratory experience in applying various rehabilitation techniques.
4 credits Lecture, Laboratory

HAL 370 Exercise Physiology

Offers the student an understanding and appreciation of the metabolic and physiological adaptations of exercise. In-depth presentation of muscle, cardiac, and pulmonary physiology related to the healthy human at various states: rest, acute exercise, long term exercise under normal and high stress environmental conditions. Includes presentation of food sources, production of energy, and energy systems. Includes information on how training enhances strength, anaerobic power, aerobic power and physique while slowing the effects of aging and aiding in disease prevention. Prerequisites: ANP300; BIO 203
4 credits Lecture, Laboratory

HAL 435 Organization and Administration in Athletic Training

Examines various issues, policies, and procedures involved with the administration of athletic training in the traditional and nontraditional settings, including facility organization and design, legal liability issues, personnel management, equipment maintenance, budgeting, record keeping, health care services, counseling, and public relations.
3 credits Lecture

HAL 450 Senior Research Seminar in Athletic Training

Culmination of athletic training curriculum. Students complete and present their research study.
3 credits Seminar

HAL 460 NATABOC Certification Exam Primer

This course is designed to provide students with information regarding study techniques, test taking strategies, and application procedures for the National Athletic Trainers Association Board of Certification (NATABOC) certification exam. Students will practice and prepare for successful completion of the written, simulation and the practical sections of the NATABOC certification exam.
1 credit Lecture

HAL 475 Athletic Training Teaching Practicum I

Students assist faculty members teaching Athletic Training classes. In addition to working as tutors during instructional periods, students have regular conferences with a faculty supervisor. Students may not serve as teaching assistants in the same course twice.
2 credits Tutorial

HAL 476 Athletic Training Teaching Practicum II

Advanced students assist faculty members teaching Athletic Training classes. In addition to working as tutors during instructional periods, students have regular conferences with a faculty supervisor. Students may not serve as teaching assistants in the same course twice.
2 credits Tutorial

HAL 481 Athletic Training Practicum I

Assignments in clinical settings related to the students' area of study in prevention and care of athletic injuries, prophylactic taping, bracing and equipment fitting. Students are given the opportunity to observe and integrate skills under the supervision of a certified athletic trainer. Students participate in a laboratory setting that re-evaluates students' skills through patient interaction, psychomotor and scenario simulations.
3-6 credits Clinical

HAL 482 Athletic Training Practicum II

Assignments in clinical settings related to the students' area of study in evaluation of athletic injuries. Students are given the opportunity to observe and integrate skills under the supervision of a certified athletic trainer. Students also participate in a laboratory setting that re-evaluates students' skills through psychomotor and scenario simulations. Provides grand rounds forum.
7 credits Clinical

HAL 483 Athletic Training Practicum III

Assignments in clinical settings related to the students' area of study in therapeutic modalities. Students are given the opportunity to observe and integrate skills under the supervision of a certified athletic trainer. Students participate in a laboratory setting that re-evaluates students' skills through psychomotor and scenario simulations. Provides grand rounds forum.
7 credits Clinical

HAL 484 Athletic Training Practicum IV

Assignments in clinical settings related to the students' area of study in prevention and care of athletic injuries, prophylactic taping, bracing, equipment fitting, and evaluation and assessment. Students are given the opportunity to observe and integrate skills under the supervision of a certified athletic trainer.
3-6 credits Clinical

HAL 485 Athletic Training Practicum V

This course offers assignments in clinical settings related to the students area of study (Rehabilitation of Athletic Injuries). This course will give the student the opportunity to observe and integrate skills under the supervision of a Certified Athletic Trainer. The student will also participate in a laboratory setting that will re-evaluate the students previous skills through psychomotor and scenario simulations. This meeting time will also act as a venue to discuss current situations arising at the various sties that will provide for a grand rounds forum.
7 credits Clinical

HAL 486 Athletic Training Practicum VI

This course offers assignments in clinical settings related to the students area of study (General Medical Conditions & Disabilities). This course will give the student the opportunity to observe and integrate skills under the supervision of a Certified Athletic Trainer as well as various rotations through Physicians practices. The student will also participate in a laboratory setting that will re-evaluate the students previous skills through psychomotor and scenario simulations. This meeting time will also act as a venue to discuss current situations arising at the various sites that will provide for a grand rounds forum.
7 credits Clinical

HAL 499 Athletic Training Teaching Practicum

Advanced students assist faculty members teaching Athletic Training classes. In addition to working as tutors during instructional periods, students have regular conferences with a faculty supervisor. Students may not serve as teaching assistants in the same course twice.
2 credits Tutorial

Program in Adapted Aquatics Leading to a Minor

Program Director: Peter G. Angelo

Associate Professor: Peter G. Angelo

Instructors: Jennifer A. Champagne, Gregory W. Laub, Winston Lee, Jeannean M. Mercuri

The field of adapted aquatics uses water as a medium for the rehabilitation of a great variety of muscular, neuromuscular, and neurological problems. Lectures in the Adapted Aquatics Program are presented by Health Sciences Center professionals, who are experts in their fields, such as pediatrics, geriatrics, cardiology, internal medicine, occupational therapy, orthopedics, orthotics, pharmacology, physical therapy, respiratory care, and hydrotherapy.

The Minor in Adapted Aquatics offers coursework that promotes career options in the health sciences. The specialized academic background and applied instructor training provide students with skills needed for careers in rehabilitation, and offers experiences relevant for admission to graduate programs in the health professions. The Adapted Aquatics Minor allows students to receive a variety of credentials, licenses, and certifications that are mandated for individuals working in this complex and specialized field. Credentials include Adapted Aquatics Aide Training; Adapted Aquatics Instructor Training; American Red Cross Water Safety Instructor; American Red Cross Lifeguard Training; Basic Life Support for the Health Care Provider; CPR for the Professional Rescuer; Automated External Defibrillation Certification; American Red Cross and American Heart Association CPR Instructor Certification; and American Red Cross Responding to Emergencies Instructor Certification. The minor is designed to include the variety of interrelated courses necessary for a person to be fully certified to work at any aquatic facility in the country.

Admission Requirements

Admission to the minor is by permission of the program director. It is preferred that students declare their intent to minor in adapted aquatics no later than the beginning of the sophomore year.

Program Requirements

Course#	Title	Credits
HSQ 121	Intermediate Swimming	1
HSQ 221	Lifeguard Training I	2
HSQ 222	Lifeguard Training II	2
HSQ 223	Water Safety Instructor	2
HSQ 270	Emergency Response, CPR, and Personal Safety	3
HSQ 271	Instructor of Cardiopulmonary Resuscitation	2
HSQ 272	Instructor of First Aid	2
HSQ 325	Instructor of Adapted Aquatics I	2
HSQ 326	Instructor of Adapted Aquatics II	2
HSQ 329	Fieldwork in Adapted Aquatics Instruction*	1
HSQ 475	Adapted Aquatics Teaching Practicum I	2
HSQ 476	Adapted Aquatics Teaching Practicum II	2

Courses

HSQ 121 Intermediate Swimming

Designed to equip swimmers with detailed strokes and water skills.
1 credit Laboratory

HSQ 221 Lifeguard Training I

The first in a two-semester sequence leading to certification as an American Red Cross lifeguard. Course content includes elementary rescue techniques, boating and equipment rescues, and swimming rescues.
2 credits Laboratory

HSQ 222 Lifeguard Training II

Preparation for the Red Cross certification in lifeguard training. The material includes requirements and responsibilities of lifeguards, selection and training, preventive lifeguarding, emergency procedures, records and reports, equipment, health and sanitation, water rescues, search and recovery, and environmental conditions.
2 credits Laboratory

HSQ 223 Water Safety Instructor

A course designed to help the student meet the requirements for certification as a Red Cross Water Safety Instructor.
2 credits Lecture, Laboratory

HSQ 270 Emergency Response, CPR and Personal Safety

An American Red Cross and American Heart Association certification course designed to develop skills and knowledge for the immediate care given to an individual who has been injured or taken ill. The course issues certification in emergency response first aid, professional CPR training, and the use of automated defibrillators. Presentations include legal

*Repeated two times for a maximum total of three credits

issues; disease transmission and prevention; wound care; drugs, alcohol, and other substance abuse; cardiovascular and respiratory disease; AIDS and STD education. Certifications issued meet the required standards for admission to undergraduate and graduate health sciences programs. An extra-fee course.
3 credits Lecture

HSQ 271 Instructor of Cardiopulmonary Resuscitation

Covers the Red Cross certification requirements for Instructor of CPR for the Professional Rescuer and Instructor of Basic Life Support Cardiopulmonary Resuscitation. The course includes teaching methods and protocols of cardiopulmonary resuscitation, including infant, child, adult and two rescuer procedures.
2 credits Lecture

HSQ 272 Instructor of First Aid

Covers the Red Cross certification requirements for Instructor of Responding to Emergencies Aid. The course includes teaching methods and protocols for effective first-response techniques in various emergencies, including treatment of bleeding, burns, fractures and dislocations, and sudden illness.
2 credits Lecture

HSQ 325 Instructor of Adapted Aquatics I

One course of a two-semester sequence in the adaptation of the aquatic environment and aquatic skills to teach the disabled, leading to instructor and/or aid certification in adapted aquatics. Focus on a wide spectrum of disabilities including physical, mental, emotional, and multiple disorders in children through adults. Consideration of motor movement and learning theories, development of normal versus impaired motor-cognitive skills, hydrodynamics and aquatic adaptation, and related anatomy, physiology, and disease etiologies. Class time is equally divided between lecture/recitation and clinical work in the swimming pool. The sequence may be completed in either order for certification.
2 credits Lecture

HSQ 326 Instructor of Adapted Aquatics II

Second course of a two-semester sequence of instructor training in the adaptation of the aquatic environment and aquatic skills for teaching the physically, mentally, emotionally, or multiple challenged, leading to instructor and/or aid certification in adapted aquatics. Focus on the general physiological and genetic etiologies of various disabilities as well as the commonly used surgical treatments, drug therapies, and prosthetic devices for the disabled. Class time is equally divided between lecture/recitation and clinical work in the swimming pool. The sequence may be completed in either order for certification.
2 credits Lecture, Laboratory

HSQ 329 Fieldwork in Adapted Aquatics Instruction

Provides the Adapted Aquatics Instructor or Aid candidate the possibility of concentrating on a specific disability. Students study full case histories and medical files and prescribed physical, occupational, and/or respiratory therapy regimens for specific disabled individuals. Students develop focused aqua-therapy and instructional aquatic regimens for the individual. May be repeated to a maximum of 3 credits.
1 credit Laboratory

HSQ 475 Adapted Aquatics Teaching Practicum I

Students assist faculty members teaching Adapted Aquatics and/or Emergency Response classes. In addition to working as tutors during instructional periods, students have regular conferences with a faculty supervisor. Students may not serve as teaching assistants in the same course twice.
2 credits Tutorial

HSQ 476 Adapted Aquatics Teaching Practicum II

Advanced students assist faculty members teaching Adapted Aquatics and/or Emergency Response classes. In addition to working as tutors during instructional periods, students have regular conferences with a faculty supervisor. Students may not serve as teaching assistants in the same course twice.
2 credits Tutorial

Division of Clinical Sciences

Department of Physician Assistant Education

Chair: Paul Lombardo

Vice Chair: Peter D. Kuemmel

Medical Director: Gail Cohan

Associate Professor: Darren S. Kaufman, Paul Lombardo

Assistant Professors: Robert M. Ansbach, David L. Brenner, Frank A. Brodzik, Jeanne M. Cavalieri, Donna A. Crapanzano, Marian I. Eskow, Donna Ferrara-McCord, Edward Giarrusso, Dale M. Janson, Lynn M. Keil, Maureen J. Kelly, Peter D. Kuemmel, Valerie A. Kuemmel, Claire Lokitis, James M. Mills, Benjamin W. Pace, Randy L. Parr, Diane Ranieri, Donald O. Reinauer, Michael P. Rodriguez, Patricia J. Sondgeroth, Richard N. Thailer, Lynn Timko-Swaim

Instructors: Lorraine S. Atkinson, Scott Baker, Denise M. Bolan, Lori B. Brooks, Guy A. Cassara, Rebecca Claudio-Morales, Frederick G. Deutcsh, Melanie M. Ingram, Stephen E. Lyons, Patricia W. McKeon, Timothy Mirando, Martin Morales, Sara K. Proctor, Bruce L. Rebold, Edward C. Savarese, Garry J. Schwall, Marzya Sdrewski-Thailer, Jeannine R. Smith, Kimberley Vonderlieth, Silas A. Williams

Program in Physician Assistant Education Leading to the Master of Science Degree

Program Director: Paul Lombardo

Medical Director: Gail Cohan

The department of physician assistant education currently offers a graduate program leading to the Master of Science degree and the school's Certificate of Professional Achievement for Physician Assistants. The program consists of approximately 110 weeks of pre-clinical and clinical instruction presented over a 27-month period.

The program educates skilled professionals who, with physician supervision, practice medicine in all specialties and settings. Emphasis is placed on preparing graduates to work with physicians across a wide range of primary and specialty care settings. Students learn to take medical histories, perform physical examinations, order/perform diagnostic procedures and develop patient management plans. Patient education, counseling, and health risk appraisal are also important aspects of physician assistant education and practice, as is preparation for responsibilities related to the prescribing of medications. Students and graduates are educated and employed in settings such as private and group practices, hospitals, managed care settings, nursing homes, rural and urban out-patient clinics, correctional facilities, medical research facilities and health administration.

Physician assistants (PAs) are well utilized in health care because of the accessible, quality, cost effective care they provide. The physician assistant profession's contribution to providing primary and specialty care services to underserved areas and populations is well recognized. In keeping with this commitment, PA education at Stony Brook is heavily directed toward community medicine involvement in the provision of medical services and graduates are encouraged to work in areas of medical need.

The physician assistant education program is fully accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) and the New York State Department of Education. Graduates are eligible to sit for the national certification examination for physician assistants, administered by the National Commission on Certification of Physician Assistants.

Admission Requirements

The program website, accessed through www.hsc.stonybrook.edu/shtm/, provides comprehensive information on the program. For questions that are not addressed by the website, please contact the program directly.

Candidates for the physician assistant education program must meet the admission requirements of the School of Health Technology and Management. The requirements may be fulfilled through previously completed college studies.

In addition to the general academic requirements for graduate status in the school, the department of physician assistant education specifies that fulfillment of the natural science requirement consists of completion of 11 or more credits in the biological sciences, including three credits in microbiology, completion of at least eight credits in chemistry, three credits in organic or biochemistry, and three credits in mathematics for a total of at least 25 credits in the natural sciences. Biology and chemistry courses must be those offered for science and/or pre-med majors. Preference will be given to applicants whose natural science coursework has been completed within the last seven years and who have completed prior coursework in anatomy and physiology. Certification in cardiopulmonary resuscitation (CPR) is required; ACLS is preferred.

The department also requires a minimum of one year of experience in direct patient/health related care, either full-time or through equivalent accumulation of 1,000 hours. Preference will be given to those candidates with direct patient care or a broad range of health related experience. This requirement can be fulfilled by paid or volunteer experience as a registered nurse, medic, corpsman, orderly, nurses' aide, medical technician, counselor in a health care setting, etc.

Our program participates in the CASPA (centralized application service for physician assistants). For an application please visit www.caspaonline.org or call (240) 497-1895.

Program Requirements

The following professional courses are required for successful completion of the Physician Assistant program:

Didactic Courses

Course#	Title	Credits
HAP 504	Professional Practice Issues	2
HAP 510	Clinical Laboratory Medicine	3
HAP 521	Clinical Medicine I	10
HAP 522	Clinical Medicine II	15
HAP 523	Clinical Medicine III	10
HAP 532	Diagnostic Imaging	2
HAP 534	Introduction to Clinical Psychiatry	3
HAP 540	Clinical Prevention and Population Health	1
HAP 551	Research Design and Evidence Based Medicine	2
HAP 561	Masters Project I	1
HAP 562	Masters Project II	1
HAP 563	Masters Project III	1
HAS 545	Ethics and Health Care	3
HBA 561	Human Gross Anatomy	5
HBH 510	Pharmacology: Principles and Practice I	2
HBH 511	Pharmacology: Principles and Practice II	4
HBP 511	Pathobiology	3
HBY 501	Physiology	4

Clinical Courses

Course#	Title	Credits
HAP 570	Internal Medicine Clerkship	5
HAP 571	Obstetrics and Gynecology Clerkship	5
HAP 572	General Surgery Clerkship	5
HAP 574	Emergency Medicine Clerkship	5
HAP 575	Psychiatry Clerkship	4
HAP 576	Medicine Preceptorship	5
HAP 577	Pediatric Preceptorship	5
HAP 579	Geriatrics Clerkship	5
HAP 580	Orthopedic Clerkship	4
HAP 581	Clinical Elective	4

Special Academic Requirements

In addition to the academic policies of the school, each of the following courses must be passed with a minimum grade of C- before a student is permitted to enter clinical clerkships:

Course#	Title	Credits
HBA 561	Human Gross Anatomy	5
HBH 510	Pharmacology: Principles and Practice I	2
HBH 511	Pharmacology: Principles and Practice II	4
HBP 511	Pathobiology	3
HBY 501	Physiology	4

Each of the following courses must be passed a minimum grade of C:

HAP 504	Professional Practice Issues	2
HAP 510	Clinical Laboratory Medicine	3
HAP 532	Diagnostic Imaging	2
HAP 534	Introduction to Clinical Psychiatry	3
HAP 540	Clinical Prevention and Population Health	1
HAP 551	Research Design and Evidence Based Medicine	2
HAP 561	Masters Project I	1
HAP 562	Masters Project II	1
HAP 563	Masters Project III	1
HAS 545	Ethics and Health Care	3

Clinical Medicine courses must be passed with a minimum grade of B-. Students must achieve a minimum grade of C- for each clinical clerkship/preceptorship/elective, maintain a minimum 2.5 cumulative grade point average for all clinical clerkships, and successfully complete the summative evaluation examination.

Preclinical and Clinical Course Descriptions

HAP 504 Professional Practice Issues

Provides information critical to understanding the development and organization of the physician assistant profession in the United States. Explores the dynamics of PA practice, including such issues as responsibilities to patients and the public, professional regulation and involvement, team care, cultural diversity, and developing trends in PA practice. Encourages the exploration, critiques, and evaluation of professional practice issues related to the quality, delivery and cost-effectiveness of our nation's health care system.
2 credits Lecture

HAP 510 Clinical Laboratory Medicine

Presents fundamental principles of laboratory medicines. Strengthens the student's ability to select, perform and interpret the results of basic clinical laboratory procedures to aid in formulating a preliminary diagnosis and management plan. The course is offered after students have acquired a foundation in human physiology and anatomy.
3 credits Lecture, Laboratory

HAP 521 Clinical Medicine I

Focuses on mastery of the knowledge, skills, and attitudes necessary to construct a comprehensive patient database and management plan. Students are introduced to, and become proficient in, medical interviewing and performing a physical examination. Emphasizes the process of synthesizing data to formulate a diagnostic plan through learning activities such as lectures, small group process, problem based learning, case studies, and clinical skills laboratories. Teaches data gathering and recording in the problem oriented medical record format. The diagnostic process is taught in an organ systems (or medical subspecialty) approach. Students learn to recognize and manage physical and mental health problems. Students are encouraged to think critically as an integral part of developing a logical, sequential and humanistic approach to their patient responsibilities and mastering medical information. The ultimate goal of these clinical medicine courses is to insure that students are optimally prepared to participate in the delivery of high quality medical care in both an in-patient and out-patient setting.
Prerequisites: HAP 504 and HBA 561 (minimum grade of C-)
10-16 credits Lecture

HAP 522 Clinical Medicine II

Focuses on mastery of the knowledge, skills, and attitudes necessary to construct a comprehensive patient database and management plan. Students are introduced to, and become proficient in, medical interviewing and performing a physical examination. Emphasizes the process of synthesizing data to formulate a diagnostic plan through learning activities such as lectures, small group process, problem based learning, case studies, and clinical skills laboratories. Data gathering and recording are taught in the problem oriented medical record format. The diagnostic process is taught in an organ systems (or medical subspecialty) approach. Students learn to both recognize and manage physical and mental health problems. Students are encouraged to think critically as an integral part of developing a logical, sequential and humanistic approach to their patient responsibilities and mastering medical information. The ultimate goal of these clinical medicine courses is to insure that students are optimally prepared to participate in the delivery of high quality medical care in both an in-patient and out-patient setting.
13-15 credits Lecture

HAP 523 Clinical Medicine III

Focuses on mastery of the knowledge, skills, and attitudes necessary to construct a comprehensive patient database and management plan. Students are introduced to, and become proficient in, medical interviewing and performing a physical examination. Emphasizes the process of synthesizing data to formulate a diagnostic plan through learning activities such as lectures, small group process, problem based learning, case studies, and clinical skills laboratories. Data gathering and recording are taught in the problem oriented medical record format. The diagnostic process is taught in an organ systems (or medical subspecialty) approach. Students learn to recognize and manage physical and mental health problems. Students are encouraged to think critically as an integral part of developing a logical, sequential and humanistic approach to their patient responsibilities and mastering medical information. The ultimate goal of these clinical medicine courses is to insure that students are optimally prepared to participate in the delivery of high quality medical care in both an in-patient and out-patient setting.
10-14 credits Lecture

HAP 532 Diagnostic Imaging

Provides an overview of common diagnostic imaging modalities and their indications, limitations, benefits and potential risks. Students learn how to utilize plain radiographs and other imaging studies in the diagnosis of disease with an emphasis on recognition of normal findings and their comparison to the abnormalities found in disease processes.
2 credits Lecture

HAP 534 Introduction to Clinical Psychiatry

Presents key principles of psychiatric evaluation and interviewing to include the mental status exam. Focuses on psychiatric problems seen in primary care, introduces the differential diagnosis and treatment of major psychiatric disorders such as anxiety, personality and mood disorders, psychosis, substance abuse, and somatoform disorders. Fosters an awareness of social patterns that exert an impact on mental functioning.
3 credits Lecture

HAP 540 Clinical Prevention and Population Health

Provide students with an understanding of health promotion, disease prevention, and population health across a spectrum of issues including chronic diseases management, emerging infectious diseases, emergency preparedness, disparities in health care services, and the impact of behavior and lifestyle choices. Students analyze these issues within the framework of the evidence base for practice, clinical prevention services, health promotion, health systems and health policy, and community aspects of practice.
1 credit Lecture

HAP 551 Research Design and Evidence-Based Medicine

Provides students with basic knowledge and skills needed to formulate research questions and hypotheses, develop research protocols, critically evaluate and analyze scientific and medical journals, and to conduct computerized searches and literature reviews. Describes principals of Evidence-Based Medicine and emphasizes various types of clinical questions and tools available to answer them. By the end of this course, the student will choose a proposed topic for their capstone project.
2 credits Lecture

HAP 561 Master's Project I

Students will work with a faculty advisor to share their clinical question and perform an initial literature search on a topic of interest (Identified in HAP 551). Topics should be well-focused, and may include psychological, economic or ethical issues in health care as well as diagnostic or treatment-related questions. Following review by a faculty committee, the student will write an initial draft to be used as a basis for the final paper.
Prerequisite: HAP 551
1 credit Tutorial

HAP 562 Masters Project II

Students will work with their faculty committee to refine the clinical question and revise the paper submitted at the end of Masters Project I. Emphasis will be placed on thoroughness of the literature search and clarity of the paper. By the completion of this course, students should have the paper in its final form, and have developed a draft of a formal Powerpoint presentation on the topic and process. Prerequisite: HAP 561
1 credit Tutorial

HAP 563 Masters Project III

Students will revise the Powerpoint presentation submitted at the end of Masters Project II with input from their faculty committee, who will guide them in developing a concise, professional-appearing product, suitable for presentation at a professional conference. Students will present this to the faculty and other members of the class, and will be evaluated on the content, visual, and oral components of their work. Prerequisite: HAP 562
1 credit Tutorial

HAP 570 Internal Medicine Clerkship

Provides practical clinical experience in caring for adult hospitalized patients on a medical service. Strengthens the students skills in developing a comprehensive database with regard to a wide variety of common inpatient medical problems, stressing mastery of cognitive and affective information that enables the student to recognize normal and assess deviation from normal, and effectively consult and refer. Exposure to out-patient care is often included. Students learn to address personal and social issues that influence the care of the medical patient.
Prerequisite: Successful completion of preclinical year courses.
5 credits Clinical

HAP 571 Obstetrics and Gynecology Clerkship

Provides students with practical clinical experience in the differential diagnosis, evaluation, management, and consultation and referral for normal and abnormal conditions in obstetrics and gynecology. Students will gain skills in obtaining patient histories, physical diagnosis and medical decision making through exposure to a broad base of patients with a wide variety of personal and social issues that influence patient care. Prerequisite: Successful completion of preclinical year courses.
5 credits Clinical

HAP 572 General Surgery Clerkship

Provides students with practical clinical experience in the evaluation and management of surgical patients. Through exposure to a broad base of surgical patients, students will master the knowledge, attitudes and skills necessary to obtain focused patient histories and physical exams, construct a dif-

ferential diagnosis, make sound medical decisions, and effectively consult and refer. Students will learn to address a variety of personal and social issues that influence the care of the surgical patient. Prerequisite: Successful completion of preclinical year courses.
5 credits Clinical

HAP 574 Emergency Medicine Clerkship

Provides students with practical clinical experience in the medical care of acutely ill or injured patients. Students will enhance skills in obtaining focused patient histories, performing focused physical examinations, mastering emergency medical management and decision making, and effective consultation and referral. Emphasis is placed on student recognition of life threatening situations and the response to such situations. Students will learn to address a wide variety of personal and social issues that influence the care of the emergency medical patient. Prerequisite: Successful completion of preclinical year courses.
5 credits Clinical

HAP 575 Psychiatry Clerkship

Provides students with practical experience in the recognition, evaluation and management of patients with mental illness. Through clinical interaction with mental health patients and workers, students will develop an understanding of the biological and psychosocial factors that influence a variety of psychiatric conditions, and effectively consult with other professionals and refer patients to the support services that are required to optimize the care of the psychiatric patient. Students will learn to address a wide variety of personal and social issues that influence the care of this patient population. Prerequisite: Successful completion of preclinical year courses.
4 credits Clinical

HAP 576 Medicine Preceptorship

Provides students with practical clinical experience working with the ambulatory medical patient. This preceptorship augments and develops directed data collection skills emphasizing a wide range of primary care medical problems and their management. Cognitive and affective skills that enable the student to recognize normal and assess abnormal findings and effectively consult and refer are a key aspect of learning during this experience. Students will learn to address a wide variety of personal and social issues that influence the care of the medical patient. Prerequisite: Successful completion of preclinical year courses.
5 credits Clinical

HAP 577 Pediatric Preceptorship

Provides students with practical clinical experience working with ambulatory pediatric patients. Through exposure to a wide variety of primary care pediatric problems, students will develop directed data collection and patient management skills and learn how to effectively consult and refer. The preceptorship stresses those cognitive and affective skills that enable the student to recognize normal findings and assess abnormal findings. Students will learn to address a wide variety of personal and social issues that influence the care of the pediatric patient.
Prerequisite: Successful completion of preclinical year courses.
5 credits Clinical

HAP 579 Geriatrics Clerkship

Provides students with practical clinical experience in working with elderly patients. Augments and strengthens students skills in developing a thorough database and enhances student understanding of when to request a consultation or make a referral. Students work with a wide variety of common geriatric problems and learn how to appropriately modify their management approach to the indications, limitations, and methodology of diagnostic procedures and therapeutic regimens in the elderly. Students will also learn to address a wide variety of personal and social issues that influence the care of the geriatric patient. Prerequisite: Successful completion of preclinical year courses.
5 credits Clinical

HAP 580 Orthopedic Clerkship

Provides students with practical experience in the care of patients with musculoskeletal disorders and acute injuries in the primary care setting. Students will develop the knowledge, attitudes and skills necessary to obtain directed patient histories, perform focused physical exams, make sound clinical decisions, and effectively consult and refer through exposure to patients with a wide variety of orthopedic problems. Students will learn to address a wide variety of personal and social issues that influence the care of the orthopedic patient. Prerequisite: Successful completion of preclinical year courses.
5 credits Clinical

HAP 581 Clinical Elective

Provides students with the opportunity to explore an area of medical or surgical practice beyond basic required rotations. Students are encouraged to choose an area of emerging importance in health care and PA practice and/or a potential employment setting. This elective clerkship further augments and develops patient management skills in the chosen medical or surgical discipline and must be selected in consultation with the students program faculty advisor. Students will learn to address a wide variety of personal and social issues that influence the care of many patients. Prerequisite: Successful completion of preclinical year courses.
4 credits Clinical

Program in Emergency Medical Technician-Paramedic Training Leading to a Certificate

Program Director: Paul A. Werfel

Medical Director: Scott Johnson, M.D.

Assistant Professor: Paul A. Werfel

Lecturers: John Arline Jr., Malcolm D. Devine, Peter C. Flanagan Jr., Theodore J. LaMonica, Robert B. Marks, Henry M. Messana, William J. O'Connor, Yvonne Reyes, Michael G. Rubin, Brian P. Scarpati, Donna M. Stapleton, Lawrence M. Zacarese

The EMT-paramedic training program is a non-degree, non-credit program designed to train effective and compassionate paramedics in accordance with the 1998 standards established by the United States Department of Transportation. Upon successful completion of the program all students will be eligible to take examinations for certification as:

- New York State AEMT-4 Paramedic
- Nationally Registered EMT-Paramedic
- New York City MAC-EMS Paramedic

Certification in Advanced Cardiac/Pediatric Life Support and Basic Life Support is also part of the curriculum. The program, offered every year, consists of 556 hours of didactic training and 648 hours of clinical practicum in the emergency department, paramedic ambulance, CCU, ICU and other applicable venues.

Admission Requirements

Applicants must be 18 years of age or older, have a high school diploma, be a currently certified New York State EMT or AEMT and have EMS experience at or above the EMT level. Admission is based on a standardized written test of math and English skills, a written test of medical knowledge at the basic EMT level and a personal interview.

Continuing Professional Education

The School of Health Technology and Management recognizes its responsibility to provide continuing education and training to health care professionals and the community at large. To meet this responsibility the school offers a variety of courses and workshops.

The school provides faculty development and professional, executive, corporate, international and community health education. An important focus of the continuing professional education effort is aimed at calling upon experts from outside the University to provide a range of approaches and views to health related issues. Formats include conferences, workshops and specialized training.