



# 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 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.

The School offers baccalaureate, master's and doctoral degrees in both clinical and non-clinical areas that include athletic training, clinical laboratory sciences, 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), post professional program for Physician Assistants 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, EMT-paramedic, medical dosimetry, nuclear medicine, patient services training, phlebotomy, polysomnography, and radiologic technology.

## Goals and Objectives

Advances in technology require state-of-the-art equipment for training in these fields. The School of Health Technology and Management offers the most up-to-date, advanced equipment for training our health care graduates. In addition, advances in information technology and electronic medical records require that our students become familiar with the latest health care models. Our school is committed to the team approach in health care, and to the education and training of highly competent health care professionals who can assume leadership roles in diverse health care settings.

## Professional Program Admission

Students seeking admission to the athletic training, clinical laboratory sciences, 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, occupational therapy, and respiratory care must have a minimum cumulative average of 2.5 and 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 licen-

sure) 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.

## Clinical 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 professional 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, 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 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       |

## 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  
Benedict 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, Stephen A. Vitkun

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

*Assistant Professors:* Sandeep Ailawadi, Michael J. Bonvento, Laura J. Borghardt, Cathy A. Cahill, Linda M. Cimino, Sharon A. Cuff, Leo J. DeBobes, Peter C. Flanagan Jr., Janos G. Hajagos, Cheryl Hochenberg, Anthony M. Indelicato, Robbye Kinkade, Olga Larios, Kristina Lucenko, Louis Mancuso, John T. Marchese, Patricia A. Wollam Martin, Monica Massaro, Carmen P. McCoy, Kathleen McGoldrick, Lindsay J. Meyer, Elaine Micali, Melinda Monteforte, Edward J. O'Connell, Stephanie Patterson, Nand Reland, Marianna Savoca, Joy E. Schabel, Andrew

Schaeffer, William Stanley, Kathleen A. Tyler, Marie Varela, Tamara E. Weiss, Joseph E. Whitton, Janet W. Youngblood, Deborah Zelizer

*Lecturers:* Joseph Balsamo, Nesly Beausoleil, John M. Esposito, Sebastian J. Galofaro, Ellen Malezsewski, Liane M. Dunne, Paul S. Reyes, Michele Rice-Nelson, James Colby Rowe, Marianne T. Russo

*Instructors:* Louis A. Corona, Katherine Sara Degen, Laurie Leverich, Randin S. Miller, Brian O'Grady

## Affiliated Faculty

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

*Professor:* (Clinical Laboratory Sciences) Craig A. Lehmann

*Associate Professor:* (Occupational Therapy) Pamela Block, Beverly P. Horowitz; (Pharmacology Science) Moises Eisenberg

*Assistant Professors:* (Physician Assistant Education) Donna A. Crapanzano, Donna Ferrara, Patricia Sondgeroth; (Clinical Laboratory Sciences) Deborah T. Firestone, Christine Pitocco; (EMT Paramedic) Paul Werfel; (Physical Therapy) Dawn Blatt, Sharon Martino

*Lecturers:* (Health Care Policy and Management) Carol M. Gomes

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, 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 may 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\*:

- 91 credits with a minimum grade point average of 2.0
- All D.E.C. requirements
- A minimum of 16 credits of D.E.C. E classified courses in the natural sciences.
- 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.

- 10 upper-division credits (300 and 400 level courses). Note: Can be met by courses meeting D.E.C., natural science, or elective requirements.
- 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. All students need a minimum of 91 credits and all requirements met by the end of the spring semester of their junior year to advance to the fall senior year curriculum.

## 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 (Health Maintenance Organizations).

| 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 sci-

ence/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.

Note: Preference is given to students who maintain an overall senior year GPA of 2.5, successfully complete all fall semester course work, and achieve NYS Emergency Medical Technician Certification before the start of the post-baccalaureate year.

| Course# | Title                                                                   | Credits |
|---------|-------------------------------------------------------------------------|---------|
| HAN 370 | Prehospital Care                                                        | 6       |
| HAN 472 | Weapons of Mass Destruction:<br>Nuclear, Biological and Chemical Agents | 3       |
| HAN 473 | Emergency Response to Terrorism                                         | 3       |
| HAN 477 | HAZMAT Training for Emergency<br>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<br>Radiation Therapy | 4       |
| HAN 488 | Medical Imaging and<br>Radiographic Anatomy     | 3       |
| HAN 492 | Radiation Oncology/Medical<br>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 395 Radiation Physics in Medicine (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 course work in human anatomy and physiology; complete the following math and physics sequence: Physics 131/132 or Physics 125/126/127; calculus MAT 125 or MAT 131 with a grade of C+ or better; have an above average mid semester grade in HAN 395 and an above average natural science GPA.

| Course# | Title                                            | Credits |
|---------|--------------------------------------------------|---------|
| HAN 482 | Introduction to Pathology                        | 3       |
| HAN 486 | Principles and Practices of<br>Radiation Therapy | 4       |
| HAN 488 | Medical Imaging and<br>Radiographic Anatomy      | 3       |
| HAN 492 | Radiation Oncology/Medical<br>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 American Society of Anesthesia Technologists and Technicians (ASATT) certification examinations.

Note: Preference is given to students who can document an overall GPA of 2.5 in college level course work and a strong background in the recommended coursework (minimum "C" grade in each course and an overall natural science GPA of 2.5). Recommended coursework includes biology, psychology,



human anatomy, physiology and medical terminology. Preference is given to students who document health care experience (paid or volunteer) and/or community service.

| 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 395 Radiation Physics in Medicine (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 is given to students who document an overall GPA of 2.5 in college level coursework; a strong science and math background (minimum "C" grade in each course and an overall natural science GPA of 2.5). Recommended course work to include calculus, general physics, human anatomy, physiology, medical terminology, and have an above average mid semester grade in HAN 395. Preference is also given to students who can document 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 395 Radiation Physics in Medicine (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 is given to students who document an overall GPA of 2.5 in college level course work; a strong science and math background (minimum "C" grade in each course and an overall natural science GPA of 2.5). Recommended course work to include: calculus, general physics, human anatomy, physiology, medical terminology, and

have an above average mid semester grade in HAN 395. Preference is also given to students who can document 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 202 Human Anatomy and Physiology for Health Science II

This is the second course in a two-part sequence that continues the study of human anatomy and physiology. Topics include the endocrine system, blood composition, the cardiovascular system, the lymphatic system, the immune system, the respiratory system, the digestive system, nutrition, the urinary system, the reproductive system, fluid, electrolyte and acid-base balance and heredity. This course is designed for Health Science majors (HAV), particularly those interested in pursuing HAN clinical concentrations of study.

Prerequisite: HAN 200

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 health care organizations. Explores issues regarding health care insurance, the uninsured and underserved, managed care and changes in the health care 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. Open to non-HSC students.

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 potential 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 through 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. Restricted to HANBS students.

*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 health care 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 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.

*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 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 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 or desktop 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 health care 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 health care 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 health care 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 health care system. Presents an overview of statistics and research methods 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 Service (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 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 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. Student 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 health care 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

*Professor:* Robert O. Hawkins Jr. (emeritus)

*Associate Professors:* Lisa Benz Scott, Debra S. Dwyer, 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, Frank Caruso, Josephine Connolly Schoonen, Karen Dybus, Lisa M. Johnson, M. Veronica McKinnon, Karen J. Mendelsohn

*Lecturers:* Jeanmarie H. Brand, Josef Bohm, Francis X. Burke, Carol A. Gomes, Marilyn L. Haig, Jonathan C. Spier

*Instructors:* Lorraine E. Danowski, Wendy Lee Hildebrandt, Reginald E. Matthews Jr., Joan Stollberger

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

*Program Director:* Alan M. Leiken

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 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 causality, 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 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 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 experiential, 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 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 Impact of the Political Setting on 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 acquaint students with the research and proposal writing process in preparation for a practicum or research project, including: identifying a problem within an area of health care management, policy, and/or practice; formulating a research question or hypothesis; reviewing and critically appraising relevant literature; designing a realistic study and selecting appropriate scientific methods to answer the proposed question (or test the hypothesis); articulating the major strengths and limitations of the proposed study; considering expected results and potential impact of study findings on health care management, policy, and/or practice; and communicating the proposal in a well-referenced and clearly written plan.

*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 Implementing Community Health Programs**

Prepares students to conduct needs assessments of various diverse populations and to plan, implement and evaluate pro-

grams 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 communication; learn the skills to apply this knowledge to evaluate the effectiveness of behavioral and health communication interventions; 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 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 tele-



phones. 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 Challenge**

Examines the social, psychological and medical issues of the HIV/AIDS epidemic in relation to the concerns of educators. Explores and assesses how personal values and attitudes impact on the delivery of educational programs.

*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 today's 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 health-care. 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 health-care 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, Persuasion, and Communication**

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 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:* Kathleen Finnegan, Candace J. Golightly, Ronald Malowitz, Maria Reitano, Sylvia G. Spitzer, Ann-Leslie Berger-Zaslav

*Assistant Professors:* Donna D. Castellone, Rosario L. Cheng, Deborah T. Firestone, Jeannie M. Guglielmo, Mary Hotaling, Theresa Mercado, Joseph Moreschi, Christine Pitocco

*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, Diagnostic Instrumentation, and Clinical Cytogenetics) 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), 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 track. A genetics course is required for the Clinical Cytogenetics track.

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 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       |
| HBC 331 | Introductory Biochemistry                    | 3       |
| HBP 310 | Pathology                                    | 3       |
| HBP 401 | Immunology                                   | 3       |
| HBV 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 492 | Research Tutorial***                                    | 2       |
| 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       |

### 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       |

\*A conditional acceptance may be granted if, upon the judgment of department faculty, there are exceptional circumstances concerning department prerequisites.

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

\*\*\*Students may be exempt from HAD 492 after successful completion of elective tracks in either Diagnostic Instrumentation or Laboratory Information Systems.

## Laboratory Information Systems

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

| Course # | Title                                 | Credits |
|----------|---------------------------------------|---------|
| HAD 406  | Introduction to Clinical Cytogenetics | 1       |
| HAD 506  | Clinical Cytogenetics Internship      | 6       |

## 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 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

### 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 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 406 Introduction to Clinical Cytogenetics**

Introduces the student to cytogenetic principles utilized in the clinical laboratory. The lecture course is designed to introduce the theories, concepts, and techniques applicable to the practice of clinical cytogenetics. Topics include morphology and behavior of human chromosomes, cytogenetic nomenclature, cytogenetic syndromes, and cancer cytogenetics. Laboratory techniques such as fluorescence in situ hybridization (FISH) and various banding techniques are discussed. Permission of department is required.

1 credit Lecture

**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 hemostasis 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 permission 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, as 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 informatics setting.

Prerequisites: HAD 363; additional prerequisite track course work, 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 492 Research Tutorial**

Provides students with an opportunity to apply both skills and knowledge acquired during their studies to formulate and

design a research project. Students will then, under faculty mentorship, execute their project using appropriate research methods. They will also be expected to write and present a scientific paper on the completed research.

2 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**

Full-time instruction and practice 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 506 Clinical Cytogenetics Internship**

Introduces the students to clinical cytogenetic techniques and standard operating procedures utilized in a clinical cytogenetic laboratory. Permission of department is required.

6 credits *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*

## Phlebotomy Training Program Leading to a Certificate

*Program Director:* Kathleen Finnegan

The phlebotomy program is a non-degree, non-credit ASPT (American Society of Phlebotomy Technicians) accredited program designed to train students in effective phlebotomy techniques. Graduates can be employed in a variety of settings including hospitals, private laboratories and physician's offices. The phlebotomy 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.

### 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 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., Patricia J. Berkoski, Christian Becker, Ingrid Bozeat, Timothy Fisher, James A. Ganetis, William Hanford, Joseph P. Hock, Howard M. Jablow, Lisa M. Johnson, Michael S. Karol, K. Michael McPeck, Michael McPeck, James M. O'Connor, Ramona Ramdeo, Stephen G. Smith

*Instructors:* Jeffrey Adelman, Susan Andersen, John Brittelli, Edward Carito, Jennifer Caulfield, Kevin Caulfield, Ursula Chojecka, Gary Chudow, Sharon A. Close, Edwin L. Coombs, Albert Mario Corso, David DesJeunes, Lisa Endee, William L. Ericsson, David Hambel, Gloria Hoerning, Roseann S. Hundertmark, Joanne Jacobsen, Elliott D. Karp, Deniese S. LeBlanc, Andrew J. Lee, Laurie Lenox, Wendy Ann Linder, Jane Luchsinger, Carol A. Marlborough, Donna McEvoy, Ute McKenna, Lori A. McKernan, Sharon Merdian, Donald F. Meyer, Diana Mlyn, Theodore L. Nilsson, Ken Okorn, Robin Paladino, Daniela Rianna, Russell E. Rozensky, Natalie Jean Sachman, Edward B. Schrage, Matthew Traub, Donna Tsang, Bernadette K. White, 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. All prerequisite courses must be completed with a grade of C or better. The program also requires candidates to meet the school's natural science requirement by successfully completing 11-13 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, are 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 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       |
| 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 EKGs, 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 pathophysiological.

Prerequisite: HAT 304

*3 credits Lecture, Laboratory*

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

**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

**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 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

*Director of Research:* Sue Ann Sisto

*Professor:* Sue Ann Sisto

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

*Assistant Professors:* Vincent J. Barry, Dawn M. Blatt, Lynn A. Cataldo, Paul-Neil Czujko, Elaine E. DeFrancesco, Kerry J. Falvey, Karen Furgal, Ralph K. Garcia, Joseph M. Giglio, Cheryl A. Gillespie, Ann Goerdt, Catherine C. Goodman, Cheri L. Gostic, Christine S. Hammer, Kyle D. Hewson, Matthew Hyland, Michelle Hyland, Lisa M. Johnson, Jody Klein, Howard W. Makofsky, Sharon A. Martino, Agnes McConlogue Ferro, Patric McQuade, Maria A. Meigel, Joseph Montalto, Karen O'Hagen, Rose M. Ortega, Peter C. Panus, Candiano Rienzie, Nicole M. Skidmore, Susan E. Spagnoli, Catherine M. Tuppo, Debra M. Vion, Gary Welch, Scott Yerys, Sandra F. Zamparo

*Lecturers:* Gina Alaimo, Robert Biaggi, Elizabeth A. Budd, Barbara W. DeTurk, Barbara V. Lee, T. Guillaume Van Moorsel, Deborah L. Weingarten

*Instructors:* Christopher K. Carden, James Megna

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

*Chair:* Richard W. Johnson

*Academic Coordinators of Clinical Education:* Dawn M. Blatt, Cheri L. Gostic, Rose M. 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       |

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

## 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 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/Neuromuscular Physical Therapy

| Course# | Title                         | Credits |
|---------|-------------------------------|---------|
| HAY 520 | Biomechanics                  | 3       |
| HAY 536 | Introduction to Motor Control | 3       |
| HAY 537 | Neuroplasticity               | 3       |

### Topics in Neuromuscular Physical Therapy

| Course# | Title                                     | Credits |
|---------|-------------------------------------------|---------|
| HAY 531 | Motor Learning                            | 3       |
| HAY 533 | Implicit vs. Explicit Learning            | 3       |
| HAY 608 | Orthopedic Examination and Intervention I | 3       |
| HAY 622 | Current Topics in Pediatrics              | 3       |

### Topics in Cardiopulmonary Physical Therapy

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

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

**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 545 | Ethics and Health Care for Physical Therapists | 3       |
| HAY 563 | Teaching and Physical Therapy Practice         | 3       |
| HAY 602 | Issues in Health Care Administration           | 2       |

Courses offered in the SHTM Advanced Certificate Program in Health Care Management can be used to satisfy the elective requirement with permission of the Program Director.

**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 tech-

niques 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, myology 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, myology 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**

Prepares students to examine, evaluate, and provide physical therapy intervention for children with disabilities and special health care needs. Foundational knowledge in development, motor control, and motor learning provides the basis for describing impairments of body function and structure and the physical therapy management of activity and limitations common in selected neurological and musculoskeletal pediatric diagnoses. Clinical decision-making will include consideration of the interaction of the natural development of children with their disability, provision of services in natural environments, inclusion of child and caregiver concerns, and medicolegal issues of pediatric practice. Students will gain experience in selecting appropriate pediatric outcome measures, observation of movement in childhood, and goal setting through video analysis, demonstration, and field visits to pediatric clinics. Introduces therapeutic techniques appropriate to begin basic treatment of patients in a pediatric setting.

*3 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 511 Pediatric Rehabilitation II**

This course continues to develop the knowledge and skill necessary for the provision of physical therapy care to a wide variety of pediatric clients and patients. Building on the foundation gained in HAY 509, this course presents examination and interventions for subtle and complex movement dysfunctions including developmental coordination disorder, TBI, pediatric MS, childhood cancer, and obesity. Considers interventions appropriate for a variety of service delivery settings including NICU, home-based EI, and schools. Addresses the physical therapist's role in transitions between delivery set-

tings. Students will examine evidence for therapeutic methodology as well as that of alternative and complementary regimes, including TAMO, hippotherapy, Conductive Education, and Theratogs. Students will have an opportunity to compare and contrast local fitness/wellness programs for pediatric populations.

Prerequisite: HAY 509

*2 credits Laboratory, Lecture*

### **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. Principles 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 utilize prosthetic or orthotic devices. 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.

*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, 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, 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, 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**

Explores memory systems active in implicit and explicit motor learning. Critically evaluates and integrates 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.

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 eval-

uate 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. Critically analyzes animal and human research literature examining spinal cord, somatosensory cortex, motor cortex and neural 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.

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**

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. Students 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.

*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, 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 activ-

ities 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 608 Orthopedic Examination and Intervention I**

Combining lectures, demonstrations, and hands-on laboratory sessions, this course will emphasize the application of evidence-based practice in all areas of spinal management. Where little evidence exists, a pragmatic approach integrating basic principles of biomechanics and pathokinesiology will be used. Provides an introduction to the biomechanical, dys-

function types, and their respective terminology. Presents an integrated model of physical therapy examination and evaluation of spinal disorders. Discusses and incorporates a physical therapy management approach of manual therapy of the spine and pelvis combined with patient education and exercise. The course will devote lab time to carefully monitor skills of palpation, examination, and interventions.

3 credits *Laboratory, 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.

3 credits Lecture

**HAY 622 Current Topics in Pediatrics**

Emphasizes the examination, evaluation, assessment, intervention, and outcome measure of children with disabilities. Topics will enhance and challenge those physical therapists that practice in a pediatric setting. Explores the use of current and future adaptive equipment in pediatrics as well as the role of the pediatric physical therapist in a variety of contexts and environments.

3 credits Lecture

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

*Chair:* Donna M. Costa

*Vice Chair:* Alexander Lopez

*Academic Field Work Coordinator:* Jamie M. Geraci

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

*Assistant Professors:* Aline Chesner, Fran Babiss, Laura Conway, Karen B. DeChello, Jamie M. Geraci, Sean M. Getty, Linda Hindy-Telford, Ginger Johnson, Alexander Lopez, Tami M. McGowan, Tricia A. Nicholes, Eva L. Rodriguez, Ann M. Russo, Kathleen V. Pfitzer, Elizabeth Vanner

*Instructors:* Carol K. Chamoff, Shari Bernard Curran

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 NBCOT 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 four Anatomy & Physiology I & II, four credits of biology, four credits of chemistry, and four 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, and a three credit Introduction to Sociology or Anthropology 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       |
| HBV 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                        | 4       |
| 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 458 | Introduction to Evidence-Based Practice                             | 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 Studies 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      |

## 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, HBV 350, HAO 319

*4 credits Lecture*

\*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.

**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.

Prerequisites: 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*

**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 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 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, 323, 324, 330, 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, 319, 330, 332, 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 symptomatology, 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 symptomatology, 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, 323, 324, 330, 374, 385

1 credit Clinical

**HAO 398 Fieldwork IC**

The third of three introductory level clinical experiences. Offers opportunity to identify symptomatology, 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, 315, 320, 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 Alzheimer's 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 pub-

lished, 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. Discusses the role of occupational therapy in low vision. 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.

*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 practice. 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. Prerequisites: 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 student's 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 non-parametric tests. Students learn to use available computer programs for data management and statistical analysis. Discusses validity and reliability of various statistical techniques.

Prerequisite: HAO 551

Corequisite: HAO 552

*3 credits Lecture*

**HAO 551 Research Design and Methods for OT**

Provides students beginning research and critical inquiry skills through learning current occupational therapy related research methods and by the design of research grant proposals. Students gain fundamental critical inquiry and writing skills necessary to identify appropriate funding sources and write grant proposals for research and program development. Students learn to design qualitative research projects and analyze qualitative data.

Prerequisite: successful completion of undergraduate Occupational Therapy curriculum

Corequisite: HAO 550

*3 credits Tutorial*

**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 Occupational Therapy 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 Studies 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, health care 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 focus 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 Leading to the Bachelor of Science Degree**

*Program Director:* Kathryn A. Koshansky

*Curriculum Director:* Xristos K. Gaglias

*Clinical Coordinator:* Richard J. Boergers

*Professor:* Mark S. Wolff

*Associate Professors:* Kathryn A. Koshansky, Donna I. Meltzer, Joseph C. White

*Assistant Professors:* Richard J. Boergers, Stuart B. Cherney, Jeanine M. Engelmann, Xristos K. Gaglias, Christopher W. O'Brien, James Penna

*Instructors:* Steven Barell, Lisa Cantara, Jennifer Chimenti, Michele Cordova, Lisa Cronk, Karen M. Deleski, Dominick DeStefano, Barbara-Jean Ercolino, Arturo Flores, Paul Lasinski, Eric Lehnert, Jason McKay, Lorraine Milazzo, Anthony Pesce, Nicholle Sacer, David A. Smith, Mary Rose Tovornik, Peter T. White

The Athletic Training 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<sup>®</sup>). 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 examina-



tion 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 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. The following course work require grades of "C" or better: Eight credits in biology (to include one course in human physiology); eight credits in chemistry; eight credits in physics and three 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 | Clinical Evaluation & Diagnosis of the Lumbar Spine & Lower Extremity | 3       |

|         |                                                                               |     |
|---------|-------------------------------------------------------------------------------|-----|
| HAL 321 | Clinical Evaluation & Diagnosis of the Head, Cervical Spine & 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                                                 | 3-6 |
| 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  | BOC Certification Exam Primer                                        | 1       |
| HAL 484  | Athletic Training Practicum IV                                       | 3-6     |
| 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. Prerequisite/Corequisite: ANP 300

*4 credits Lecture, Laboratory*

**HAL 305 Prevention and Care of Athletic Injuries**

A course addressing the areas of knowledge, skills, and values 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 Diagnosis of Lumbar Spine/Lower Extremity**

Focuses on principles of orthopedic examination and assessment. Emphasizes the components of the comprehensive orthopedic clinical evaluation and diagnosis, including history, inspection, palpation, functional testing, and special evaluation techniques of the lumbar spine and lower extremity.

*3 credits Lecture, Laboratory*

**HAL 321 Clinical Evaluation and Diagnosis Head/Cervical Spine/Upper Extremity**

This course focuses on the principles of orthopedic examination and assessment. Emphasis will be placed on the components of the comprehensive orthopedic clinical evaluation and diagnosis including: history, inspection, palpation, functional testing, and special evaluation techniques of the head, cervical spine and upper extremity.

*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 evalu-

ate 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 BOC Exam Primer**

This course is designed to provide students with information regarding study techniques, test taking strategies, and application procedures for the Board of Certification (BOC) exam.

*1 credit Lecture*

**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 clinical evaluation and diagnosis. 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 clinical evaluation and diagnosis and 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, clinical evaluation and diagnosis. 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

*Lecturers:* 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; American Heart Association 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, Lecture*

### 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 and Waterfront Lifeguarding. 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, Lecture*

### HSQ 223 Water Safety Instructor

A course designed for students to meet the requirements for certification as an American 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 external defibrillators. Presentations include legal 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 American Red Cross certification requirements for Instructor of CPR for the Professional Rescuer and Instructor of Basic Life Support Cardiopulmonary Resuscitation for the Health Care Provider. The course includes teaching methods and protocols of cardiopulmonary resuscitation, including infant, child, adult and two rescuer procedures and the use of bag-valve masks.

*2 credits Lecture*

### HSQ 272 Instructor of First Aid

Covers the American 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 motorcognitive 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

\*Repeated two times for a maximum total of three credits

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, Peter D. Kuemmel, Paul Lombardo

*Assistant Professors:* Robert M. Ansbach, David L. Brenner, Jeanne M. Cavalieri, Donna A. Crapanzano, Nadya Dimitrov, Karen Dybus, Marian I. Eskow, Donna Ferrara, Edward Giarrusso, Dale M. Janson, Lynn M. Keil, Maureen J. Kelly, 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, Lori B. Brooks, Guy A. Cassara, Rebecca Claudio-Morales, Frederick G. Deutch, Martin Morales, Erin O'Leary, Garry J. Schwall, Marzya Sdrewski-Thailer, Matthew Shebes, Jeannine R. Smith

## 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 Web site, accessed through [www.hsc.stonybrook.edu/shtml/](http://www.hsc.stonybrook.edu/shtml/), is the definitive source of information on admissions and 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 statistics 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 for interview is given to applicants who have a natural science grade point average and an overall grade point average of 3.0 or better and have taken course work in Anatomy, Physiology, and Genetics (Genetics will become a requirement for admission starting in 2009). Preference is given to applicants whose natural science prerequisites have been taken within seven years of application and to those who have completed all of the required prerequisites at the time of application. 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](http://www.caspaonline.org) or call (240) 497-1895.

## Program Requirements

The following professional courses must be completed prior to graduation from 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                         | 5       |
| HAP 522 | Clinical Medicine II                        | 7       |
| HAP 523 | Clinical Medicine III                       | 6       |
| HAP 524 | Clinical Medicine IV                        | 9       |
| 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 3.0 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 505 Contemporary Issues in Health Care Delivery

This course provides clinically practicing physician assistants an overview of important information and trends in health care delivery in the 21st century. Lecture content will include topics such as emergency response preparedness, complementary and alternative medicine, information technology in health care, medical genetics, geriatrics, global health, health law, Long Island's community health, women's health, men's health, and other health care topics as they arise. A variety of teaching methods will be utilized including lecture, case studies and small group discussions. Students will have the opportunity to explore in depth one area of special interest pertinent to the course. Open to post-professional PA students only.

3 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 511 Clinical Pharmacology Seminar for Physician Assistants

Provides an opportunity for physician assistants to enhance their ability to rationally prescribe pharmaceuticals. The online seminars/case discussions integrate information presented via classroom and web-based lectures. At the completion of this course, students will have deepened their understanding of how to appropriately select medications in various clinical settings, with knowledge of potential advantages, disadvantages, and relative costs. Post-professional PA students only.

3 credits Lecture

### HAP 514 The Problem Oriented Medical Record History and Physical Examination

The course provides students with an organized, sequential approach to the history and physical examination. Students will be able to perform both complete and directed histories and physical examinations and accurately document their findings. Open to entry-level PA students only.

5 credits Laboratory, Lecture

### HAP 516 Problem Based Learning (PBL)

Provides students with the opportunity to develop critical thinking and problem solving skills in a seminar, small group environment. Students will learn to connect the knowledge and attitudes developed in behavioral, basic, and clinical science courses and apply it to patient care. Increases student capacity to seek and apply knowledge as individual problem solvers and members of a health care team. Open to entry-level PA students only.

1 credit Seminar

### HAP 518 Medical Director Presentation Rounds

Provides students with feedback on oral presentations derived from patient history and physical examinations completed by students. Evaluations are based on student's ability to critique an incomplete history and physical, identify issues that require further discussion in the HPI and physical exam, write a complete problem list, and document an assessment and plan. Open to entry-level PA students only.

0.5 credits Seminar

### 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 inpatient and outpatient setting.

Prerequisites: HAP 504 and HBA 561 (minimum grade of C-)  
5 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 inpatient and outpatient setting.

*7 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 inpatient and outpatient setting.

*6 credits Lecture*

### **HAP 524 Clinical Medicine IV**

Focuses on mastery of the knowledge, skills, and attitude necessary to construct a comprehensive patient database and management plan. Students become proficient in utilizing the history and physical information as they begin to synthesize data to formulate a diagnostic plan. This is emphasized through learning activities such as lectures, small group process, case studies, and clinical skills laboratories. The diagnostic process is taught in an organ systems 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. Open to entry-level PA students only.

Prerequisite: Minimum grade of B- in HAP 523 and successful completion of prior PA program courses

*9 credits Lecture*

### **HAP 528 Genitourinary, Sexual and Reproductive Health**

A comprehensive introduction to obstetrics and gynecology (OB/GYN), female and male genitourinary system (GU), and human sexuality. Students will learn about structures, function, evaluation, and treatments of the various diseases and conditions. Open to entry-level PA students only.

*4 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 541 Principles and Practices of Clinical Prevention and Population Health**

This course provides clinically practicing physician assistants an in-depth understanding of health promotion, disease prevention, and population health and resources for utilization of this information in their clinical practices. The framework for the course consists of four components including evidence base for practice; clinical prevention services-health promotion; health systems and health policy; and community aspects of practice. Includes both individually oriented and population-oriented preventative efforts, as well as interaction between the two. Students will be required to complete a health promotion or disease prevention project relevant to their community or clinical practice. Post-professional PA students only.

*3 credits Lecture*

### **HAP 549 Clinical Skills for the Physician Assistant Student**

The clinical skills course provides the physician assistant student with an overview of common clinical procedural skills and their indications, limitations, benefits, and potential risks. Students are taught how to perform a number of commonly performed clinical procedures. Open to entry-level PA students only.

*1 credit Laboratory, 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 552 Evidence-Based Medicine: Evaluating and Applying Clinical Research**

Provides practicing PAs with the knowledge and skills to develop and evaluate clinical research questions, hypotheses, designs, and protocols, and to critically evaluate and analyze scientific and medical journals. Students will learn to conduct computerized searches and literature reviews. Introduces the principles and practice of Evidence-Based Medicine, with emphasis on various types of clinical questions typically encountered in PA practice, and tools available to answer them. Course will focus on student areas of interest, and projects will be based on clinical cases encountered in the student's practice. Students will apply their knowledge of research and EBM by designing a clinical question and conducting and reporting on a thorough literature search on their topic of choice. Post-professional PA students only.

3 credits Lecture

**HAP 554 Research Writing for Health Professionals**

This course prepares students to write and edit the components of research proposals and essays. Students will review required components for research proposals and practice writing and editing components and other assigned essays. Students will learn a six-phase editing process to apply to their own writing and will learn to critique the writing of other students. Post-professional PA students only.

3 credits Lecture

**HAP 556 Teaching Strategies**

This course provides an overview of the principles associated with effective teaching. Students will combine theory and practice while developing teaching skills that promote learning and diversity within a variety of education settings. Topics emphasize the practical aspects of teaching and include teaching models, student learning styles, course objectives, learning outcomes evaluation, and classroom ethics. Students will be required to complete a final project that will be presented, discussed, and evaluated in class. For post-professional PA students only or permission of the Program Director.

3 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 outpatient 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 differential 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, perform-

ing 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  
*4 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*

#### **HAP 588 Practicum**

Provides post-professional Physician Assistant students opportunities to apply theories and skills learned in the program. A limited number of students are allowed to develop a practicum project that is uniquely designed to meet his/her needs. Students will plan and implement a project within one of the following areas: research, administration and management, education, leadership/professional development, or professional writing. Acceptable projects must include design, implementation, and analysis phases as well as a bibliography. Projects are approved by the Program Director and a mentor is assigned to assist in the development of a practicum proposal. Enrollment requires permission of the Program Director. The course may be repeated once.

*3 credits Tutorial*

## Post-Professional Program in Physician Assistant Education Leading to the Master of Science Degree

*Chair:* Paul Lombardo

*Program Director:* Lynn Timko-Swaim

*Assistant Director:* Nadya Dimitrov

As providers of medical care and members of the health care team, physician assistants (PAs) must respond to new standards of practice, evolving delivery systems, changes in reimbursement procedures, shifts in population demographics, and the opportunities and challenges of technology. This part-time graduate program provides an opportunity for PAs to meet these challenges while obtaining their Master of Science degree. The Stony Brook Post-Professional Masters Program (PPMP) increases the depth and breadth of student medical knowledge beyond that attained during entry level PA education and prepares graduates for career advancement and leadership in areas such as administration, management, education, and research. Optimally, this results in improved services to the patients and the communities that PPMP graduates serve.

To satisfy program degree requirements, each student must complete a minimum of 30 credits including 18 required credits in the core curriculum and 12 elective credits. Core credits include evidence-based medicine, ethics and health care, contemporary issues in health care delivery, clinical pharmacology, research writing, and clinical prevention and population health. Elective credits offer each student the opportunity to tailor the program to both his/her work setting and personal interests. Evening and weekend courses are offered at the Long Island and Manhattan locations in the traditional classroom style setting, in online format, and as hybrids of these two approaches. PPMP students are eligible to enroll in classes at either or both locations.

### Admission Requirements

Applicants must possess a baccalaureate degree from an accredited college or university and have graduated from an ARC-PA accredited PA Program. Current NCCPA certification is required and an overall GPA of 3.0 is preferred. Applications and complete program information can be accessed online on the program's Web site: [www.hsc.stonybrook.edu/shtm/papmp/index.cfm](http://www.hsc.stonybrook.edu/shtm/papmp/index.cfm).

### Program Requirements

Candidates must complete a minimum of 30 credits within five (5) years. All core and elective requirements must be satisfied while maintaining a minimum program GPA of 3.0. In addition, at least one course must be completed at the Stony Brook Long Island location.

### Core Courses

Candidates must complete the six (6) core courses listed below (18 credits):

| Course# | Title                                                                 | Credits |
|---------|-----------------------------------------------------------------------|---------|
| HAP 505 | Contemporary Issues in Health Care Delivery                           | 3       |
| HAP 511 | Clinical Pharmacology Seminar for Physician Assistants                | 3       |
| HAP 541 | Principles and Practices of Clinical Prevention and Population Health | 3       |
| HAS 545 | Ethics and Health Care                                                | 3       |
| HAP 552 | Evidence Based Medicine: Evaluating and Applying Clinical Research    | 3       |
| HAP 554 | Research Writing for Health Professionals                             | 3       |

### Electives

In addition to those courses listed below, many courses in the SHTM Department of Health Care Policy and Management (HCPM) can be used to fulfill elective requirements in the PA PPMP. HCPM courses are described in the Department of Health Care Policy and Management section of this bulletin. Registration for HCMP elective courses may require the permission of the HCMP program director. An added feature of the program is that students can apply for the Advanced Certificate in Health Care Management in the Department of HCMP while enrolled in the PA PPMP.

Candidates must complete four (4) elective courses (12 credits) from among the following and/or courses in the Department of HCPM:

| Course# | Title               | Credits |
|---------|---------------------|---------|
| HAP 556 | Teaching Strategies | 3       |
| HAP 558 | Epidemiology        | 3       |
| HAP 588 | Practicum           | 3       |

Registration for the Practicum (HAP 588) requires permission from the PPMP program director. Three to six (3-6) credits of tutorial work in the areas of research, education, or administration may be completed as practicums.

### Course Descriptions

#### HAP 505 Contemporary Issues in Health Care Delivery

This course provides clinically practicing physician assistants an overview of important information and trends in health care delivery in the twenty first century. Lecture content will include topics such as emergency response preparedness, complementary and alternative medicine, information technology in health care, medical genetics, geriatrics, global health, health law, Long Island's community health, women's health, men's health and other health care topics as they arise. A variety of teaching methods will be utilized including lecture, case studies and small group discussions. Students will have the opportunity to explore in depth one area of special interest pertinent to the course. Post-Professional PA students only.

*3 credits Lecture, Seminar*

**HAP 511 Clinical Pharmacology Seminar for Physician Assistants**

Provides an opportunity for physician assistants to enhance their ability to rationally prescribe pharmaceuticals. The on-line seminars/case discussions integrate information presented via classroom and web-based lectures. At the completion of this course, students will have deepened their understanding of how to appropriately select medications in various clinical settings, with knowledge of potential advantages, disadvantages, and relative costs. Post-professional PA students only.

*3 credits Lecture*

**HAP 541 Principles and Practices of Clinical Prevention and Population Health**

This course provides clinically practicing physician assistants an in-depth understanding of health promotion, disease prevention and population health and resources for utilization of this information in their clinical practices. The framework for the course consists of four components including evidence base for practice; clinical prevention services-health promotion; health systems and health policy; and community aspects of practice. Includes both individually-oriented and population-oriented preventative efforts, as well as interaction between the two. Students will be required to complete a health promotion or disease prevention project relevant to their community or clinical practice. Post-Professional PA students only.

*3 credits Lecture*

**HAP 552 Evidence Based Medicine: Evaluating and Applying Clinical Research**

Provides practicing PAs with the knowledge and skills to develop and evaluate clinical research questions, hypotheses, designs and protocols, and to critically evaluate and analyze scientific and medical journals. Students will learn to conduct computerized searches and literature reviews. Introduces the principles and practice of Evidence-Based Medicine, with emphasis on various types of clinical questions typically encountered in PA practice, and tools available to answer them. Course will focus on student areas of interest, and projects will be based on clinical cases encountered in the student's practice. Students will apply their knowledge of research and EBM by designing a clinical question and conducting and reporting on a thorough literature search on their topic of choice. Post-Professional PA students only.

*3 credits Lecture*

**HAP 554 Research Writing for Health Professionals**

This course prepares students to write and edit the components of research proposals and essays. Students will review required components for research proposals and practice writing and editing components and other assigned essays. Students will learn a six phase editing process to apply to their own writing and will learn to critique the writing of other students. Post-Professional PA students only.

*3 credits Distance Learning*

**HAP 556 Teaching Strategies**

This course provides an overview of the principles associated with effective teaching. Students will combine theory and

practice while developing teaching skills that promote learning and diversity within a variety of educational settings. Topics covered in this course emphasize the practical aspects of teaching and include teaching models, student learning styles, course objectives, learning outcomes evaluation, teaching evaluation and classroom ethics. Students will be required to complete a final project that will be presented, discussed and evaluated in class. For Post-Professional PA students only or with permission of the PPMP program director.

*3 credits Lecture*

**HAP 558 Epidemiology**

This course presents epidemiologic concepts used to study health and disease in populations. It provides information about the major causes of morbidity and mortality, including methods of measurement (e.g., incidence, prevalence) and data sources. Observational and experimental epidemiologic studies will be described and their advantages and disadvantages compared. Students will develop the skills needed to critically review epidemiologic research studies published in peer-reviewed journals. Students will be introduced to the various areas of epidemiologic study, including cancer, molecular/genetic, environmental, occupational, social and behavioral, and infectious disease/surveillance. The course comprises lectures, small group seminars, and reviews of published research allowing for in-depth discussions of topics. For Post-Professional PA students only or with permission of the PPMP program director.

*3 credits Lecture*

**HAP 588 Practicum**

Provides PA Post-Professional Masters Program (PPMP) students the opportunities to apply theories and skills learned in the program. A limited number of students are allowed to develop a practicum project that is uniquely designed to meet his/her needs. Students will plan and implement a project within one of the following areas: 1) research, 2) administration and management, 3) education, 4) leadership/professional development or 5) professional writing. Acceptable projects must include design, implementation and analysis phases as well as a bibliography. Projects are approved by the Program Director and a mentor is assigned to assist in the development of a practicum proposal. Enrollment requires permission of the PPMP program director. The course may be repeated no more than once.

*3-6 credits Tutorial*

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

*Program Director:* Paul A. Werfel

*Medical Director:* Scott Johnson

*Assistant Professor:* Paul A. Werfel

*Lecturers:* Steven Eder, Theodore J. LaMonica, Robert B. Marks, Brian P. Scarpati, Donna M. Stapleton



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.