HEALTH SCIENCE

Health Science (HAV, HAN)

Major in Health Science
School of Health Technology and Management

PROGRAM DIRECTOR: Deborah Zelizer
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Minors or second majors of particular interest to students majoring in Health Science: Biology (BIO), Business Management (BUS), Chemistry (CHE), Economics (ECO), Computer Science (CSE), Environmental Studies (ENS), Health and Wellness (LHW), Psychology (PSY), Sociology (SOC)

Faculty

Peter C. Flanagan, Jr., Clinical Assistant Professor, Emergency medical services
Carmen P. McCoy, Clinical Instructor, B.S., Stony Brook University: Medical informatics; health science.
Christine Pitocco, Clinical Assistant Professor, M.S., Stony Brook University: Health care management; medical informatics; clinical laboratory sciences.
Carol A. Russo, Clinical Assistant Professor, M.S.W., Stony Brook University: Health care management; health science.
Catherine M. Vetter, Clinical Assistant Professor, M.S., Stony Brook University: Cytotechnology; health science.
Deborah Zelizer, Clinical Assistant Professor, M.S.W., Stony Brook University: Public health/community health education; diversity education.

Affiliated Faculty

Omar Alli, Health science; medical billing and coding
Regina T. Biasetti, Health science; professional writing
Gilda K. Balesh, Health science; medical billing and coding
Frederick J. Balesh, Health science; medical billing and coding
Sabra Boughton, Health care policy and management
John Britelli, Respiratory care
Linda M. Cimino, Anesthesiology
Donna A. Crapanzano, Physician assistant education
Leo DeBobes, Clinical laboratory sciences
Karen R. Dybus, Health science; community health education
Robert G. Eaton, Health science; health care management
Moshe Eisenberg, Pharmacology
Kenneth J. Feldman, Health care policy and management
Lynda L. Geller, Pediatrics
Peter S.A. Glass, Anesthesiology
Candace Golightly, Clinical laboratory sciences
Carol Gomes, Health care policy and management
Wendy Griffin, Health science; medical informatics
Christine L. Higdon, Health science; environmental health
Eleanor Kra, Health science
Paul Keraga, Health science; medical informatics
Robbye E. Kinkade, Health science; community health education; HIV/AIDS
Craig A. Lehmann, Clinical laboratory sciences
Alan M. Leiken, Health care policy and management
John Marchese, Clinical laboratory sciences
Karen Mendelsohn, Health care policy and management
M. Veronica McKinnon, Health care policy and management
David LaBelie, Health science; radiation therapy
Maria L.G. Lagade, Anesthesiology
Ellen Maleszewski, Health science; medical informatics
Sharon A. Martino, Physical therapy
Annette M. Mueller, Health science; medical informatics
Stacey Murphy, Health science; medical billing and coding
Arline H. Nolan, Health science; medical informatics
Edward O’Connell, Health science; environmental health
Bessie Ortega, Health science; diversity issues in health care
Sujatha Pai, Radiation oncology
Lawrence E. Reinstein, Radiation oncology
Nanci C. Rice, Health care policy and management
Georgina Sampson, Health science; medical billing and coding
Joy E. Schabel, Anesthesiology
Deodat Dan Somaiah, Health science; medical billing and coding
Mark Studin, Health science; medical billing and coding
Donna Sym, Health science; pharmacy
Leslie Temme, Health science; chemical dependency issues
T. Guillaume Van Moorsel, Health science; medical information

Marie Varella, Health science; pharmacy
Stephen A. Vitkin, Medicine
Tamara E. Weiss, Radiation oncology
Andrew C. White, Health science; medical informatics
Joseph E. Whitton, Health science
Janet I. Zwerel, Health science; medical billing and coding

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he 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, and medical dosimetry, emergency and disaster management, nuclear medicine technology, and radiologic technology.

HAV/HAN

The Health Science major requires that students receive a broad liberal arts education during their first three years (HAV). Students can declare Health Science as a major at any time. In the senior year (HAN), the curriculum focuses on health care related topics. Graduates will be knowledgeable about health care, and can expect to be employed by hospitals; integrated health care delivery systems; physician group practices; health departments; nursing homes; and managed care, corporate and not-for-profit organizations. They can also pursue clinical and graduate degrees through appropriate admissions processes.

Requirements for Enrollment in Senior-Year Courses in the Major in Health Sciences (HAN)

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

Health Science, first three years (HAV)

1. Completion of 91 credits with a minimum g.p.a. of 2.00
2. Completion of the Diversified Education Curriculum (D.E.C.)
3. Completion of a minimum of 16 credits in the natural sciences (D.E.C. category E)
4. Completion of 21 credits in related electives courses (see listing below)
   Note: The 16 credits in natural sciences courses used to satisfy Requirement 3 may not be used to satisfy this requirement.
5. Completion of 10 credits at the upper-division level (courses numbered 300 or higher), including courses used to satisfy Requirements 1 through 5 above.
   Note: 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.

Requirements for the Major in Health Science (HAN)

Note: See the Health Sciences Center Bulletin for course descriptions not included in this Bulletin.

Senior Year Health Science (HAN)
The major in Health Science leads to the Bachelor of Science degree. Completion of the degree requires a minimum of 29 credits after achieving senior status and advancement to senior-year courses. To be in good standing in the School of Health Technology and Management, the student must maintain a minimum 2.00 cumulative g.p.a. and a 2.50 minimum g.p.a. in required professional (HAN) courses. A minimum grade of C is required in each core Health Science program course 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.

Core Courses
To be completed during the first semester, senior year. Students must enroll in 15 credits of core health science courses including:
1. HAN 300 Health Care Issues
2. HAN 333 Communication Skills
3. HAN 335 Professional Ethics
4. HAN 364 Issues in Health Care Informatics
5. HAN 383 Professional Writing

Courses in the Concentration
To be completed during the second semester, senior year. Students are advised to select an area of concentration because it will offer greater career opportunities.

A. Health Care Management
This concentration provides the knowledge and skills to manage health care practices, plan health care programs, and utilize the fundamentals of health care management and health services administration.
1. HAN 432 Introduction to Health Care Management
2. HAN 434 Corporate Compliance and Regulation
3. HAN 436 Continuous Quality Improvement in Health Care
4. HAN 435 Sales and Marketing in Health Care

B. 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 of health educators. Employment opportunities include public and private health-related agencies, hospitals, and HMOs.
1. HAN 440 Introduction to Community Health Education
2. HAN 442 Community Health Education Models and Resources
3. HAN 444 Teaching Strategies
4. HAN 456 Behavioral and Social Aspects of Health

C. 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.
1. HAN 450 Intro. to Public Health
2. HAN 452 Epidemiology and Biostatistics
3. HAN 454 Issues in Public Health
4. HAN 456 Behavioral and Social Aspects of Health

D. Health Care Informatics
This specialization prepares the student for a career in health care information systems, 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.
1. HAN 462 Developing Health Information Systems
2. HAN 464 Health Information Systems Management
3. HAN 466 Applied Healthcare Informatics
4. HAN 467 Utilization and Outcomes Research Methods

E. 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.
1. HAN 470 Environmental Health, Radiation Safety, and Safety Engineering
2. HAN 474 Industrial Hygiene
3. HAN 476 Hazardous Materials, Emergency Response, and Environmental Auditing
4. HAN 478 Independent Study

F. Medical Billing and Coding
This concentration provides students with the knowledge and skills required to enter the healthcare 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.
1. HAN 420 ICD-9-CM for Medical Billers and Coders
2. HAN 421 CPT for Medical Billers and Coders
3. HAN 422 Medical Billing Methodologies
4. HAN 423 Clinical Records

G. Disability Studies
This concentration provides an interdisciplinary focus of study in areas such as independent living, employment, and health and community issues. Job opportunities for entry-level professional and managerial positions may be found in developmental or physical disability services agencies, independent living centers, mental health centers, the geriatrics and vocational rehabilitation agencies.
1. HAN 443 Aging and Disability
2. HAN 446 Disability Health and Community
3. HAN 447 Children with Disabilities
4. HAN Disability and Employment
5. HAN 449 Project in Disability Studies

H. 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.
1. HAN 411 Math and Dosage Calculations for the Pharmacy Technician
2. HAN 412 Legal and Ethical Issues for Pharmacy Technicians
3. HAN 413 Pharmacology for Pharmacy Technicians
4. HAN 414 Pharmacy Technician I
5. HAN 415 Pharmacy Technician II

I. Medical Dosimetry
This concentration is designed to provide students with the knowledge and skills necessary to be a Radiation Therapy Aide. Upon graduation, students may apply for admission to the 12-month, hospital-based post-baccalaureate Medical Dosimetry program, which prepares students for entry-level medical dosimetry positions. 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 in collaboration with the medical physicist and the radiation oncologist for cancer patients.
1. HAN 480 Intro. to Radiation Therapy and Medical Dosimetry
2. HAN 482 Intro. to Pathology
3. HAN 486 Principles and Practices of Radiation Therapy
4. HAN 488 Medical Imaging and Radiographic Anatomy
5. HAN 492 Radiation Oncology/Medical Physics II

J. Emergency and Disaster Management: EMT – Paramedic
This concentration expands upon conventional Emergency Medical Services (EMS) training and better prepares EMS personnel for the realities of today’s workforce. Curriculum provides a foundation in the recognition and management of HAZMAT incidents, a comprehensive overview of nuclear, biological, and chemical 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 EMTs through a 120-hour EMT course. Graduates of this major will be the first generation of baccalaureate-prepared emergency medical technicians who are also intensely prepared in emergency and disaster management. These highly trained EMS providers will then enter our nationally recognized paramedical training major (1204 hours of study). Job opportunities may be found in private or public ambulance companies, fire departments and hospitals.
1. HAN 370 Pre hospital Care
2. HAN 472 Weapons of Mass Destruction
3. HAN 473 Emergency Response to Terrorism
4. HAN 477 HAZMAT Training for EMS

For admission requirements to the clinical concentrations, please refer to the SHTM website at www.hsc.stonybrook.edu/shtm/bshs.

K. Nuclear Medicine Technology
This new concentration was designed to educate students to meet a growing need for highly trained technologists who utilize rapidly developing technologies to image the distribution of radioactive agents in the body. Nuclear medicine is widely used for imaging bodies of patients with cardiac conditions and those with cancer.

After completion of this concentration, students continue on to the post-baccalaureate program in order to be eligible to take the national registry examination. Job opportunities may be found in hospitals, physicians’ offices and diagnostic laboratories.
1. HAN 401 Radiobiology and Health Physics
2. HAN 402 Radiographic Anatomy and Pathology
3. HAN 426 Nuclear Medicine Instrumentation
4. HAN 427 Nuclear Medicine Procedures
5. HAN 429 Radiopharmacy and Therapy

For admission requirements to the clinical concentrations, please refer to the SHTM website at www.hsc.stonybrook.edu/shtm/bshs.

L. Radiologic Technology
This concentration was developed to train students to meet the growing demand for technologists who image the body through the use of radiation equipment (X-ray technology). As a member of the radiological team, technologists capture images of bones, organs, and blood vessels as prescribed by physicians to assist in the diagnosis of diseases or injuries. After completion of this concentration, students continue on to the post-baccalaureate program in order to be eligible to take the national registry examination. Job opportunities may be found in hospitals, physicians’ offices, urgent care clinics, diagnostic laboratories and industry.
1. HAN 401 Radiobiology and Health Physics
2. HAN 402 Radiographic Anatomy and Pathology
3. HAN 404 Radiology Instrumentation
4. HAN 405 Radiographic Technique
5. HAN 406 Radiographic Procedures and Positioning I

For admission requirements to the clinical concentrations, please refer to the SHTM website at www.hsc.stonybrook.edu/shtm/bshs.

M. Anesthesiology Technology
Designed to provide students with knowledge and skills for entry-level non-clinical positions in the field of anesthesiology technology. Upon
graduation, students may apply for admission to the 10-month, post-baccalaureate hospital-based Anesthesiology Technology program, which prepares students as entry-level members of anesthesia teams. Consult the Health Sciences Center Bulletin for admission requirements.

1. HAN 434 Corporate Compliance and Regulation
2. HAN 481 Intro. to Anesthesia
3. HAN 483 Cardiopulmonary Physiology for ASATT
4. HAN 489 Pharmacology for ASATT

For admission requirements to the clinical concentrations, please refer to the SHTM website at www.shtm/bshs.

Related Electives
AMS courses: AMS 102 Elements of Statistics, AMS 110 Probability and Statistics in the Life Sciences
ANP 300 Human Anatomy
ANT courses: ANT 102 Introduction to Cultural Anthropology, ANT 290 Science and Technology in Ancient Society, ANT 350 Medical Anthropology, ANT 367 Male and Female
BCP/MAR 394 Environmental Toxicology and Public Health
BIO courses: BIO 208 Cell, Brain, Mind, BIO 358 Biology and Human Social and Sexual Behavior
CFS courses: CFS 210 Introduction to Human Growth and Development in the Family Context, CFS 306 Violence in the Family, CFS 320 The Special Child
ECO courses: ECO 108 Introduction to Economic Analysis, ECO 303 Intermediate Microeconomics
HAD 210 Introduction to CLS
HAS/HNI 190 Introduction to the Health Professions, HAS 290 Medicine and Society
HAT 210 Introduction to Respiratory Care
HSP 390 Basic Mechanism in Pathology, HDH 301 Independent Readings and Research (Dental Health)
HMC courses: HMC/SOC 200 Medicine and Society, HMC 331 Legal and Ethical Issues in Healthcare
HSQ courses: HSQ 270 Emergency Response, CPR and Personal Safety, HSQ 271 Instructor of CPR, HSQ 272 Instructor of First Aid HSQ 325, 326 Instructor of Adapted Aquatics I, II, HSQ 329 Fieldwork in Adapted Aquatics Instruction
LHD courses: LHD 101 Human Development Seminar, LHD 301, 302, 401 Human Sexual and Gender Development Issues, LHD 305, 306 HIV Reduction in the Campus Community, LHD 307, 308 Lab. in HIV Reduction in the Campus Community, LHD 402 Parenting Children
LHW courses: LHW 102 Intro. to Health Professions, LHW 301 Issues in Health and Wellness, LHW 488 Internship
LRN courses: LRN 104 The Person, LRN 105 Ecology and Society, LRN 131 Thinking About Science, LRN 132 Thinking About Biology
MAR 340 Environmental Problems and Solutions
MEC 280 Pollution and Human Health
PHI 376 Philosophy and Medicine
SSE courses: SSE 350 Foundation of Education

Note on Related Electives:
Health Care Informatics: Ten credits in computer science electives are required; CSE 101 and CSE 114 are strongly recommended. In addition, students are encouraged to choose courses with designators BUS, CSE, ECO, and PSY. Relevant electives are subject to change. Call (631) 444-BSHS for current electives.

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