

## College of Natural, Applied and Health Sciences

The mission of the College of Natural, Applied and Health Sciences is consistent with the overall mission of the University. The College of NAHS has strong, quality program offerings in the sciences and health professions. The faculty and staff are committed to providing relevant education and services to a diverse student population. The goal is to prepare students to think critically and creatively so that they can adapt to changing social, economic and technological conditions. Building external collaborations with major technological corporations and the health care industry is an integral part of the colleges outreach mission, which enables it to provide valuable services to the community as well as increased opportunities for students.

We are proud to have been designated the Flagship State University for the Health Professions. Our graduates can be found practicing in hospitals and other health care agencies across New Jersey. Also, our programs in the Sciences have a long distinguished record of service to this region. So, whether you are looking to study in the Natural and Physical Sciences, Health Care, Mathematics, Technology, or Computer Science, you will gain a strong foundation at the College of Natural, Applied and Health Sciences.

*Interim Dean, Pablo Zafra*

*Assistant to the Dean, Lourdes F. Prieto*

*B-104, (908) 737-3600*

### ACADEMIC DEGREES, PROGRAMS

#### B.A. in Biology

- General Option
- Honors Option
- Teacher Certification Option
- Teacher of Students with Disabilities Option

#### B.S. in Biology

- General Option
- Biotechnology Option

#### B.A. in Chemistry

- General Option
- Preprofessional Option
- Teacher Certification Option

#### B.S. in Chemistry, Expanded Option

#### B.S. in Computer Science

- Information Systems Option

#### B.A. in Earth Science

- General Option
- Teacher Certification Option
- Teacher of Students with Disabilities Option

#### B. S. in Earth Science

- Earth System Science Option
- Geology Option
- Meteorology Option

#### B.A. in Mathematical Sciences

- Teacher Certification Option
- Teacher of Students with Disabilities Option

#### B.S. in Computer Integrated Design and Manufacturing Technology

#### B.S. in Electronics Technology

#### B.S. in Telecommunications and Information Technology

### HEALTH PROFESSIONS

#### B.S. in Health Information Management

- General Option
- Occupational Therapy Track

#### B.S. in Medical Technology

- General Option
- Cytotechnology Option
- Histotechnology Option

#### B.S.N. in Nursing

#### Post Baccalaureate School Nurse Program

### JOINT (OR COMBINED) DUAL DEGREE PROGRAMS

#### B.S. in Health Information Management/ M.S. Management Information Systems

#### B.S. in Health Information Management/ M.A. Communication Studies

#### B.A. / M.S. in Occupational Therapy

#### B.A. / DPT Physical Therapy (with UMDNJ)

### COLLABORATIVE PROGRAM

BA in Elementary Education Liberal Studies in Mathematics, Science, and Technology:

- Biology Specialization
- Earth Science Specialization
- Mathematics Specialization
- Technology Specialization

### DEPARTMENTS, FACULTY

#### Biological Sciences

Faculty: Codella, Field, Glazer, Hayat, James, Mancarella (Chairperson), Osborne, Porta, Pu, Rosenthal, Vassiliou, Yu, Zhang

#### Chemistry-Physics

Faculty: Castiglione, Criasia (Chairperson), Gao, Getzin, Hicks, Kampa, Kubow, Lees, Shin, Stokes-Huby, Vitale, Zarrilli

#### Geology and Meteorology

Faculty: Croft, Dobosiewicz, Krall, Kroll, Manfrino, Metz (Chairperson), Murphy, Ngoy, Yoh, Zois

#### Mathematics and Computer Science

Faculty: Abeles, Affouf, Alsina, Arnow, Avirappattu, Beaugris, Chang, Deavours, Emanouilidis, Hahn (Chairperson), Halper, Krantz, Lehmann, Lipson, Mathur, Narasimhan, Ryder, Santomauro, Stewart-Gardiner, Tse, Viglione, Wang, Wittenberg, Woubneh, Zafra

#### Technology

Faculty: Behi, Cokewood, Shahrabi (Chairperson)

#### Health Information Management

Faculty: Davis, Manger (Chairperson)

#### Medical Technology

Coordinator: Osborne

#### Nursing

Faculty: Campbell (Chairperson), Fitzgerald, Fitzsimons, Hascup, Krause-Parello, Neville, Pisani

#### Occupational Therapy

Faculty: Knis-Matthews, Richard, Stern (Chairperson)

## Health Professions

Kean University offers an array of professional programs in nursing and health care careers. Students with an interest in any of these programs should consult the appropriate program coordinator or the College advisor.

### PROFESSIONAL NURSING

The Baccalaureate of Science in Nursing (BSN) degree is offered to applicants who have completed lower division nursing education and hold a valid license to practice as a registered nurse (RN). The 125 credit, upper division program is accredited by the National League for Nursing Accrediting Commission (NLNAC).

### POST BACCALAUREATE SCHOOL NURSE PROGRAM (Non-Degree)

The Post Baccalaureate School Nurse Program at Kean University is approved by the NJ State Department of Education and prepares students for certification as "School Nurse/Instructional."

Registered Nurses with a baccalaureate degree in any major and minimum GPA of 2.75 may apply. To apply go to [www.kean.edu](http://www.kean.edu), please select "Apply online," then choose the application for "Post Baccalaureate Teacher Certification." Print a copy of the application, then carefully read and follow the directions for completion and submission.

### PREPROFESSIONAL MEDICAL PROGRAMS

#### Premedical and Predental

Although admissions requirements are not uniform among schools of medicine and dentistry, the following two programs include the courses required for entrance by most medical and dental schools: Department of Biological Sciences - B.S. or B.A. in Biology; Department of Chemistry-Physics - B.A. in Chemistry (Preprofessional). Other major programs may be selected if electives are chosen to fulfill the requirements of the medical or dental school(s) to which the student plans to apply.

Entering or transfer students interested in medical or dental school should consult a member of the Pre-Medical Advisory Committee for advisement. Names of committee members may be secured from the department offices of either Biological Sciences or Chemistry-Physics, or by viewing the Pre-Health Professions Web Page at <http://www.kean.edu/~biology/PREHEALTH>.

#### Other Preprofessional Medical Programs

Students with an interest in veterinary medicine, optometry, pharmacy, or other preprofessional medical programs should consult a member of the Pre-Medical Advisory Committee.

### Podiatric Medicine

Under an articulation agreement between Kean University and the New York College of Podiatric Medicine, students interested in pursuing a career in podiatric medicine can apply to the New York College of Podiatric Medicine in their junior year. Students admitted to the program can complete two degrees (B.A. in Biology from Kean University and Doctor of Podiatric Medicine [DPM] from the New York College of Podiatric Medicine) in only seven years rather than the more typical eight.

### HEALTH INFORMATION MANAGEMENT AND MEDICAL TECHNOLOGY

Baccalaureate programs are offered in medical technology (with options in cytotechnology and histotechnology) and health information management.

Both of these programs mentioned above can accommodate entering freshmen and transfer students from two or four-year institutions. The first two (preprofessional) years include general education requirements and basic courses in the sciences, mathematics and social sciences. The final two (professional) years include a sequence of courses and related clinical experiences in the professional area and advanced coursework in supporting disciplines. The curriculum of each program has been designed to enable the graduate to meet the requirements for eligibility for national or state certification. Each program has been accredited by the relevant professional association.

After completing the preprofessional requirements, students must apply for admission to the professional phase of the program. The number of students admitted to each program is limited by the availability of clinical placements, and the admissions process is selective. Students are advised to plan their coursework during the preprofessional two years in such a way that alternate majors are possible should they choose not to continue or should they not be admitted to the program of their choice.

### DUAL DEGREE PROGRAMS

#### OCCUPATIONAL THERAPY

The Dual Degree Program provides an opportunity to earn both an undergraduate degree in one of thirteen majors and a master's degree in occupational therapy. Students will select from a list of undergraduate majors in other disciplines for the undergraduate degree. After three years, or when the undergraduate and prerequisite courses are completed, students may apply to the Master's program in Occupational Therapy. If accepted, the first year of the M.S. program in occupational therapy will be used to complete the undergraduate degree, and the Bachelor's degree will be

awarded in the undergraduate discipline chosen. Upon completion of the requirements of the occupational therapy program, a Master of Science in Occupational Therapy will be awarded. Both degrees are awarded by Kean University.

#### PHYSICAL THERAPY

This Dual Degree Program is a collaborative effort between Kean University and the University of Medicine and Dentistry of New Jersey (UMDNJ), combining both a Bachelor's and Doctor of Physical Therapy degrees. It consists of undergraduate studies at Kean for the Bachelor's degree and graduate studies at UMDNJ in Newark leading to a Doctor of Physical Therapy degree (DPT). The Dual Degree program is available to students who do not already have a Bachelor's degree.

Kean University offers nine majors from which to choose for the Bachelor's degree. In the fall semester of the Junior year, students apply for admission to the graduate program in Physical Therapy. If accepted into the program (and upon completion of the undergraduate coursework), courses taken during the first year of the DPT will be used to complete the senior year of the undergraduate degree. After completing the first year of the DPT, Kean University will award the Bachelor's degree in the undergraduate discipline chosen. Students will continue the two additional years at UMDNJ to complete the requirements for the DPT degree, to be awarded by UMDNJ.

#### PHYSICIAN ASSISTANT PROGRAM

An articulation agreement between Kean University and UMDNJ for a BA Biology from Kean, MS in Physician Assistant from UMDNJ, has just been approved. For further details, contact the Department of Biology, 90-737-3650.

### JOINT ACCELERATED UNDERGRADUATE/GRADUATE DEGREE PROGRAMS

#### HEALTH INFORMATION MANAGEMENT AND MANAGEMENT INFORMATION SYSTEMS

#### HEALTH INFORMATION MANAGEMENT AND COMMUNICATION STUDIES

Joint programs are offered which enable students to complete a Bachelor's degree in Health Information Management with a Master's degree in either Management Information Systems or Communication Studies. Elective courses at the undergraduate level may be substituted by prerequisite requirements for the graduate degree. If accepted, graduate coursework may begin in the Senior year.

# Health Information Management

Chairperson: Prof. Barbara Manger  
T206 - (908) 737-3453

(This program is currently under review. For current status please contact the Chairperson.) The Health Information Manager is a member of the health care team and is the professional responsible for management of health information systems consistent with medical, administrative, ethical and legal requirements. Health Information professionals collect, analyze and utilize data to provide information critical to the health care industry. A Registered Health Information Administrator (RHIA) collects many kinds of data from a variety of sources, monitors the integrity of the information, ensures appropriate access to health records and manages the analysis and use of this data.

Health Information Management professionals are currently in high demand and this trend is expected to continue. The Bureau of Labor Statistics cites health information as one of the fastest growing occupations in the US. HIM professionals are often employed as department managers in hospital centers. In this setting, the major areas of responsibility in this setting include: systems analysis and planning; determining health information policies; planning; budgeting; acting as a liaison with other departments; evaluating employee performance; educating departmental staff, medical staff and ancillary departments to assure quality information; and serving on important committees such as quality management, utilization review and corporate compliance.

The need for accurate and up-to-date health data is not confined to health care facilities. RHIA's are also being employed by Health Maintenance Organizations, insurance companies, law firms, physician offices, government agencies, consulting firms, software companies and in the pharmaceutical industry. Future health information opportunities involve planning for and implementing computerized patient record systems. As we transition to the electronic health record, professionals with technical expertise, problem solving skills, knowledge of clinical medicine and superior communication skills are needed to develop and implement new systems as well as new policies and procedures in health care documentation and to protect patient confidentiality and data security.

The Commission on Accreditation of Health Informatics and Information Management Education (CAHIIM) currently accredits the Health Information Management Program. Upon satisfactory completion of course requirements, the graduate is eligible to apply to write the national registry examination. A passing grade on the examination establishes the graduate as a Registered Health Information Administrator (RHIA).

The program admits both undergraduate and second degree students. The undergraduate must have completed all the pre-professional coursework including program prerequisites and second degree candidates must complete prerequisites for admission to the program.

For entering freshmen, the program involves two years of pre-professional coursework and two professional years. The professional component includes didactic, laboratory and clinical experiences. Transfer students (including Registered Health Information Technicians) who meet all prerequisites may apply for admission directly to the professional phase. Transfer students who have not completed all prerequisites will be accepted to the university as pre-professional Health Information Management majors.

Health Information Management courses are taught primarily in the evening from 5-10:30 p.m. with few exceptions. Clinical experiences are required for graduation and must be scheduled during the daytime hours to allow adequate supervision at the clinical site. The first two clinicals are presently held one day per week on Thursdays in the Spring semester. The student is required to be available for the full eight hours on each of these clinical days. Management Affiliation is a five-week clinical experience where the senior student is placed in a clinical site for the first four weeks on a full-time, 40-hour/week basis. The fifth week is scheduled on campus.

Students are required to make the necessary arrangements at their places of employment and other commitments to be available for all clinical experiences, as attendance is mandatory.

Transportation to clinical sites is the responsibility of the student. In addition, a completed physical examination that includes current immunizations must be performed within three months prior to enrollment in HIM 3612 or the first scheduled clinical experience. The courses in the professional years are taught in sequence. Failure to complete course work in the proper sequence or earning less than a C will delay graduation. To continue in the professional curriculum a student must earn a grade of C or above in each course. No HIM course may be repeated more than once.

## ADMISSION REQUIREMENTS AND PROCEDURES:

In addition to the general college admission requirements, the Health Information Management program requires:

- Usually, completion of all pre-professional requirements with a "C" or above.
- Junior standing (completion of 56 semester hours) as of the Fall semester of intended enrollment.
- An overall grade point average of 2.5 on a 4.0 scale. This requirement is subject to change. Once in the program, students must maintain an overall GPA of 2.5 in all courses and a GPA of 2.5 in HIM courses.

- Submission of a formal application to the Health Information Management Program by March 1 immediately preceding the intended Fall semester enrollment.
- Three letters of recommendation submitted at the time of application.
- Official transcripts of all previous college courses. Students who have attended a foreign college or university are required to submit an official English Translation of the academic credits.

The Health Information Management application form, letters of recommendation, and official transcripts for student admission to the program must be submitted by March 1st immediately preceding the intended Fall semester enrollment. The class will be selected by June 15.

Health Information Management classes, with the exception of HIM 2010, HIM 3013, HIM 3113, HIM 3413, and HIM 3423 are restricted to students officially admitted to the program.

## B.S. DEGREE

GENERAL EDUCATION REQUIREMENTS			51
<b>FOUNDATIONS REQUIREMENTS</b>			<b>13</b>
GE	1000	Transition to Kean	1
ENG	1030	College Composition	3
MATH	1000	Algebra for College Students	3
COMM	1402	Speech Communications as Critical Citizenship	3
GE	2024	Research & Technology	3
<b>DISCIPLINARY/INTERDISCIPLINARY DISTRIBUTION REQUIREMENTS</b>			
<i>Humanities</i>			9
ENG	2403	World Literature	3
Select two courses from different areas:			
Fine Arts or Art History			3
Philosophy or Religion			3
Foreign Languages			3
Music or Theatre			3
Interdisciplinary			3
<i>Social Sciences</i>			9
HIST	1000	History of Civil Society in America	3
PSY	1000	General Psychology	3
Select one course from the following:			
Economics or Geography			3
Political Science			3
Sociology or Anthropology			3
Interdisciplinary			3

<i>Science &amp; Mathematics</i>		11
MATH	1016 Statistics	3
BIO	1000 Principles of Biology	4
BIO	2402 Human Anatomy & Physiology	4
<i>Health/Physical Education</i>		3
ID	1225 Issues of Contemporary Health	3
*Required Distribution Course		
<b>CONCENTRATION ELECTIVES</b>		<b>6-8</b>
<b>ADDITIONAL REQUIREMENTS</b>		<b>19</b>
MGS	2030 Organization & Management	3
MGS	3030 Human Resources Management	3
MGS	3040 Management Information Systems	3
ACCT	2200 Principles of Accounting	3
CPS	1231 Fundamentals of Computer Science	4
ENG	3090 Business & Professional Writing	3
<b>MAJOR REQUIREMENTS</b>		<b>50</b>
HIM	2010 Information Resources for Health Information Management	1
HIM	3013 Medical Terminology	3
HIM	3113 Legal Aspects of Medical Records	3
HIM	3126 Development and Retention of Medical Records	4
HIM	3212 Health Statistics	3
HIM	3300 Introduction to Coding	3
HIM	3413 Disease Pathology I	3
HIM	3423 Disease Pathology II	3
HIM	3612 Directed Practice I	1.5
HIM	3613 Directed Practice II	.5
HIM	4312 Performance Improvement in Health Care (WE)	3
HIM	4411 Computer Based Health Systems	3
HIM	4518 Organization and Management in Health Information Management	4
HIM	4521 Problem Solving Using Computer Software Applications	2
HIM	4522 Research in Health Information Management	3
HIM	4536 Health Care Finance	3
HIM	XXX HIM Elective	3
<i>Major/GE Capstone Course</i>		
HIM	4614 Management Affiliation	4
<b>FREE ELECTIVES</b>		<b>7-9</b>
(50% of free electives must be taken at the 3000-4000 level)		
<b>TOTAL</b>		<b>129</b>

## HEALTH INFORMATION MANAGEMENT COURSES

### HIM 2010 Information Resources for Health Information Management (1)

Introductory course covering information resource tools and strategies for developing information literacy. Uses involve library references, computerized search engines, Internet applications, and benchmarking with professional associations. Student self-assessments for measuring information literacy are developed and objectives set for graduates of the HIM Program (1 hr. lec.)

*Prerequisite: Health Information intended majors or acceptance into the Health Information Management Program or permission of instructor.*

### HIM 3013 Medical Terminology (3)

Word formation, derivations, and meanings of medical terms related to medical specialties, health services, and health related fields with application in the transcription of medical reports. (2 hr. lec./2 hr. lab)

*Corequisite: Bio 2402 or permission of instructor.*

### HIM 3113 Legal Aspects of Medical Records (3)

A study of the importance of medical records as legal documents. Includes the legal aspects of hospital and medical staff organization, release of information and legal actions requiring evidence from medical records. (3 hr. lec./0 hr. lab.)

### HIM 3126 Development and Retention of Medical Records (4)

A comprehensive study of the development and content, the technical evaluation and completion, and retention and storage of health records in acute care and non-acute care settings. (2 hr. lec./4 hr. lab.)

*Prerequisite: Acceptance into the Health Information Management Program.*

### HIM 3212 Health Statistics (3)

A comprehensive study of the principles of statistics applied to health data. Includes vital and other health statistics. (3 hr. lec.)

*Prerequisite: Math 1016.*

### HIM 3300 Introduction to Coding (3)

A course designed to introduce the student to concepts of medical coding utilizing classification systems such as the International Classification of Diseases (ICD), Current Procedural Terminology (CPT) and HCFA's Common Procedural Coding System (HCPCS). Also included are issues related to reimbursement and compliance with regulatory guidelines. (3 hr. lec.)

*Prerequisite: Admission to Health Information Management Program or permission of instructor.*

### HIM 3413 Disease Pathology I (3)

An in-depth study of disease processes which affect the human body with applications to the operation of a medical information system. (3 hr. lec./0 hr. lab.)

*Prerequisites: Bio 2402.*

### HIM 3423 Disease Pathology II (3)

Continuation of Disease Pathology I, with emphasis on diseases of individual organs. (3 hr. lec./0 hr. lab.)

*Prerequisite: HIM 3413.*

### HIM 3612 Directed Practice I (1.5)

Supervised learning experiences in health information departments chosen according to the standards of the American Health Information Management Association. One eight hour day per week for first 10 weeks of semester. (0 hr. lec./8 hr. lab.)

*Prerequisite: HIM 3300, HIM 3113 and HIM 3126.*

### HIM 3613 Directed Practice II (.5)

Supervised learning experiences in non-hospital health care facilities. (8 hr. lab.)

*Prerequisite: HIM 3613.*

### HIM 4312 Performance Improvement in Health Care - WE (3)

This course deals with performance improvement in the health care setting. Students learn about the history of quality assurance, traditional quality programs and why they failed. Quality Improvement, its philosophies, techniques and methods are explored in theory and application relating to a hospital-wide and health information management department quality improvement activities. Licensing and accreditation agencies and requirements for quality programs are also explored. (2 hr. lec./2 hr. lab.)

*Prerequisites: HIM 4518.*

*Writing Emphasis Course*

### HIM 4411 Computer Based Health Systems (3)

A study in the planning, analysis and selection of computer systems and information processing concepts in the allied health professions and in the setting of health care facilities. (3 hr. lec./0 hr. lab.)

*Prerequisite: CPS 1231.*

### HIM 4518 Organization and Management in Health Information Management (4)

The application of the principles of management and human resources as they apply to health information management and health care settings. (3 hr. lec./2 hr. lab.)

*Prerequisite: MGS 2030, MGS 3030 and HIM 3612.*

### HIM 4521 Problem Solving Using Computer Software Applications (2)

An overview of the capabilities and limitation of four software applications: presentation software, spreadsheets, statistical analysis packages, and relational databases. From multiple administrative and clinical case studies students are asked to select and use the most appropriate type of software for analyzing, problem solving and presenting information from each study. (1 hr. lec./2 hr. lab.)

*Prerequisite: HIM 4411.*

**HIM 4522 Research in Health Information Management (3)**

Introduction to independent research. Includes a research project within the Health Information profession. (2 hr. lec./2 hr. lab.)  
*Prerequisites: HIM 3212.*

**HIM 4536 Health Care Finance (3)**

Application course that explores the role of health information managers in the financial decision-making process within a healthcare organization, including reimbursement methodologies, revenue cycle management and budgeting.

*Prerequisite: HIM 4518 and ACCT 2200.*  
*Corequisite: HIM 4521.*

**HIM 4614 Management Affiliation (4)**

Supervised learning experience with the registered health information administrator and or department head of an affiliated health care facility to gain experience in Health Information Management. (0 hr. lec./8 hr. lab.)