HEALTHCARE SCIENCES
Physical & Occupational Therapy, Cytotechnology, Dental Hygiene,
Health Information Management, Clinical Laboratory Science, Nuclear Medicine Technology
What can I do with these majors?

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<th>PHYSICAL THERAPY</th>
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<tr>
<td>Physical therapy involves treatment through physical means for people disabled by illness, accident, or congenital handicap. Physical therapy seeks to improve mobility, relieve pain, or minimize permanent physical disabilities.</td>
<td>Hospitals</td>
<td>Earn a doctorate in physical therapy (DPT) from a program accredited by the American Physical Therapy Association. Programs include supervised clinical experiences. All states require licensure which includes passing the National Physical Therapy Examination. Approximately one third of physical therapists work in hospitals and another third in physical therapy offices. Obtain knowledge of several basic sciences including anatomy, physiology, biology, chemistry, and physics. Attain superior grades in pre-physical therapy coursework due to intense competition for admittance to physical therapy programs. Volunteer for a physical therapist in a hospital or clinic to gain experience and improve chances of acceptance into a program. Many programs require volunteer experiences and a good understanding of the field for admission. Develop strong interpersonal and communication skills, patience, and a desire to help individuals of all ages with disabilities. A positive attitude is important when working with patients. Manual dexterity and physical stamina are important in succeeding in physical therapy work. Some physical therapists complete a clinical residency after PT school to gain training and experience in a specialty. Fellowships in advanced clinical areas after residency are also available.</td>
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<td>Clinical Practice: Acute care Rehab/Sub Acute Care Extended Care Wellness and Prevention Sport and Fitness Management Education Research Consultation</td>
<td>Rehabilitation centers Physician offices, particularly orthopedic Hospices Schools Universities and colleges Federal and state government: Department of Defense Public Health Service Veterans Health Administration Indian Health Services</td>
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### Areas

**OCCUPATIONAL THERAPY**

Occupational therapy is the treatment of people who are unable to perform some everyday functions due to injury, illness, or disability. Occupational therapists utilize activities with specific goals to enhance the quality of life and increase the independence of individuals who have a mentally, emotionally, or physically disabling condition.

**Screening**
**Evaluation**
**Treatment:**
- Physical
- Psychosocial
- Social
- Vocational
**Follow-up**
**Administration**
**Teaching**
**Research**
**Specialties Include:**
- Geriatrics
- Pediatrics
- Mental Health
- Work and Industry
- Health and Wellness
- Low Vision
- Hand Therapy
- Driver Rehabilitation

### Employers

- Hospitals (including psychiatric and rehabilitative)
- Out-patient rehabilitation facilities
- Schools
- Group or private practice
- Nursing and residential care facilities
- Community mental health centers
- Adult daycare programs
- Job training centers
- Home healthcare agencies
- Universities and colleges
- Federal and state government:
  - Department of Defense
  - Public Health Service
  - Veterans Health Administration

### Strategies/Information

Earn a master's (MOT, MA, MS) or doctoral (OTD, less common) degree in occupational therapy to gain entry in the field.

Programs include supervised clinical fieldwork.

All states regulate licensure which requires passing an exam given by the National Board for Certification in Occupational Therapy.

Those who have passed the exam become Occupational Therapists Registered (OTR).

Build a solid foundation in physical, biological, and behavioral sciences.

Volunteer in an occupational therapy or related healthcare setting to experience the field firsthand and improve chances of program admittance.

Develop excellent communication skills which are important when interacting with patients and their families.

Individuals working in occupational therapy should possess patience and a true interest in helping people with disabilities reach their full potential.

Learn to work well within a team. OT's work with many other professionals, including physicians, physical therapists, and social workers in the rehabilitation of patients.

Occupational therapists may choose to specialize in a particular age group or type of disability.

Doctoral degree is often preferred for university teaching and administration positions.
### Cytotechnology

Cytotechnologists are highly skilled laboratory professionals who study the patterns of disease progression found in human cells. They detect subtle changes and clues within cells. With expert eyes, the cytotechnologist looks for the smallest abnormalities in color, shape, and size that may indicate clinically significant conditions. This profession provides the potential to help save lives by discovering disease early and uncovering information that informs effective treatment.

**Screening and Diagnosis:**
- Cancer
- Pre-cancerous abnormalities
- Benign tumors or growths
- Infectious organisms and inflammatory conditions

**Evaluation of Tissue:**
- Bladder
- Body cavities
- Bone and soft tissue
- Breast
- Central nervous system
- Female reproductive tract
- Gastrointestinal tract
- Liver
- Lung
- Lymph nodes
- Pancreas
- Salivary glands
- Thyroid

**Technological Equipment Operation:**
- Light microscopes
- Biomedical instrumentation
- Laboratory information systems
- Molecular Diagnostic Testing

**Employers**
- Hospital and private laboratories
- Federal and state government laboratories
- Public health facilities
- Research and biotechnology industry
- Healthcare administrative departments
- Educational institutions

**Strategies/Information**

Earn a Bachelor or Master of Science in Cytotechnology from a program accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Prepare for and pass the certification examination given by the American Society for Clinical Pathology’s Board of Certification.

Supplement curriculum with courses in biology that emphasize body structure, development, tissue organization, and function. Recommended courses include histology, cellular biology, and genetics. Additional recommendations may include other biological sciences such as zoology or ecology.

Become comfortable with applied learning techniques. Most programs utilize a combination of training activities such as microscopic evaluation, laboratory skills development, case presentations, research, community health projects, and supervised clinical laboratory site experiences.

Develop problem solving as well as effective written and verbal communication skills.

Display personal characteristics such as accuracy, responsibility, and motivation. Become comfortable making important decisions.

Plan to learn new technology and techniques to stay abreast of developments in the field.

Specialty certifications exist for those who want supervisory or other advanced positions.
DENTAL HYGIENE

Dental hygienists help people of all ages maintain optimal oral health by working with dentists to prevent and treat tooth decay, periodontal disease, oral cancer, and other conditions that affect oral function.

Specific areas of activity for dental hygienists include:
- Gathering data for a dental diagnosis
- Recording medical and dental histories
- Screening and charting oral structures and conditions
- Exposing and processing oral radiographs
- Dietary analysis
- Providing oral disease prevention information and instruction
- Monitoring oral health status of individuals
- Providing therapeutic services
- Removing calculus and plaque from the teeth
- Applying fluoride and dental sealants to the teeth

EMPLOYERS

Private dental offices and dental clinics
Federal, state, and local health departments or associated institutions
Hospitals and nursing homes
School districts or departments of education
Private business/industry
Correctional facilities
Private and public centers for pediatric, geriatric, and other individuals or groups with special needs
Managed care organizations

STRATEGIES/INFORMATION

An associate's or bachelor’s degree is required to enter the field in nearly all states.
A passing score on the Dental Hygiene National Board Examination and state or regional clinical examination is also required for licensure as a Registered Dental Hygienist (RDH).
The scope of practice for dental hygienists is determined by individual states.
Opportunities for practice are available throughout the world, particularly with the military, the US government, and US owned corporations.
A master’s degree in dental hygiene is available at some institutions.
Dental hygienists with bachelor’s or master’s degrees may work in teaching, research, or administrative positions.
Develop strong interpersonal and communication skills and an attention to detail.

HEALTH INFORMATION MANAGEMENT AND HEALTH INFORMATICS

HIM and informatics professionals play critical roles in maintaining, collecting, and analyzing the data that doctors, nurses, and other healthcare providers rely on in the delivery of quality healthcare.

Patient Health Information Management
Operations/ Medical Records Administration
Health Information Technology/Infrastructure
Computer Information Systems Management
Revenue Cycle Management/Billing and Coding
Personnel and Budget Administration
Quality Management and Improvement
Risk Management and Compliance
Privacy and Security
Utilization Review

Hospitals
Physician offices and clinics
Long-term care facilities
Rehabilitation centers
Insurance companies
Government agencies
Home care providers
Behavioral health facilities
Information systems vendors
Pharmaceutical companies
Research facilities
Consulting firms
Educational institutions

Earn a bachelor’s or master’s degree in Health Information Management or Health Informatics from a program accredited by the Commission on Accreditation of Health Informatics and Information Management Education (CAHIIM).
A passing score on a national examination is required for certification as a Registered Health Information Administrator (RHIA).
Visit a health information management department in a hospital to better understand the role of health information managers.
Research career opportunities through The American Health Information Management Association and The American College of Medical Informatics.
**Clinical Laboratory Science**

Clinical laboratory scientists, also known as medical technologists, work together with other members of the healthcare team to perform and supervise laboratory analyses on blood, body fluids, and tissue. They also provide data to detect, diagnose, and monitor disease. Medical technologists use medical equipment such as microscopes, computers, and other highly technical instruments to assist them in their work.

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<tr>
<td>Hematology</td>
<td>Hospital and private laboratories</td>
<td>Develop strong oral and written communication skills, interpersonal skills, orientation to detail, flexibility, and advanced technology skills. Federal legislation regarding Electronic Health Records (EHRs) has transformed this field in recent years.</td>
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<td>Immunohematology (Blood Banking)</td>
<td>Public health laboratories</td>
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<td>Microbiology</td>
<td>Biotechnology industry</td>
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<td>Clinical Chemistry</td>
<td>Pharmaceutical and chemical companies</td>
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<td>Immunology</td>
<td>Research and forensic laboratories</td>
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<td>Urinalysis</td>
<td>Veterinary clinics</td>
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<td>Mycology</td>
<td>Transplant and blood donor centers</td>
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<td>Parasitology</td>
<td>Fertility clinics</td>
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<td>Histocompatibility</td>
<td>Universities and colleges</td>
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<td>Molecular Diagnostics</td>
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<td>Laboratory product development and sales</td>
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Health Informatics Specialties Include: Clinical, Clinical Research, Consumer Health, Dental Mental Health, Nursing, Pharmacy, Primary Care, Public Health, Telemedicine and Mobile Computing, Translational Bioinformatics, and Veterinary Management Research
NUCLEAR MEDICINE TECHNOLOGY

Nuclear medicine is a highly specialized field that involves preparing and administering radioactive chemical compounds (radiopharmaceuticals) and performing imaging procedures using radiation-detecting equipment. Nuclear Medicine Technologists process data and provide images, analysis, and patient information to physicians who make diagnoses.

Diagnosis and Treatment (some applications):
- Neurology
- Oncology
- Orthopedic
- Renal
- Cardiac
- Pulmonary

Specialties:
- Nuclear cardiology
- Positron emission tomography (PET)

Clinical Research
Education
Administration
Training
Sales

Areas
- Community hospitals
- Teaching hospitals
- Medical centers
- Public health institutions
- Research institutes
- Outpatient imaging facilities
- Medical and diagnostic laboratories
- Physician offices
- Private clinics
- Commercial radiopharmaceutical suppliers
- Nuclear imaging equipment manufacturers

Employers

Strategies/Information
Secure a strong foundation in science and mathematics, along with interests in computer technology and medicine.
Develop strong interpersonal skills, as nuclear medicine technologists work directly with patients interviewing and providing instruction.
Conduct informational interviews or shadowing experiences with professionals, and plan to tour nuclear medicine facilities to confirm interest in the field.
Seek volunteer experience in a clinical setting, nuclear medicine if possible.
Earn a degree from a program accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT).
Seek certification through one of two national accrediting agencies: Nuclear Medicine Technology Certification Board (NMTCB) or The American Registry of Radiologic Technologists (ARRT); certification requirements vary by state and employer.
Consider specializing further in nuclear cardiology or positron emission tomography (PET).
Approximately two-thirds of Nuclear Medicine Technologists work in hospitals. Professionals may be on call in some hospital settings.
Part-time or shift work may be available.