

Florida Health Career Guide



Introduction

- The Florida Health Careers guide is designed to help people explore career possibilities in a wide array of health care fields and to provide a reference tool for librarians, career-planning professionals, school guidance counselors and occupational specialists. On these pages, health careers are organized into 16 categories by general profession type, and within each category the careers are grouped in alphabetical order. Each career page contains the following information.

- **Job Description**...is an overview of duties and responsibilities of a particular occupation. Responsibilities of workers in the same occupation will vary by employer, industry, and size of firm. Supervisory status, tools or equipment used and personal characteristics required for the profession are also discussed. In general, personal qualifications of all health workers include good health, emotional stability, and both the ability and the desire to work in helping the sick and the injured. Health care personnel must also be accurate, responsible, sympathetic, versatile, and willing to keep abreast of new medical procedures and technical equipment.

- **Areas of Specialization**... include the kind of specialties that exist within the occupation. For example, dentists may specialize in orthodontics, endodontics, periodontics, and prosthodontics, while radiologic technologists may specialize in trauma radiology, pediatric radiology, or chest radiology.

- **Work Environment**...showcases the most typical work-site characteristics. In general, more than half of healthcare workers are employed in hospitals. The remainder work in clinics, treatment and rehabilitation centers, physicians' offices, laboratories, nursing homes, health maintenance offices, home health care agencies, community facilities, research institutes, schools and colleges, governments, and manufacturing companies. Many health-related careers offer people the opportunity to work part-time, by appointment only, or to be self-employed. However, most jobs require 40 hours a week, Monday through Friday, Nights, weekends, and overtime are required in some health occupations, and some may require outdoor work or travel.

- **Job Outlook**...Provides employment projections based on known factors that will affect health-career opportunities in the state of Florida. The rate of job growth for all occupations in FL 2016, the most recent state information available at this publication was 1.4 percent. More recent information, such as the occurrence of vacancies due to industry expansion, workers leaving the labor force for other employment, and projected employment changes for each area may be obtained from various sources such as "Employ Florida"

<https://www.employflorida.com/vosnet/Default.aspx?plang=E>

- **Advancement**...discusses the possibilities for career advancement within the field.
- **Length of Training/Requirements**...covers many educational requirements such as duration of training for different levels of programs, entry requirements, and samples of core courses of study. The length of health occupations training can vary from several months of on-the-job training to 11 or more years of postsecondary education. In general, public vocational-technical centers offer certificate or diploma programs with two years or less of study; community colleges offer one-year certificates and two year, associate degree programs; and

colleges and universities offer bachelor's degree programs and graduate level programs. High school students who wish to prepare for a career in health care should study biology, health, chemistry, physics, mathematics, (algebra I & II and geometry), and English. Good communications skills in both writing and speaking are very important. Maintaining good grades in high school is also important, as admission to most health occupations is very competitive. As such requirements are subject to change, contacting a state professional association before embarking on a program of study is always wise.

- **Licensure and Certification**...requirements for occupations regulated by the state are provided here. The information on voluntary licensure/certification/ registration at the national level is also included when applicable and available. Certification usually requires graduation from an accredited training program, successful completion of a written or clinical examination, or work experience. Many employers prefer applicants who hold the certification even when voluntary certification is not required by the state. The benefits of being certified include proof of qualification, accessibility to a greater range of jobs, higher degree of professional prestige, eligibility for third party reimbursement, higher earnings, and greater potential for job advancement.

- **Salary**...This section cites the average hourly wage or the annual mean wage for the occupation in Florida or in the nation. Most workers also receive employer-paid benefits such as paid vacations, holidays, sick leave, health insurance, and pensions. Within every occupation, earnings may vary depending on education, level of certification, experience, level of responsibility, performance, type and size of facility, and the geographic area.

- **Educational Programs**—Many Educational Programs* in Florida offer health care professions training programs; they are listed in this section.

- *It is important to note that in many health professions, eligibility requirements for licensure or certification examinations may include a certificate, diploma, or other proof of graduation from an accredited educational program. It is crucial to establish that the chosen program has adequate accreditation prior to enrollment.

- **Professional Associations**

- This section lists professional associations and organizations along with their contact information. Many of these provide career-related information and services such as career opportunities, publications, educational programs offered in other states, and certification requirements. The State AHEC Programs wish to thank the expert readers for their critiques, and health-professional organizations that shared information.

- **Resources used in this guide are:**

- Employ Florida Marketplace--

- <https://www.employflorida.com/vosnet/Default.aspx?plang=E>

- Florida Department of Education-- <http://www.fl DOE.org/>

- Florida Department of Economic Opportunity-- <http://www.floridajobs.org/>

- US Department of Labor Bureau of Labor Statistics-- <https://www.bls.gov/>

○ Online resources were heavily utilized to access and provide the most current information available. Due to initiation or revision of educational programs, accreditation changes by professional associations, and/or legislation by government agencies which have oversight responsibilities for health matters, however, post-publication changes are inevitable. The information offered here is a starting point in exploration of a rewarding health career.

Clinical Laboratory Sciences

- Laboratory test results play a crucial role in the detection of many conditions as well as the diagnosis and treatment of diseases. Clinical laboratory personnel use a variety of sophisticated precision instruments such as microscopes, electronic counters, centrifuges, etc., to perform complex analyses on blood, tissue, and body fluids.

- Accuracy and the ability to work under pressure are important characteristics for clinical laboratory personnel. There are many areas of specialization in clinical laboratory science. Educational training ranges from one year after high school to the doctoral level and includes classroom instruction and clinical laboratory experience.

Blood Bank Technology Specialist

- **Description**—Specialists in blood bank technology perform and supervise both routine and specialized tests in blood centers and hospital-based transfusion services, using methodology that conforms to the Standards for Blood Banks and Transfusion Services of the American Association of Blood Banks.

Their duties include: testing for blood group antigens, compatibility and antibody identification; investigating abnormalities such as hemolytic disease of the newborn, hemolytic anemias, and adverse responses to transfusion; supporting physicians in transfusion therapy, including patients with coagulopathies or candidates for allogeneic organ transplant; blood collection and processing, including selecting donors, drawing and typing blood, and performing pretransfusion viral screening and confirmatory tests to ensure the safety of the patient. Since this is a postgraduate immunohematology and management program, supervision and/or teaching compose a considerable part of the responsibilities of the specialist in blood bank technology.

- **Work Environment**—Specialists in blood banking work in many types of facilities, including community blood centers, hospitals blood banks and transfusion services, transplantation laboratories and blood bank equipment and they supply vendors. They may also be part of a university facility. Some weekend and night duty, including emergency calls, may be required.

- **Job Outlook**—Job prospects will be best for medical and clinical laboratory technologists and technicians who complete an accredited education program and earn professional certification.

- **Length of Trainings/ Requirements**—College graduates with a bachelor's degree and certification as a medical technologist, plus one year of clinical laboratory experience in blood banking, or a bachelor's degree in a biological or physical science, plus two years of clinical blood bank laboratory experience, can apply to the one-year, CAAHEP approved specialist in blood banking program with most lectures and all tests presented online. Rotations to receive

clinical experience are performed at the student's location. The curriculum includes basic and advanced serological techniques, blood donation and product manufacturing, apheresis, viral disease testing, genetics, transfusion medicine practices, component therapy, quality systems and process control, HLA and transplantation, education and research, management, blood bank administration and other relevant topics.

- **Advancement**—Because this is a post-graduate certificate program, qualified specialists may advance to supervisory or administrative positions, or move into teaching, quality assurance or research activities, the criteria for advancement in this field are experience, technical expertise, and completion of advanced education courses.

- **Licensure/Certification**—Specialists in blood bank technology must pass or be eligible for licensure by the Board of Clinical Laboratory Personnel before being employed in Florida. Certification as a Specialist in Blood Bank Technology (SBB) is voluntary and may be obtained from the American Society of Clinical Pathologists (ASCP). Continuing education hours are required by the state of Florida every two years for license renewal. The SBB graduate is also eligible for a Florida Laboratory Supervisor's License.

- **Salary**—The national average salary for blood bank technology specialists, according to explorehealthcareers.org, is \$58,000 to 78,000. The ASCP 2013 Wage Survey shows that certified lab professionals earn more than non-certified.

- **Educational Programs**

- Certificate: Academic Center at OneBlood

- **Professional Associations**

- American Association of Blood Banks
- American Society of Clinical Pathologists
- Commission on Accreditation of Allied Health Education Programs

Resources:

Laboratory Medicine. The American Society for Clinical Pathology's 2013 Wage Survey of Clinical Laboratories in the United States | Laboratory Medicine. <http://labmed.oxfordjournals.org/content/44/4/e97.full>. Published November 2013. Accessed January 10, 2017.

Cytotechnologist

- **Description**—Cytology is the study of the formation, structure, and function of cells. Cytotechnologists are trained to work with pathologists to detect changes in cellular material from all body sites in the early diagnosis of cancer and other diseases. Physicians use the information supplied by the cytotechnologists to make a diagnosis. Cytotechnologists work with a wide variety of laboratory specimen preparations and a basic knowledge of contemporary procedures and technologies such as image analysis, flow cytometry, immunohistochemistry, electron microscopy, molecular diagnostic procedures, and automation. The cytotechnologist's role extends beyond the detection of malignancy and include such issues a quality improvement, laboratory management, teaching, research, and consumer/patient education. They should have excellent concentration and good judgment capabilities.

- **Areas of Specialization**—Cytology

- **Work Environment**—They may work in hospitals, private laboratories, research or teaching positions. Cytotechnologists always work under the supervision of a pathologist.

- **Job Outlook**—The number of medical and clinical technologists in Florida as of 2015 was 10,380 with a projected growth of 14 percent.

- **Length of Trainings/ Requirements**—A bachelor's degree with three years of college education plus one calendar year of special instruction in cytotechnology is required for entry level competency. The curriculum emphasizes embryology, cytochemistry, parasitology, microbiology, histology, and inflammatory diseases. A bachelor's degree is required to take the registry examination of the American Society for Clinical Pathology. Continuing education hours are required every two years for license renewal in the state of Florida.

- **Advancement**—A cytotechnologist with a baccalaureate degree and five years of experience, a master's degree and four years of experience, or a doctorate degree and three years of experience qualify to be a specialist in cytotechnology. These specialists are skilled in examining all types of body specimens, including needle aspirates. Senior cytotechnologists, supervisors, or educators are generally specialists in cytotechnology.

- **Licensure/Certification**—The state of Florida recognizes registration by the American Society for Clinical Pathologists in lieu of a licensure exam.

- **Salary**—Not available on BLS and book referenced FHA

- **Educational Programs**

- Certificate

- UF Health Jacksonville

- **Professional Associations**

- American Society for Clinical Laboratory Science

- American Society for Cytotechnology

- American Society of Clinical Pathologists

- American Society of Cytopathology
- International Academy of Cytology

Resources:

Histotechnician/ Histotechnologist

- **Description**—Histologic technicians and technologists prepare slides of sections of body tissue for microscopic examination by pathologists (medical doctors who diagnose the cause and nature of diseases) and scientists.

The process of preparing human and animal tissue specimens includes tissue fixation, dehydration, sectioning, mounting, and special staining. Histotechnicians and histotechnologists both must value precision, have very good hand-eye coordination, be very reliable, and enjoy solving problems.
- **Areas of Specialization**—Histotechnicians prepare routine diagnostic histologic preparations using standard procedures under close supervision and review. A higher standard of education and experience is generally required for histotechnologists, who sometimes function as section supervisors, teach students, and perform more complex analyses such as immuno histochemical techniques. Some are learning flow cytometry techniques, as well as enzyme histochemical techniques as in muscle biopsy laboratories.
- **Work Environment**—Most histologic technicians/technologists work in hospitals or private pathology laboratories; others may work in research institutions, industrial laboratories, or government agencies. Hours and work environment will vary according to the size and type of employment setting. Histotechnicians and histotechnologists in large hospital settings may work day, evening, or night shifts and weekends and holidays. Those in smaller settings may work rotating shifts or may be on call in case of emergencies.
- **Job Outlook**—There is an anticipated annual growth rate of 1.8 percent for medical and clinical laboratory technologists and 2.3 percent for medical and clinical laboratory technicians for the years of 2014 to 2024.
- **Length of Trainings/ Requirements**—The following requirements must be met in order to sit for the American Society for Clinical Pathology examination to be certified as a histotechnologist:
 - To be eligible for this ASCP examination category, an applicant must satisfy the requirements of at least one of the following routes:
 - Route 1: Baccalaureate degree from a regionally accredited college/university with a combination of 30 semester hours (45 quarter hours) of biology and chemistry (must include credit hours in both) AND successful completion of a NAACLS accredited histotechnician or histotechnology program within the last 5 years, OR
 - Route 2: Baccalaureate degree from a regionally accredited college/university with a combination of 30 semester hours (45 quarter hours) of biology and chemistry (must include credit hours in both) AND one year full-time acceptable experience in a histopathology laboratory within the last ten years. This year of experience must be under the supervision of a pathologist (certified by the American Board of

Pathology in Anatomic Pathology) or an appropriately board certified medical student.

- **Advancement**—Histotechnicians who want to advance to histotechnologist status may complete a Baccalaureate degree in any of the natural sciences or health administration field in order to sit for the American Society for Clinical Pathology Examination as a histotechnologist.
- **Licensure/Certification**—In January 2002, histologic technicians/technologists must pass the licensure examination administered by the American Society of Clinical Pathologists before seeking employment in Florida. Continuing education hours are required every two years for license renewal.
- **Salary**—The annual mean wage for medical and clinical laboratory technicians employed in Florida in 2015 was \$38,080 while the annual mean wage for medical and clinical laboratory technologists employed in Florida in 2015 was \$60,960.
- **Educational Programs**
 - Certification
 - Barry University
 - Associate in Science (AS)
 - Florida State College at Jacksonville
 - Keiser University
 - Lakeland Community College
 - Miami Dade College
 - Master's
 - Barry University
- **Professional Associations**
 - American Society of Clinical Pathologists
 - National Society for Histotechnology
 - Florida Society for Histotechnology

Resources

U.S. Certification. U.S. Certification. <https://www.ascp.org/content/board-of-certification/getcertified#tabs-eligibility>. Accessed January 10, 2017.

29-2012 Medical and Clinical Laboratory Technicians. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes292012.htm#st>. Accessed March 31, 2017.

29-2011 Medical and Clinical Laboratory Technologists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes292011.htm#st>. Accessed March 31, 2017.

Medical and Clinical Laboratory Technologists and Technicians Job outlook. U.S. Bureau of Labor Statistics. <https://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm#tab-6>. Accessed March 31, 2017.

Medical Laboratory Technician

- **Description**—Medical laboratory technicians (MLTs) often work under the supervision of medical technologists to perform routine clinical laboratory tests on blood, tissue, and bodily fluids to help in the diagnosis and treatment of diseases. Technicians' duties include collecting blood samples, preparing chemical solutions, preparing and analyzing specimens, keeping records of laboratory tests, running and maintaining quality control, troubleshooting instrumentation, and reporting results to head nurses or physicians. Medical laboratory technicians must be self-motivated, accurate, dedicated, and pay great attention to detail.
- **Areas of Specialization**—Like medical technologists, technicians use laboratory instruments ranging from microscopes and computers to automated analyzers in the areas of chemistry, hematology, urinalysis, immunohematology/blood banking, immunology, and microbiology.
- **Work Environment**—Medical laboratory technicians work in hospitals, physicians' office laboratories, reference laboratories, and educational facilities.
- **Job Outlook**—The number of medical and clinical laboratory technologists employed in the state of Florida in 2016 was 6,540. It is projected that in 2024 there will be 7,763, a 18.7 percent growth.
- **Length of Trainings/ Requirements**—The period of training in order to sit for the licensure exam is two years in a community college resulting in an associate's degree. One year of training in a vocational education institution will result in a certificate or Applied Technology diploma which is transferable to Florida Community Colleges toward an associate's degree. Studies begin with classroom instruction followed by practical laboratory application in urinalysis, hematology, immunology/serology/immunohematology/blood banking, microbiology, and clinical chemistry.
- **Advancement**—Medical laboratory technicians can advance to medical technologists with additional education and experience and by passing the licensing exam at the technologist level.
- **Licensure/Certification**—Graduates completing medical laboratory technician training programs must pass a national certification examination and obtain a Florida Clinical Laboratory Personnel License before seeking employment in Florida. Graduates of National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)-accredited associate degree programs who pass the technician licensure exam are eligible to sit for the technologist level exam without further training or experience. Maintains national certification is voluntary and may be obtained from the American Society of Clinical Pathologists or the American Medical Technologists. Continuing education hours are required every two years for license renewal.

- **Salary**—In 2015, the Bureau of Labor statistics recorded that the annual mean wage of medical and clinical laboratory technicians in Florida was \$37,450 and the annual mean wage for medical and clinical laboratory technologists was \$60,330.
- **Educational Programs**
 - Diploma
 - American Health Institute
 - D G Erwin Technical Center
 - Marion County Community Technical and Adult Education Center
 - Associate Degree
 - Eastern Florida State College
 - Florida State College at Jacksonville
 - Fortis Institute
 - Indian River State College
 - Keiser University
 - Miami Dade College
- **Professional Associations**
 - American Society of Clinical Pathologists
 - American Society for Clinical Laboratory Science
 - American Medical Technologists

Resources

29-2012 Medical and Clinical Laboratory Technicians. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes292012.htm#st>. Accessed February 2, 2017.

29-2011 Medical and Clinical Laboratory Technologists. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes292011.htm#st>. Accessed February 2, 2017.

U.S. Certification. U.S. Certification. <https://www.ascp.org/content/board-of-certification/getcertified#tabs-eligibility>. Accessed January 11, 2017.

Medical and Clinical Laboratory Technologists and Technicians. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm#tab-3>. Accessed January 11, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 11, 2017.

Medical Technologist/ Clinical Laboratory Scientist

- **Description**—Medical technologists, also known as clinical laboratory scientists, analyze human blood, tissues, and body fluids. They also oversee the performance of thousands of types of medical laboratory tests using a wide variety of precision instruments. They may also conduct research and develop scientific methods to advance the study of disease processes. Medical technologists exercise independent judgement, correlate test results, and interpret the findings with respect to normal or abnormal ranges. Physicians depend on medical technologists to produce reliable and valid results which may be used in determining the presence, extent, and possible cause of disease.
- **Areas of Specialization**—Medical technologists may work in several different areas of the clinical laboratory including clinical chemistry (analyzing chemical substances present in blood); blood banking (involving the preparation of blood components and plasma for transfusions); immunohematology (determining if a donor's blood can be safely transfused to the patient); hematology (examining abnormal cells and diseases affecting blood); microbiology (identifying the bacteria, fungi, and parasites that cause infectious disease); immunology (examining the degree of immunity or resistance to disease to and assisting in studies for organ transplantation); urinalysis (involving chemical and cellular analysis of urine); and toxicology (the identification of toxic substances and drugs in body fluids).
- **Work Environment**—The majority of medical technologists work in hospital laboratories. Others work in independent laboratories, reference laboratories, clinics, health maintenance organizations (HMO), public health agencies, pharmaceutical firms, research institutions, scientific equipment companies, physicians' offices, and as teachers in college clinical laboratory science programs. The working environment is as varied as the types of practice in which medical technologists are engaged. Because of hospital standards, the laboratory environment is generally well-lighted and clean. National requirements for safety equipment and proper professional attire provide assurance to those who work in clinical laboratories.
- **Job Outlook**—The number of medical and clinical laboratory technologists employed in Florida in 2016 was 11,025. It is projected that in 2024 there will be 12,640. This represents a 14.7 percent growth.
- **Length of Trainings/ Requirements**—Bachelor's degree programs in medical technology require three or four years of college education plus one year of clinical laboratory education and experience in an accredited health facility. The courses include general knowledge courses with high emphasis in chemistry, biological sciences, mathematics, and computer science plus all of the clinical courses that are practice areas for medical technologists. These include clinical chemistry, bacteriology, immunology,

hematology, immunohematology, virology, parasitology, mycology, and molecular diagnostic testing.

- **Advancement**—Experienced medical technologists may advance to supervisory positions as chief medical technologist, or laboratory manager, or laboratory director in large hospitals. Specialization and graduate education are available in most of the clinical sciences. Opportunities for faculty positions in medical laboratory science programs are open to those with graduate degrees and interest in teaching.
- **Licensure/Certification**—Medical technologists must pass an acceptable national certification examination before becoming eligible to practice in Florida. Students who graduate from accredited medical laboratory science programs are also eligible to take the national certification examinations, such as those administered by the American Society of Clinical Pathologists (ASCP), the National Certification Agency for Medical Laboratory Personnel (NCA), or the American Medical Technologists (AMT), and other organizations. Continuing education hours are required every two years for license renewal.
- **Salary**—The Bureau of Labor statistics states that the annual mean wage of medical technologists is \$60,330 per year or \$28.43 per hour.
- **Educational Programs**
 - Bachelor’s Degree
 - University of West Florida
 - Santa Fe College
 - University of South Florida
 - University of Central Florida
 - Florida Gulf Coast University
- **Professional Associations**
 - American Medical Technologists
 - American Society for Clinical Laboratory Science
 - American Society of Clinical Pathologists

Resources

29-2011 Medical and Clinical Laboratory Technologists. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes292011.htm#st>. Accessed February 2, 2017.

Medical and Clinical Laboratory Technologists and Technicians. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm#tab-3>. Accessed January 11, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 11, 2017.

U.S. Certification. U.S. Certification. <https://www.ascp.org/content/board-of-certification/getcertified#tabs-eligibility>. Accessed January 11, 2017.

Phlebotomist

- **Description**—Phlebotomists are trained to draw blood samples from people of all ages by venipuncture, skin puncture, or arterial collection as needed for medical tests and blood donations. In the practice of phlebotomy, safety precautions must be taken to prevent the transmission of infectious diseases. Phlebotomists are instructed to adhere to strict policies and procedure accurately and effectively while treating the patient with care.
- **Work Environment**—Phlebotomists may work in hospital/commercial laboratories, clinics, large medical offices, blood banks and occasionally in scientific or product development research, or marketing and sales of homecare products.
- **Job Outlook**—Approximately 193 job openings are expected each year in Florida until 2024.
- **Length of Trainings/ Requirements**—The training takes 150 to 230 hours and may be obtained in health facilities, vocational schools, and community colleges. The curriculum may include instructions in venous blood specimens collection and handling, skin puncture collection techniques, and safety in blood collection.
- **Advancement**—Phlebotomists may advance to phlebotomy facilitator or supervisory positions.
- **Licensure/Certification**—Although there is no state licensure for phlebotomists, those who obtain certification from national credentialing agencies such as the National Credentialing Agency for Laboratory Personnel, American Society of Clinical Pathologists, and the American Society of Phlebotomy Technicians will have a better chance for employment. To be eligible to take the certification exam, the student must complete one year as a part-time phlebotomist or six months as a full-time phlebotomist or successfully complete an accredited phlebotomy training program, including at least 100 documented successful venipunctures and 25 documented successful skin punctures. Continuing education hours are required every year to maintain certification.
- **Salary**—According to the Bureau of Labor Statistics, the mean hourly wage of phlebotomists in Florida was \$14.19 in 2015.
- **Educational Programs**
 - Diploma
 - ATA Career Education
 - City College
 - Jose Maria Vargas University
 - Certificate
 - Charlotte Technical College
 - Eastern Florida State College
 - Florida Gateway College
 - Florida Panhandle Technical College
 - Indian River State College

- Lake Technical College
- Lindsey Hopkins Technical Education Center
- Lorenzo Walker Institute of Technology
- Manatee Technical Institute
- Marion County Community Technical and Adult Education Center
- Miami Dade College
- Pasco-Hernando State College
- Pensacola State College
- Pinellas Technical College-Clearwater
- Seminole State College of Florida
- Sheridan Technical College
- South Florida State College
- Ultimate Medical Academy
- William T McFatter Technical College
- Yechanlaz Instituto Vocaciona

○ Associate

- Saint Johns River State College

● **Professional Associations**

- American Society of Phlebotomy Technicians Inc.
- National Center for Competency Testing
- American Medical Technologists
- American Society for Clinical Pathology
- American Society of Phlebotomy Technicians
- National Phlebotomy Association
- American Phlebotomy Association

Resources

31-9097 Phlebotomists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes319097.htm>. Accessed January 12, 2017.

Phlebotomist work Environment. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/ooh/healthcare/phlebotomists.htm#tab-3>. Accessed January 12, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 11, 2017.

Dental Careers

- Dentistry is the health profession that prevents and correct problems of the teeth, gums, and mouth.
- The practice of dentistry involves taking x-rays, locating and filling cavities in teeth, straightening crooked teeth, extracting teeth, repairing fractured teeth, treating gum diseases, placing protective plastic sealants on children's teeth, and performing dental surgery.
- Dental services are needed among all age groups. Like medicine, there are many dental specialties.
- Dentists are the major practitioners of dental care. They are assisted by specially trained assistants who perform office work, assist in "chairside" duties, clean teeth, make dentures and crowns, provide patient education. Other members of the dental health care team include dental hygienists, dental assistants, dental laboratory technicians, and dental laboratory assistants. The practice of dentistry requires good manual dexterity, good eyesight, and the ability to work with all types of people.
- The prevention of dental disease damage has come to be a major focus in dentistry. Instruction in dental hygiene has long been crucial. Now, effective prevention requires added consciousness of specific disease-causing behaviors such as tobacco use. As a result, the allied dental health care team is responsible to become more educated about such dangers and to develop skill in motivating clients to deal with them effectively.

Dental Assistant

- **Description**—Dental assistants help to prepare for and facilitate dental exams and treatment. Dentists rely greatly on the skill of a dental assistant as a “third hand” to perform fast, safe, and accurate work. Clinical duties, performed under the instruction and supervision of a dentist include: helping the manage the dental office, preparing patients for treatment, passing the dentist the proper instruments, polishing teeth, charting patient treatment, processing dental x-ray film, sterilizing and disinfecting instruments, providing oral hygiene instruction, preparing dental filling materials, taking impressions for study purposes or models, and making casts of teeth
- **Areas of Specialization**—Dental assistants are responsible for working directly with dentists while patients receive treatment. They maintain patients’ charts, mix materials and pass instruments to the dentist during procedures, sterilize instruments, make temporary crowns and impressions of teeth for study models, polish patients’ teeth, and take and develop X-rays. They also assist with tasks such as scheduling appointments, treatment planning, and ordering supplies.
- **Work Environment**—Dental assistants may work alongside dental hygienists and/or dental laboratory technicians. They work in private dental offices, dental schools, hospitals, clinics, and public health settings. Most dental assistants work 32 to 40 hours per week.
- **Job Outlook**—The number of dental assistants employed in Florida in 2016 was 17,919. It is projected that in 2024 there will be 20,932, an annual average growth rate of 2.9 percent. This increase is due to a trend among newer dentists to use one or more assistants, vacancies filled by former assistants returning to school, and by an overall increase in dental care as the population increases.
- **Length of Trainings/ Requirements**—High school graduates may become entry-level dental assistants through on-the-job training. Accredited dental assisting training programs prepare the student for certification and take one year or less to complete. Training programs include instruction in oral and dental anatomy, dental radiography, clinical procedures, nutrition, community dentistry, and dental office management. Clinical experience is obtained in affiliated dental schools, local clinics, or selected dental offices. A dental radiology certificate is required before an assistant can expose radiographs in Florida. Dental assistants must have formal training to receive an expanded functions certificate in the state of Florida. This allows them to perform selected remedial tasks such as applying sealants, placing temporary crowns, removing sutures, and taking impressions.
- **Advancement**—Opportunities for career advancement exist for dental assistants. Many go on to become practice managers, practice consultants, and regional directors of corporate dental practices. Others successfully pursue dental marketing careers with dental equipment and supply companies. Graduates of ADA accredited dental assisting

programs pursuing a degree in dental hygiene may receive advanced placement in some Florida community college dental hygiene programs.

- **Licensure/Certification**—In Florida, dentists prefer their dental assistants to be graduates of accredited dental assisting training programs; they are then eligible to take the national certification examination offered by the American Dental Assisting National Board. However, national certification is not typically required for employment
- **Salary**—The annual mean wage of dental assistants in Florida in 2015 was \$35,780 or \$16.86 per hour.

- **Educational Programs**

- Diploma

- Daytona State College
- Broward College
- Fortis College
- Concorde Career Institute
- Everest University
- Travis Career Center
- Compu-Med Vocational Careers Corp
- Professional Training Centers
- Lincoln College of Technology-West Palm Beach
- Manatee Technical Institute
- Orlando Tech
- Indian River State College
- Concorde Career Institute-Tampa
- Pasco-Hernando Community College
- Pinellas Technical Education Center

- Certificate

- Tallahassee Community College
- Florida State College at Jacksonville
- Orange Technical College-Orlando Campus
- Hillsborough Community College – Dale Mabry Campus
- Lindsey Hopkins Technical College
- Florida State College at Jacksonville
- Atlantic Technical Center
- Broward College
- Superior Career Institute
- Robert Morgan Educational Center
- Palm Beach State College
- Lorenzo Walker Institute of Technology
- Meridian College
- Anthem College

- Lincoln Technical Institute-Fern Park
- Fortis Institute
- Remington College
- Sanford
- Associate degree
 - Broward College
 - College of Central Florida
 - Anthem College
 - Eastern Florida State College
- Ultimate Medical Academy
- Pasco-Hernando Community College
- Everest University
- Indian River State College
- Ultimate Medical Academy

● **Professional Associations**

- American Dental Assistants' Association
- American Dental Association
- The Dental Assistants Professional Association
- Florida Dental Assistants Association

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 11, 2017.

31-9091 Dental Assistants. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes319091.htm>. Accessed January 12, 2017.

Dental Assistant. U.S. Bureau of Labor Statistics. <https://www.bls.gov/ooh/healthcare/dental-assistants.htm#tab-3>. Accessed January 12, 2017.

Dental Hygienist

- **Description**—Dental hygienists are focused on preventing dental disease. They are educated and trained to evaluate the patient’s oral health, expose, process and interpret dental x-ray films. Remove calculus deposits, stains, and plaque above and below the gum line. They also apply preventative agents such as fluorides and sealants to teeth. They provide education about oral health care, selecting toothbrushes, the use of dental floss, and oral health problems related to diet or tobacco products. Additionally, dental hygienists receive training in assisting and reception responsibilities so they can be comprehensive team members in the dental practice. Dental hygienists must be able to work well with people and have excellent manual dexterity and tactile sensitivity to properly manipulate dental instruments in the patient’s mouth.
- **Work Environment**—In Florida, dental hygienists work under the supervision of dentists and most work in private dental practices. However, they may also be employed by hospitals, clinics, public health agencies, schools, and private industry. Many dental hygienists work in more than one office on a part-time basis. Most work about 35 hours per week.
- **Job Outlook**—The number of dental hygienists employed in Florida in 2016 was 10,915. It is projected that in 2024 there will be 12,767, an annual average growth rate of 2.12 percent. These job openings result from the growing need for dental care and a growing awareness of preventative dental care.
- **Length of Trainings/ Requirements**—Completion of a two-year program in a community college leading to an associate of science degree is the minimum educational requirement. However, bachelor’s and master’s degree programs are available at numerous colleges and universities in the United States and are required for research and teaching. Some of the core courses of a dental hygiene program include clinical procedures, preventative oral hygiene, community and public health dentistry, dental anatomy, pharmacology, dental materials, instrumentation, nutrition, and dental radiography. Some programs have prerequisite courses that may require a student to complete at least one year of college prior to being accepted into the program.
- **Advancement**—Dental hygienists may obtain advanced degrees and become involved in research, teaching, or administration of dental hygiene education programs. Developing and promoting community dental health programs offers additional opportunities.
- **Licensure/Certification**—Dental hygienists must graduate from an accredited program before they are eligible to take national and state licensure exams. The national examination is given by the American Dental Association, while each state administers its own licensing examination. The title ‘Registered Dental Hygienist’ is awarded upon successful completion of the licensing process. In Florida and most other states, continuing education hours are required every two years for license renewal.

- **Salary**—The Bureau of Labor Statistic reported an annual mean wage of \$63,370 for dental hygienists in Florida in 2015.
- **Educational Programs**
 - Bachelors
 - St Petersburg College
 - State College of Florida
 - Associates
 - St Petersburg College
 - Tallahassee Community College
 - Sanford-Brown College
 - Florida Southwestern State College
 - Valencia College
 - Santa Fe College
 - Florida State College of Jacksonville
 - Florida National University
 - Eastern Florida State College
 - Indian River State College
 - Pensacola State College
 - Daytona State College
 - Broward College
 - Hillsborough Community College
 - Miami Dade College
 - South Florida State College
 - Pasco-Hernando State College
 - Gulf Coast State College
- **Professional Associations**
 - American Dental Hygienists' Association
 - National Dental Hygienists' Association
 - International Federation of Dental Hygienists

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 12, 2017

29-2021 Dental Hygienists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes292021.htm>. Accessed January 12, 2017.

Dental Laboratory Technician

- **Description**—Dental laboratory technicians create and repair dentures, bridges, crowns, braces, and other appliances using materials like gold, silver, stainless steel, porcelain, and plastic according to dentists' prescriptions. Dental laboratory technicians have limited contact with patients and spend most of their time working with small hand tools, such as files and polishers. They work with various materials, including wax, plastic, and porcelain to make prosthetic appliances. Technicians may also use computer programs to create appliances or to get impressions sent from a dentist's office.
Precision, a high degree of manual dexterity, good vision, attention to detail, and the ability to recognize color shadings and variation in shapes are important traits for this occupation.
- **Areas of Specialization**—Technicians can specialize in the areas of crowns and bridges, dental ceramics, partial dentures, complete dentures, and orthodontic appliances.
- **Work Environment**—They work primarily in commercial dental laboratories. Dentists' offices, dental supply companies, and research facilities are other choices. They usually work 40-hour weeks in clean, well-lighted, and well-ventilated areas.
- **Job Outlook**—The Florida Department of Economic Opportunity expects a 9.6 percent job growth for dental laboratory technicians by 2024. Aesthetic dentistry is expected to grow due to the emergence of the baby boomer population into retirement.
- **Length of Trainings/ Requirements**—High school graduates may learn the skills through on-the-job training or in a community college. Academic programs usually require two years or less to complete and lead to either a certificate or an associate degree. These programs include both classroom instruction and "hands-on" practical experience in dental materials, complete dental techniques, theory in crown and bridge, basic ceramics, and advanced fixed and removable specialties. A student graduating from a traditional program which provides both theoretical and applied skills in the field is a sought-after commodity and thus would be a more attractive candidate for both employment and higher starting wages.
- **Advancement**—Many technicians are self-employed and own and operate their own laboratories. There are also opportunities to progress into supervisory or managerial positions in the larger commercial labs.
- **Licensure/Certification**—Certification is voluntary and available through the National Board of Certification of the National Association of Dental Laboratories in one or more of the five specialties.
- **Salary**—The annual mean wage for dental laboratory technicians in Florida in 2015 was \$39,220 or \$18.86 per hour.
- **Educational Programs**
 - Diploma
 - Florida National University

- Certification
 - William T McFatter Technical College
- Bachelor's Degree
 - Florida National College
 - Indian River State College
- **Professional Associations**
 - Florida Dental Laboratory Association
 - National Association of Dental Laboratories

Resources

51-9081 Dental Laboratory Technicians. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes519081.htm>. Accessed January 18, 2017.

Dental and Ophthalmic Laboratory Technicians and Medical Appliance Technicians. U.S. Bureau of Labor Statistics. <https://www.bls.gov/ooh/production/dental-and-ophthalmic-laboratory-technicians-and-medical-appliance-technicians.htm>. Accessed January 18, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 18, 2017

Dentist

- **Description**—Dentists examine, prevent, diagnose, and treat diseases, injuries, and abnormalities of teeth, gums, and adjacent tissues and structures of the mouth. They are titled as either Doctor of Dental Surgery (DDS), Doctor of Medical Dentistry (DMD), or Doctor of Dental Medicine (DDM).

Most dentists are general practitioners, although there are many specialty areas. Dentists supervise the work of dental hygienists, dental assistants, and dental laboratory technicians. They have the final responsibility for all dental services in the work settings. Dentists' work involves highly personal contact with patients, which demands maturity, integrity, intellectual honesty, ethics, and a sense of responsibility. Good hand and eye coordination, visual memory, and judgement of space and shape are also important.

- **Areas of Specialization**—The American Dental Association recognizes nine dental specialties. They are: orthodontics, prevention and correction of poorly positioned teeth; oral and maxillofacial, surgery on the mouth and jaws; endodontics, root canal therapy; oral pathology, diseases of the mouth; pediatric dentistry, for children; periodontics, treatment of the gums and bones of the mouth; prosthodontics, artificial teeth and dentures; public health dentistry, community dental health; oral and maxillofacial radiology, x-ray and computerized tomographic location of oral diseases; and orthodontics/dentofacial orthopedics, diagnosis and treatment of malocclusion.
- **Work Environment**—Most dentists work alone or in small group practices with a small staff of dental hygienists, dental assistants, dental laboratory technicians, and clerical assistants. Many work about 40 hours a week; however, some may work more to accommodate their patients' needs and schedules. Dentists may also practice in hospitals, dental clinics and laboratories, public health agencies, or companies that provide dental services to their employees. Instead of or in addition to treating patients, some dentists may choose to teach and/or do research.
- **Job Outlook**—The number of General Dentists employed in Florida in 2016 was 7,434. It is projected that in 2024 there will be 8,722, an annual average growth rate of 2.16 percent. The need for dental care is increasing as the population increases and because people are retaining their original teeth for much longer.
- **Length of Trainings/ Requirements**—Students planning careers in dentistry should have a pre-dental education equivalent to a bachelor's degree with required core courses in general chemistry, organic chemistry, biology, physics, biochemistry, microbiology, genetics or molecular biology, and developmental psychology. Students are strongly encouraged to take courses in anatomy, physiology, immunology, and neurosciences. Courses in analytic geometry and calculus are recommended. Some schools offer a combined BS/DMD degree (see academic advisor). The applicant must also take the Dental Aptitude Test (DAT), preferably in the summer of the year before the applicant plans to enter dental school. The first-year dental curriculum includes basic sciences

(anatomy, microbiology, biochemistry, and physiology), and preclinical dental sciences. The basic science courses are completed by the end of the second year. The remaining two years are devoted to clinical practice with patients under the supervision of licensed dentists. An additional one to six years of training are required for dental specialties. Nova Southeastern University and the University of Florida also offer special advanced placement programs leading to a DMD degree to graduates of foreign non-accredited dental colleges.

- **Advancement**—Dentists can enter advanced education programs in any of the dental specialties listed above.
- **Licensure/Certification**—To practice in Florida, graduates from accredited dental schools in the U.S. must pass the examinations from the National Board of Dental Examiners and the Florida Board of Dentistry. They must also complete four hours of HIV/AIDS training and one hour of domestic violence training. Continuing education hours are basic life support (CPR) certification are required every two years for license renewal.
- **Salary**—According to the Bureau of Labor Statistics, the annual mean wage of dentists in Florida in 2015 was \$170,270.
- **Educational Programs**
 - Doctor of Medical Dentistry
 - Nova Southeastern University
 - University of Florida
- **Professional Associations**
 - American Dental Association
 - Florida Dental Association

Resources

Dentists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/ooh/healthcare/dentists.htm>. Accessed January 18, 2017.

29-1021 Dentists, General. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291021.htm>. Accessed January 18, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 18, 2017

Dietetics and Nutrition

- Nutrition is the science of balancing food components to meet the body's needs optimally, along with the social, emotional, and psychological reasons related to food intake. As diet has a direct effect on wellness, nutritious food is essential to the maintenance of good health, the prevention and treatment of disease, and rehabilitation and restoration of health.
- Society is becoming newly aware of nutrition as it affects individual and public health. Recent data, particularly about weight control, has brought the relationship between nutrition and health more sharply into focus. Partly due to the commercial marketing, however, achieving good nutritional status has become more complex.
- As the demand for more information about foods and their nutritional value increases, the role of nutrition-related occupations will continue to expand.

Dietary Manager

- **Description**—Dietary managers, under the direction of a dietician, supervise production, distribution, purchasing, budgeting, and the hiring, training, and scheduling of employees. They also conduct assessments of the effectiveness of nutrition care plans, interview clients about their diet histories, calculate and implement diet plans, and provide counsel on basic diet restrictions and standards for food preparation. They assure their department is compliant with regulatory and sanitation standards. In most nursing homes and hospitals, the dietary manager is the department head, while consultant registered dietitian handles most of the clinical dietetic tasks.
- **Work Environment**—Dietary managers may be employed in hospitals, nursing homes, school cafeterias, hotels, restaurants, correctional facilities, catering services, and college campuses.
- **Job Outlook**--Employment of food service managers is projected to grow 9 percent from 2016 to 2026, about as fast as the average for all occupations. Those with several years of work experience in food service and a degree in hospitality, restaurant, or food service management will have the best job opportunities.
- **Length of Trainings/ Requirements**—Completion of an approved 120-hour didactic and 150-hour field experience is required. The course may be taken at a community college or a vocational-technical school or through an approved independent course by correspondence. The course includes management aspects as well as nutrition.
- **Licensure/Certification**—Certification is voluntary and is available through the Association for Nutrition & Foodservice Professionals (ANFP). Candidates must graduate from ANFP-approved educational programs and follow one of the six pathways to certification eligibility. These are based on the candidate's membership status in the ANFP, their work and educational experience, and whether or not they are in the military. Continuing education hours are required every three years for certification renewal.
- **Salary**—According to the Dietary Managers' Association, the average Florida annual salary for dietary managers was \$41,246 in 2005.
- **Educational Programs**
 - Certification
 - Lindsey Hopkins Technical College
- **Professional Associations**
 - Association of Nutrition & Foodservice Professionals
 - American Dietetic Association

Dietetic Technician

- **Description**—Dietetic technicians assist a registered dietitian in provision of food service management or nutritional care services. A dietetic technician may assist in planning, implementing, and evaluating food programs, standardizing and testing new recipes, and supervising the food preparations and service. Other functions may include employee training, menu planning, budget management, and food and beverage purchasing. In nutritional care services, the dietetic technician assists a clinical or community dietitian in interviewing patients and taking diet histories, choosing menus based on established guidelines, giving routine dietary counseling, and teaching principles of medical nutrition therapy on an individual in-service education basis.
- **Work Environment**—Dietetic technicians may work in hospitals, government settings, schools, day care centers, assisted living facilities, restaurant and fine dining services, nursing homes, company cafeterias, health maintenance organizations, health clubs, food companies, research laboratories, public health clinics, and private practices.
- **Job Outlook**—The number of dietetic technicians employed in Florida in 2016 was 1,203. It is projected that in 2024 there will be 1,349, an annual average growth rate of 1.5 percent. Dietetic technicians with combined studies in culinary arts may enjoy excellent employment opportunities in the emerging upscale retirement community segments as well with food service companies seeking to incorporate a nutritional aspect to dining services.
- **Length of Trainings/ Requirements**—The period of training is generally a two-year associate degree program in a community college. The curriculum consists of core courses in human nutrition, food service management, culinary management, and practical experience paralleling the content of specific courses.
- **Licensure/Certification**—Graduates of Accreditation Council for Education in Nutrition and Dietetics (ACEND) approved programs are eligible for the ADA registration examination to become a Registered Dietetic Technician (DTR). Registration is voluntary.
- **Salary**—The annual mean wage for dietetic technicians in Florida in 2015 was \$26,950.
- **Educational Programs**
 - Associate Degree
 - Hillsborough Community College
- **Professional Associations**
 - American Culinary Federation
 - American Dietetic Association

Resources

29-2051 Dietetic Technicians. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes292051.htm>. Accessed February 8, 2017.

Data for Occupations Not Covered in Detail: Occupational Outlook Handbook: U.S. Bureau of Labor Statistics.
<https://www.bls.gov/ooh/about/data-for-occupations-not-covered-in-detail.htm#Healthcare> practitioners and technical occupations. Accessed January 18, 2017.

Dietetic Technician Programs (DT). Accreditation Council for Education in Nutrition and Dietetics.
<http://www.eatrightpro.org/resources/acend/accredited-programs/dietetic-technician-programs>. Accessed February 8, 2017.

Dietician/ Nutritionist

- **Description**—A registered dietitian (RD) is a healthcare professional with expertise in food and nutrition. The term “registered dietitian” is a legally protected title and may be used only by those who have completed an accredited bachelor’s program, clinical experience, and national exam administered by Commission on Dietetic Registration (CDR). Some registered dietitians call themselves “nutritionists,” but the definition of this term is variable and it is influenced by licensure laws that differ from state to state. Registered dietitians assess the nutritional needs of both sick and healthy people and then develop individualized plans of care to improve or maintain health. They apply principles from basic, social, and behavioral sciences to persons of all ages, and a dietetics curriculum includes courses in chemistry, biochemistry, anatomy, physiology, food science, management, economics, sociology, psychology, and microbiology. Nutritionists concentrate on nutrition and dietetics, the relationships between dietary patterns and health in normal nutrition and in disease states. As certification requirements for nutritionists differ widely from state to state, it is important to note that the preparation and credentials of nutritionists can range widely. In Florida, nutritionists who hold the LD/N (Licensed Dietitian/ Nutritionist) certification are often seen in public health situations where they can play a powerful role in health promotion through their focus on promotion of health and prevention of disease through education and counseling.
Persons seeking careers in dietetics and nutrition need to have an interest in science, organizational and administrative skills, and a genuine interest in working with people of all ages as individuals or groups.
- **Areas of Specialization**—Currently, there are five areas in which registered dietitians may obtain certification as a specialists: renal nutrition, pediatric nutrition, sports dietetics support, gerontological nutrition, and oncology nutrition. Certification requires completion of an examination by the CDR or other medical/nutrition organizations. Registered dietitians may also practice in specialized areas such as eating disorders and weight management, cardiac rehabilitation, or geriatrics without specialization.
- **Work Environment**—Registered dietitians are employed by hospitals, government agencies, public schools, daycare centers, nursing homes, pharmaceutical companies, food service companies, health maintenance organizations, health clubs, the food industry, research laboratories, public health clinics, correctional facilities, and private practice. Registered dietitians may choose to work part- or full-time(40 hours/week).
- **Job Outlook**—The number of Dietitians, and Nutritionists employed in Florida in 2016 was 3,421. It is projected that in 2024 there will be 3,903, an annual average growth rate of 1.8 percent.
- **Length of Trainings/ Requirements**—Entry-level dietitians must complete an American Dietetic Association accredited bachelor’s degree with a major in human nutrition, food

science and nutrition, dietetics, or food management. This is followed by a supervised practice/internship program with a minimum of 900 hours. The next step is successful completion of the national registration examination for dietitians offered by the CDR and registration is maintained by a program of continuing education.

- **Advancement**—Graduate programs are available leading to master’s and doctoral degrees. Those with advanced degrees may become teachers, researchers, and managers. However, not all advancement requires additional education. With experience, advanced knowledge, and management skills, dietitians may advance from assistant to associate and then director of a dietetic department.
- **Licensure/Certification**—In the state of Florida, licensure is regulated by the Dietetics and Nutrition Practice Council. All registered dietitians are eligible for state licensure and there is no requirement for additional education or supervised practice. Licensed dietitians/nutritionists designate their status using the credentials LD or LD/N. A complete description for the licensure requirements for dietetics and nutrition practice may be found in the Florida Statutes Title XXXII, chapter 468, Part X (ss.468501-468.509).
 - Dietetic registration (RD) is maintained by completion of 75 hours of continuing education every five years. State licensure (LD or LD/N) required 30 hours of continuing education every two years including:
 - Medical Errors: 2 hours for initial licensure and each renewal;
 - Management, risk management, personal growth, and educational techniques: a maximum of 10 hours;
 - Approved home study courses: a maximum of 15 hours.
- **Salary**—According to the Bureau of Labor Statistics, the annual mean wage of dietitians and nutritionists in Florida in 2015 was \$55,920.
- **Educational Programs**
 - Bachelor’s
 - Keiser University
 - Florida International University
 - University of Florida
 - University of North Florida
 - Florida State University
 - Master’s
 - Florida International University
 - University of Florida
 - University of North Florida
 - Florida State University
- **Professional Associations**
 - American Dietetics Association
 - Florida Dietetic Association

Resources

29-1031 Dietitians and Nutritionists. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes291031.htm>. Accessed January 11, 2017.

Dietitians and Nutritionists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/ooh/healthcare/dietitians-and-nutritionists.htm>. Accessed January 18, 2017.

Dietetics Nutrition. Continuing Education | Florida Department of Health. <http://www.floridahealth.gov/licensing-and-regulation/dietetic-nutrition/continuing-education/index.html>. Accessed January 19, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 18, 2017

SPECIALTY PRACTICE EXPERIENCE. Commission on Dietetic Registration.

<https://www.cdrnet.org/certifications/specialty-practice-experience>. Accessed February 8, 2017.

Health Information and Communication

- Good management of health information and security of communication between consumers, providers, and qualified third parties is supported by increasingly complex technologies. There is a growing need for trained professional to organize this information and to help other health professionals to organize this information and to help other health professionals locate and obtain it as needed for patient care, research, and decision-making. The general public health is also benefited by early detection of infectious disease outbreaks, improved tracking of chronic disease management, and the availability of comparative health care services and products.
- Just as schools and colleges keep records of students' grades and test scores, hospitals, clinics, and doctors offices create and maintain a permanent medical record for each patient. A medical record contains the patient's history, physical exam results, x-ray and laboratory tests, doctor's orders, treatment plans, and other important information. Medical records personnel organize and maintain this information so that it can be used in evaluation and treatment of patients, in research and for statistical reports. Managing such an information system requires the teamwork of a health information administrator, medical record technician, medical transcriptionist, and medical record coder.

Health Information Administrator

- **Description**—Health information administrators, sometimes known as health information managers, design and manage dynamic health information systems that meet medical, legal, and ethical standards, for facilities that deliver healthcare. Due to heightened regulations governing privacy of health records coupled with the ever-increasing complexity of advanced information technologies used by health-related facilities and institutions, the role of information security expert and health information managers are increasingly interdependent.
Responsibilities of health information administrator may include: training and supervising the health information management staff; developing systems for the efficient and confidential recording, retention, and retrieval of health data; and compiling statistical reports from patient health records for medical, administrative, legal, and research purposes.
- **Areas of Specialization**—In addition to the RHIA (Registered Health Information Administrator) certification, credentials can be obtained as a certified Coding Specialist, Certified Coding Specialist--Physician Based, and certification in Healthcare Privacy.
- **Work Environment**—Areas of employment include hospitals, clinics, health maintenance organizations, accounting firms, insurance companies, law firms, physicians' offices, nursing homes, consulting firms, and health data organizations.
- **Job Outlook**—Employment of medical and health services managers is projected to grow 20 percent from 2016 to 2026, much faster than the average for all occupations. As the large baby-boom population ages and people remain active later in life, there should be increased demand for healthcare services.
- **Length of Trainings/ Requirements**—Completion of a baccalaureate or post baccalaureate certificate from a university is required for the RHIA credential. The curriculum consists of core courses in medical terminology, pathophysiology, health information systems, health information administration, quality management, health law, and health information management systems.
- **Advancement**—With experience, advancement to positions of HIM department manager, HIM systems manager, data quality manager, information security officer, HIM college instructor, and HIM consultant are available.
- **Licensure/Certification**—Certification is voluntary. Graduates of an accredited program are eligible to take the national registration examination, sponsored by the American Health Information Management Association (AHIMA), to become a professional Registered Health Information Administrator (RHIA).
- **Salary**—The median annual wage for medical and health services managers was \$98,350 in May 2017.

- **Educational Programs**

- Bachelor's Degree

- Florida A&M University

- Keiser University

- University of Central Florida

- **Professional Associations**

- American Health Information Management Association

- Florida Health Information Management Association

Resources

Medical Records and Health Information Technicians. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/ooh/healthcare/medical-records-and-health-information-technicians.htm#tab-3>. Accessed January 19, 2017.

Program Directory. Commission on Accreditation for Health Informatics and Information Management Education.

<http://www.cahiim.org/directoryofaccredpgms/programdirectory.aspx>. Accessed February 8, 2017.

Health Information Technician

- **Description**—The health information technician (HIT), also known as medical record technician, maintains the medical information system of a healthcare facility consistent with medical, administrative, legal, ethical, and regulatory requirements. Supervised by the health information administrator, the HIT collects, integrates, and analyzes primary and secondary health care data, compiles and disseminates information, and manages information resources related to the research, planning, provision, and evaluation of health care services. The HIT handles the patient's records for purposes of: coding clinical data using appropriate classification systems; reviewing, organizing, and evaluating medical records for completeness, accuracy, and compliance; preparing information for release to patients, insurance companies, lawyers, and other agencies according to state and national regulations; utilization management, marketing, quality assessment, risk management, and working with the medical staff on research projects.
- **Work Environment**—The demand is greatest in hospitals, but opportunities are expanding to other agencies such as long term care facilities, state and federal agencies, ambulatory clinics, physicians' offices, and cancer registries. Health information technicians should be very accurate in their work and be able to pay great attention to details.
- **Job Outlook**—The number of Medical Records and Health Information Technicians employed in Florida in 2016 was 10,326. It is projected that in 2024 there will be 11,901, an annual average growth rate of 1.9 percent.
- **Length of Trainings/ Requirements**—Training programs are generally two-year associate degree programs in community colleges. The curriculum may include human anatomy and physiology, medical classification systems, using personal computers, supervision of personnel, concepts of disease, legal aspects of medical records, and clinical experience in a health care setting.
- **Advancement**—In large institutions, HITs usually work under the supervision of a health information administrator (HIA). experienced HITs may advance to section supervisors. In a small facility, an experienced technician may be promoted to director of the health information department.
- **Licensure/Certification**—HITs are not licensed. Registration is voluntary, but recommended. Graduates of an associate degree program accredited by the American Health Information Management Association (AHIMA) are eligible for the national accreditation examination, sponsored by AHIMA, to become Registered Health Information Technicians (RHITs).
- **Salary**—In 2015, the annual mean wage of Medical Records and Health Information Technicians in Florida was \$39,830 per year, or \$19.15 per hour.

- **Educational Programs**

- Diploma

- Indian River State College

- Associates

- Pensacola State College
 - St. Petersburg College
 - Broward College
 - College of Central Florida
 - College of Business and Technology
 - Daytona State College
 - Florida Southwestern State College
 - Florida State College at Jacksonville
 - Indian River State College
 - Keiser University
 - Lake-Sumter State College
 - Miami Dade College
 - Palm Beach State College
 - Santa Fe College
 - Seminole State College of Florida
 - Southern Technical College
 - St. Johns River State College
 - Ultimate Medical Academy

- Bachelor's

- Florida A&M University
 - Keiser University

- **Professional Associations**

- American Health Information Management Association
 - Florida Health Information Management Association

Resources

Medical Records and Health Information Technicians. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/ooh/healthcare/medical-records-and-health-information-technicians.htm#tab-3>. Accessed January 19, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 19, 2017

29-2071 Medical Records and Health Information Technicians. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes292071.htm#st>. Accessed January 19, 2017.

Health Sciences Librarian

- **Description**—Health sciences librarians impact the quality of patient care directly by helping physicians, allied health professionals, and other members in health care stay current in the latest developments in specialty care. They do this by identifying, accessing, organizing and sharing current, well-researched evidence-based health information with physicians, nurses, dentists, allied health professionals, medical faculty, students, patients, and consumers. They also help develop and support programs that make healthcare information easily available and teach healthcare professionals how to access it efficiently.

Medical librarians need the ability to communicate well in both oral and written format, as well as the ability to use appropriate technologies to organize and disseminate it.

Creativity and an orientation to service and disseminate it. Creativity and an orientation to service are other markers for success in the field.

They may perform the basic services and functions needed to manage a library collection:

1) select and purchase books, periodicals, and other multimedia materials, 2) catalog and organize those materials, 3) assist users in locating information, 4) administer the library-budgeting, planning, and personnel management. Health sciences librarians teach people to use computer databases, to search the internet, to find information, and to evaluate the information the need and to develop other information-gathering skills. Sophisticated, integrated information management systems provide librarians opportunities to collaborate with clinicians in web page and database development.

- **Work Environment**—Health Sciences librarians work in many settings, including medical centers, hospitals, clinics, allied health schools, health professional organizations, research facilities, pharmaceutical firms, government agencies, and the insurance industry. They may also work in areas of biotechnology, publishing, medical equipment and as independent information brokers. While most work 40-hour weeks, part-time work is also available. In some libraries, librarians may supervise library technical assistants or other librarians.
- **Job Outlook**—According to the Medical Library Association, a large number of retirements are expected in the next decade and will result in many job openings for medical librarians to replace those who leave.
- **Length of Trainings/ Requirements**—The basic education is a bachelor's degree in liberal arts or a life science and a master's degree in library science from a school accredited by the American Library Association, special courses related to this field, for example understanding of biomedical references, principles of organization of information in the biomedical sciences, and computer databases such as MEDLINE from the National Library of Medicine, are available at many library schools. Most MLS degrees can be completed in one year and some are offered by distance education.

- **Advancement**—A master’s degree is required for entry-level positions. However, with additional experience, subject expertise, and/or Academy of Health Information Professional (AHIP) membership, one may advance to college teaching or a top administrative post.
- **Licensure/Certification**—Certification is voluntary and may be obtained from the Medical Library Association (MLA). The Academy of Health Information professionals, sponsored by MLA, recognizes contributions to the profession and career achievement. Continuing education hours are required every year for certification renewal, which occurs every five years.
- **Salary**—According to the Florida Hospital Association, the Average hourly wage for a health science librarian was \$20.07 in 2005.
- **Educational Programs**
 - Master’s Degree
 - Florida State University
 - University of South Florida
 - Doctor of Philosophy
 - Florida State University
- **Professional Associations**
 - American Library Association
 - American Medical Informatics Association
 - Medical Library Association
 - Special Libraries Association

Resources

Searchable DB of ALA accredited programs LIS Listing. American Library Association.
<http://www.ala.org/cfapps/lisdir/listing.cfm?id=1714>. Accessed February 8, 2017.

Medical Record Coder

- **Description**—Medical record coders, or medical record technicians, review patient records and then assign and sequence diagnostic and procedural codes for symptoms, diseases, operations, and treatments, according to a recognized numeric classification system.

After the information is coded the medical record coder may use a computer program to assign the patient to one of several hundred “diagnostic related-groups” or DRG’s. It is essential that the medical coder enter complete and accurate data because the information is used for clinical decisions as well as documentation for insurance and Medicare reimbursement. A medical record coder should like to work with numbers, be detail-oriented, and have good hand-eye coordination to enter codes correctly and efficiently into the computer. A coding error could result in an incorrect clinical decision or a financial loss to the hospital.

- **Work Environment**—Medical record technicians usually work a 40-hour week. Some overtime may be required. In hospitals--where health information departments are often open 24 hours a day, 7 days a week--coders may work day, evening, and night shifts. Medical records and health information technicians work in pleasant and comfortable offices. This is one of the few health occupations in which there is little or no direct contact with patients. Because accuracy is essential in their jobs, technicians must pay close attention to detail. Technicians who work at computer monitors for prolonged periods must guard against eye strain and muscle pain.
- **Job Outlook**—The number of Medical Records and Health Information Technicians employed in Florida in 2016 was 10,326. It is projected that in 2024 there will be 11,901, an annual average growth rate of 1.9 percent.
- **Length of Trainings/ Requirements**—Education and training can be accomplished through a certificate or diploma program offered in a university or in a community college. The curriculum includes anatomy and physiology, medical terminology, fundamentals of medical science, basic computer applications, and basic to advanced medical coding instruction.
- **Advancement**—The need for instructors and supervisors with high credentials and/or experience provides for advancement, along with attrition. Also, due to increased scrutiny over the privacy and accuracy of medical records by government and the health insurance industry, advancement may be related to familiarity with new and more efficient technologies for providing high-quality, secure medical information.
- **Licensure/Certification**—National certification is voluntary, but recommended. The American Health Information Management Association (AHIMA) and the American Academy of Professional Coders (AAPC) both sponsor a national certification examination for medical coders. Upon successful completion of the AHIMA certification exam, the medical record coder is given the title of Certified Coding Associate (CCA),

which is an entry-level coding credential or Certified Coding Specialist (CCS), which is a professional skilled in classifying medical data generally in a hospital setting. There is also the CCS-P, which is a coding practitioner with expertise in physician-based settings (physician offices, group practices, or specialty centers.) Upon successful completion of the AAPC examination, the medical record coder is given the title of Certified Professional Coder (CPC) or Certified Professional Coder-Hospital (CPC-H).

- **Salary**—According to the Bureau of Labor Statistics, the annual mean wage of medical record and health information technicians in Florida in 2016 was \$40,810.

- **Educational Programs**

- Diploma

- ATA Career Education
- Broward College
- College of Business and Technology
- D G Erwin Technical Center
- Everest Institute-Kendall
- Florida Career College
- Florida Education Institute
- Florida Panhandle Technical College
- Manatee Technical Institute
- MedTech Institute
- Remington College
- Southeastern College
- Southern Technical College
- Virginia College

- Certificate

- American College for Medical Careers
- Atlantic Technical College
- Cape Coral Institute of Technology
- D A Dorsey Educational Center
- Daytona State College
- Eastern Florida State College
- Flagler Technical Institute
- Florida State College at Jacksonville
- Florida Technical College
- Fort Myers Institute of Technology
- Fortis College
- Gulf Coast State College
- Herzing University
- Hillsborough Community College
- Immokalee Technical Center

- Lake-Sumter State College
- Lincoln College of Technology
- Miami Dade College
- Northwest Florida State College
- Palm Beach State College
- Pensacola State College
- Polk State College
- St Petersburg College
- Tallahassee Community College
- Associate of Science
- American College for Medical Careers
- Daytona College
- Florida Southwestern State College
- Keiser University
- Pasco-Hernando State College
- Rasmussen College
- SABER College
- Ultimate Medical Academy
- Professional Associations
- American Academy of professional Coders
- American Health Information

- **Professional Associations**

- American Academy of Professional Coders
- American Health Information Management Association

Resources

29-2071 Medical Records and Health Information Technicians. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes292071.htm#st>. Accessed March 31, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 19, 2017

Medical Transcriptionist

- **Description**—A medical transcriptionist (MT) is a medical language specialist who transcribes and edits dictation from physicians and other healthcare practitioners into records that document patient's' care.
Physicians rely on skilled medical transcriptionists to accurately transcribe comprehensive patient medical histories, diagnoses, and treatments. Medical transcriptionists must be organized, pay attention to details, hear well, have accurate secretarial skills, a strong foundation in medical terminology, and not be easily distracted.
- **Areas of Specialization**—Level-1 MTs may specialize in one particular area of medicine such as radiology, pathology, or emergency room medicine. Higher-skilled level-2 MTs are expert in a variety of acute-care dictation in all specialties.
- **Work Environment**—Medical transcriptionists often work independently in doctors' offices; many own their own business. In large facilities, such as hospitals and medical transcription services, they may work under the supervision of a certified medical transcriptionist (CMT) or health information administrator. Some are full-time employees, while others are independent contractors. Many medical transcriptionists work from home, downloading dictation in encrypted “.wav” files and transmitting it back via the internet in transcribed form.
- **Job Outlook**—The number of medical transcriptionists employed in Florida in 2016 was 6,370. It is projected that in 2024 there will be 6,962, an annual average growth rate of 1.2 percent.
- **Length of Trainings/ Requirements**—Training programs are offered through community colleges and vocational technical institutions. Programs vary from six months to two years and offer a certificate or an associate degree. The curriculum generally includes medical terminology, anatomy and physiology, disease processes, keyboarding/typing, word processing skills, medical/legal concepts, and proofreading/editing. An internship experience should be an essential part of the program.
- **Advancement**—Medical transcriptionists often start their own business, advance to become managers in hospital transcription departments or at a large service, or work as quality assurance specialists. Some may become editors of dictation processes by speech recognition software.
- **Licensure/Certification**—Recent graduates and others with fewer than two years of acute-care experience are eligible to take the Registered Medical Transcriptionist (RMT) exam, which is for level-1 MTs. With two or more years of acute-care experience, level-2 MTs may qualify to take the Certified Medical Transcriptionist (CMT) exam. Both certification exams are sponsored by AAMT.
- **Salary**—The hourly mean wage for Medical Transcriptionists in Florida in 2015 was \$15.79. Most transcriptionists are paid by the line, so pay varies by production ability.

Per-line rates vary according to the situation, i.e. service, hospital, physician office, and difficulty of dictation and specialty.

- **Educational Programs**

- **Diploma**

- **Certificate**

- Career Step

- **Associate**

- Keiser University

- **Professional Associations**

- Association for Healthcare Documentation Integrity

- American Health Information Management Association.

Resources

31-9094 Medical Transcriptionists. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes319094.htm#st>. Accessed January 19, 2017.

Medical Transcriptionists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/ooh/healthcare/medical-transcriptionists.htm#tab-7>. Accessed January 19, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 19, 2017

Health Services Administration and Clerical Staff

- Administrators manage organizations, businesses and agencies; many administrators concentrate in the area of health care administration. Managing a health facility is a complex, challenging, and rewarding management job.
- Health care administrators are needed in hospitals, nursing homes, public health agencies, outpatient clinics, health maintenance organizations, insurance corporations, private corporations, and many other health facilities. They are responsible for managing the facility, directing operations, coordinating programs, directing recruitment and training of personnel, conferring with the governing board and staff to formulate and establish policies and regulations, compiling, official reports, preparing budgets, and ensuring that their facilities comply with legal requirements.
- They may also represent the health facility in the community to make sure that the people know about the services that the facility provides.
- Smooth operation of a health facility requires other team members also. Health unit coordinators perform a variety of services, such as receiving new patients, giving information to visitors, and performing many clerical tasks.

Health Care Administrator

- **Description**—Health care administrators oversee delivery of health care at all types of healthcare facilities.

The administrator must see that all necessary elements are available to provide the best patient care, while interpreting and ensuring compliance with laws that affect healthcare providers, administrators and organizations. The administrator works closely with the institution's governing board and medical staff to address current and future space needs and to develop plans, policies, and procedures, and ensure they are carried out. Budget responsibility, including establishing patient fee schedules and billing procedures, are also the administrator's responsibility. The administrator may hire, train, and supervise staff, purchase supplies and equipment, and prepare official reports. The administrator is normally the institution's representative to outside organizations such as civic organizations, businesses, and other health groups.

Since much of the job of an administrator consists of dealing with people, important assets include leadership qualities, tact, sympathy, self-control, and the ability to withstand pressure and stress of a demanding job.

- **Areas of Specialization**—Specific duties may vary with types of facilities--from hospitals, medical group practices, and outpatient clinics to health maintenance organizations. A large specialty area is nursing homes. The skills are needed by nursing home administrators; but they are typically more involved in management detail due to smaller administrative staffs. Since nursing home residents also tend to be long term, creation of an environment to nourish residents' overall health demands more attention.
- **Work Environment**—In smaller hospitals and nursing homes, health care administrators personally coordinate the day-to-day activities that make the organization run smoothly. In larger organizations, there may be a staff of assistant administrators who direct specific aspects of the daily operation and report to a chief administrator. Most administrators have their own offices in comfortable surroundings. They often work long hours as their health facilities operate around the clock and the administrator must be available to make decisions in case of emergency. Travel is often involved to attend meetings or to inspect other facilities.
- **Job Outlook**—Employment of Medical and Health Service Managers is expected to grow at an annual average rate of 2.1 percent through the year 2024 as health services expand and diversify.
- **Length of Trainings/ Requirements**—A minimum of a bachelor's degree in business, health administration, or a related field is required. Most employers require a master's degree in health care administration, hospital administration, public health, or business administration. Competition for entry into these programs is keen and applicants need above average grades to be accepted. The graduate program is generally a two-year

program with academic coursework and supervised practical training as an administrative resident. Certificate programs are available for those students holding degrees in related fields.

- **Advancement**—Health care administrators sometimes begin their careers in small hospitals and advance by shifting to larger health care facilities. They may also begin their careers as assistants in a large medical institution in order to gain experience and advance by moving into more responsible, higher paying positions.
- **Licensure/Certification**—Licensure is not required in most areas of health care administration, except for nursing home or long-term care administration. Licensure is required in the state of Florida for nursing home administrators. Candidates for licensure must meet the education requirements set by the Florida State Board of Nursing Home Administrators, which is regulated by the Department of Health and must pass state and national examinations. Continuing education hours are required every two years for license renewal.
- **Salary**—The mean annual salary for Medical and Health Services Managers in Florida in 2015 was \$112,420.
- **Educational Programs**
 - Certificate
 - Barry University
 - Florida International University
 - Saint Leo University
 - Bachelor's Degree
 - Adventist University of Health Sciences
 - Barry University
 - City College
 - DeVry University
 - Eckerd College
 - Everest University
 - Florida Agricultural and Mechanical University
 - Florida Atlantic University
 - Florida Institute of Technology
 - Florida International University
 - Florida Southern College
 - Herzing University
 - Indian River State College
 - Northwood University
 - Saint Leo University
 - Santa Fe College
 - South University
 - Southern Technical College
 - St Thomas University
 - State College of Florida
 - University of Central Florida
 - University of Miami
 - University of North Florida
 - University of South Florida

- Master's Degree
 - Adventist University of Health Sciences
 - Barry University
 - Florida Agricultural and Mechanical University
 - Florida Atlantic University
 - Florida Institute of Technology
 - Florida International University
 - Jacksonville University
 - South University
 - Strayer University
 - University of Florida
 - University of Miami
 - University of North Florida
 - University of South Florida
- Doctor of Philosophy
 - University of Florida

- **Professional Associations**

- American College of Health Care Administrators
- American College of Healthcare Executives

Resources

11-9111 Medical and Health Services Managers. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes119111.htm#st>. Accessed February 9, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 19, 2017

Health Unit Coordinator

- **Description**—Health unit coordinators provide support in areas of the hospital where nursing care is provided to patients. They perform a variety of services to patients, visitor, and hospital management.

Health unit coordinators receive new patient and give information and direction to visitors. They must have good communication skills to perform well at answering the telephone, providing information to the health professional staff, answering patient signals, and taking and delivering messages.

Unit coordinators also need a working knowledge of medical terminology for transcribing physicians' orders, copying and compiling information from patients' charts, and scheduling tests and appointments for patients. Other duties include maintenance of records and adequate inventories of supplies and equipment. At the direction of nurses or doctors, the unit coordinator also make emergency code calls. The unit coordinator must be responsible, mature, dependable, and able to work with a variety of different people in a very busy area of the hospital.

- **Areas of Specialization**—Specialty areas include reception, scheduling, communication, archive maintenance, clerical duties, coordination of non-clinical tasks, and safety.
- **Work Environment**—Most health unit coordinators work in hospitals. Others may be employed in physicians' offices, nursing homes, medical clinics, or other areas where medical-clerical employees are needed. The work environment is often fast-paced with many activities in progress at any given time. Unit coordinators usually work a 40-hour week, often on rotating shifts involving weekends and nights.
- **Job Outlook**—With population growth and expanding medical technology, the job outlook for qualified employees is very good.
- **Length of Trainings/ Requirements**—Although health unit coordinators may receive on-the-job training, many hospitals prefer to hire those who graduated from formal education programs. These programs are offered by vocational schools, adult education centers, and community colleges and usually take one year or less to complete. In the formal training programs, students receive a combination of classroom and clinical training. They learn clerical skills, medical terminology, hospital organization, legal and ethical responsibilities, transcription of doctors' orders, computer operation, and other relevant courses. High school students interested in this field should take English, science, math, and secretarial courses.
- **Licensure/Certification**—Certification is voluntary. The National Association of Health Unit Coordinators (NAHUC) offers a certification examination. Certification allows the person to work anywhere in the United States as a health unit coordinator. Thirty-six continuing education hours are required every three years for recertification.
- **Salary**—According to the National Association of Health Unit Coordinators, the national average wage in 2005 was \$14.61/hr.

- **Educational Programs**

- Certificate

- Atlantic Technical College
 - Eastern Florida State College
 - Orange Technical College
 - Pasco-Hernando State College
 - Pensacola State College
 - Sheridan Technical College

- **Professional Associations**

- National Association of Health Unit Coordinators

Medical Careers

- In spite of medicine's increasing complexity and sophistication, country doctors who still practice in rural areas find themselves very welcome indeed. Providing healthcare to underserved populations entails unique challenges and huge personal rewards. It is also possible to be a specialist in an urban area or to conduct research in a large medical center. Options are many and varied.
- Two types of physicians are licensed by the state of Florida: the MD--Doctor of Medicine (allopath), and the DO Doctor of Osteopathy (osteopath). Both MDs and DOs use all accepted methods of treatment, including drugs and surgery, and both reserve the same license and privileges. Physicians may be generalists or specialize in a particular area of medicine such as family medicine, internal medicine, pediatrics, psychiatry, surgery, neurology, radiology, and ophthalmology. podiatrists, who specialize in problems of the human foot, are described in this section.
- As medicine, has expanded, the need for associated professionals has emerged. The physician assistant works under the direct supervision and supervision of a physician and relieves the physician of many of the routine responsibilities of patient care. This allows the physician to spend more time on other patient care needs. Nurse practitioners also assume many patient care responsibilities formerly performed only by physicians (covered in the Nursing section). These are only a few of the associated professionals. You will read about others in other sections.

Chiropractic Physician

- **Description**—Chiropractic is a form of healing based on the idea that the human body has an innate self-healing ability and seeks balance. Chiropractic health offers the patient the advantages of a conservative, natural method of healing without the use of drugs or surgery. The primary form of treatment is spinal manipulation or adjustment. When problems in the joints interfere with proper functioning, doctors of chiropractic employ manual adjustment of the spine so nerve and skeletal systems are allowed to function properly. The doctor of chiropractic corrects, reduces, mobilizes, or immobilizes joint abnormalities, particularly of the spine and pelvis, to normalize structural and functional relationships and relieve attendant neurologic, muscular, and vascular disturbances. Adjunct therapy may include traction, massage, hot or cold compresses or baths, infrared or ultraviolet light, ultrasound, and other modalities common to the healing arts. Personal qualifications include an ability to manage time and work independently without supervision, a strong desire to serve the sick, manual skill and dexterity, and a keen sense of observation.
- **Areas of Specialization**—While general practice is the first choice of many chiropractors, there is ample opportunity to develop in a specialized field. A chiropractor may specialize in working with a specific age group such as children or elderly or industrial or sports injuries, orthopedics, government and rehabilitation organizations. Teaching and research also offer career opportunities.
- **Work Environment**—Chiropractors may practice independently in their own offices or join with other well-established doctors of chiropractic in a joint clinical setting. They determine working hours and arrange these hours by appointment, but may be available for emergency treatment of their patients at other times.
- **Job Outlook**—The number of Chiropractors employed in Florida in 2016 was 3,299. It is projected that there will be 3,718, an annual average growth rate of 1.6 percent.
- **Length of Trainings/ Requirements**—The State of Florida requires a minimum of four years of college focusing on the basic sciences for entry into an accredited chiropractic college. Chiropractic colleges are governed and accredited by the Council on Chiropractic Education and Commission on Accreditation. Once in chiropractic college, students must complete four to five academic years of professional study including classroom, laboratory and extensive clinical experience. The student spends the first two years mastering the fundamentals such as anatomy, physiology, biochemistry, bacteriology and pathology. The remaining two years are devoted to working with patients in applying chiropractic principles. Upon completion of the college program, the degree of Doctor of Chiropractic is awarded.

- **Advancement**—Research and development have created new areas of service for chiropractors. Teaching is an increasingly important role and offers advancement through academic standing and seniority.
- **Licensure/Certification**—All states, the District of Columbia, Puerto Rico and the U.S Virgin Islands, there are specific laws governing the practice of chiropractic and prescribing requirements for licensure. Most of the licensing jurisdictions recognize or utilize the National Board of Chiropractic Examiners Certificate.
- **Salary**—According to the Bureau of Labor Statistics, the annual mean wage of Chiropractors in Florida in 2015 was \$87,670.
- **Educational Programs**
 - Doctorate
 - National University of Health Sciences
 - Palmer College of Chiropractic
- **Professional Associations**
 - American Chiropractic Association
 - Florida Chiropractic Association

Resources

29-1011 Chiropractors. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291011.htm>. Accessed January 11, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 19, 2017

Chiropractors. U.S. Bureau of Labor Statistics. <https://www.bls.gov/ooh/healthcare/chiropractors.htm#tab-3>. Accessed January 19, 2017.

Doctor of Chiro Programs. cce-usa. http://www.cce-usa.org/Accredited_Doctor_Chiro.html. Accessed January 19, 2017.

Boards Fof CL. US Colleges. US Colleges. <http://directory.fclb.org/Colleges/USColleges.aspx>. Published January 19, 2017. Accessed January 23, 2017.

Doctor of Medicine

- **Description**—Doctors of medicine (MDs) are also known as allopathic physicians. They perform physical examinations and diagnose, prevent, and treat illnesses, injuries, and other disorders of the human body. They also advise patients on how to improve their health habits.

Physicians may perform surgery and other highly technical procedures. They often supervise other patient care workers such as nurses, technicians, and assistants. Medical doctors need high intelligence, good business sense, good judgement, and must be able to deal with different types of people. Maturity, integrity, honesty, ability to work under pressure, a sense of service to others, and a sense of responsibility are important characteristics for physicians. Because medical knowledge and technology are constantly advancing, they must continue to study new developments throughout their careers.

- **Areas of Specialization**—Physicians who are specialists tend to limit their practice to one particular area of the body, a particular disease, sex, or age group. There are approximately 35 major specialty fields with over 50 different subspecialty areas. Major specialty areas include anesthesiology, family medicine, internal medicine, neurology, obstetrics and gynecology, ophthalmology, pathology, pediatrics, psychiatry, radiology, and surgery. Internal medicine specialists diagnose and treat problems of internal organs such as liver, heart, and lungs. Family practitioners see patients of all ages and both sexes. They concentrate on primary care for the entire family. When a special need arises the internist or family physician may refer the patient to a doctor who specializes in that problem.
- **Work Environment**—Many physicians work at least 60 hours per week on an irregular schedule and must be available for emergency illnesses. In addition to working in their offices, many physicians will make frequent trips to the hospital to care for their hospitalized patients and may remain on-call to respond to emergency situations. The majority of MDs who provide patient care have office practices either solo or with a group of other physicians. An increasing trend is for physicians to be employed by hospitals, public health departments, government agencies, or health maintenance organizations (HMOs). They also be in academic settings as teachers and researchers
- **Job Outlook**—The combined total of family practitioners, internists, OB/GYNs, and other physicians and surgeons employed in Florida in 2016 was 37,332. It is projected that in 2024 there will be 43,803. This represents an annual growth rate of 2.2 percent. Though the rate varies slightly among disciplines. These openings are due to advancements in medical technology which allow [physicians to treat conditions that were previously regarded as untreatable. Also, the population continues to grow and age, and health care needs increase significantly with age.
- **Length of Trainings/ Requirements**—After high school, a student can expect to spend at least 11 or more years of education to become a medical doctor. Minimum requirement

for entry to medical school is three years of college. Some schools offer a combined BS/MD degree (see academic advisor). Most applicants have at least a bachelor's degree; however, with prerequisite courses. Students must take the Medical College Admission Test (MCAT). Once in medical school, students study the basic sciences such as anatomy, biochemistry, microbiology, physiology, pharmacology, medical ethics, and law. They also learn how to communicate with patients, to take a history and perform a physical examination, and recognize symptoms of illness. After graduation from medical school, they continue on into graduate medical education (residency) for three years or more, depending on the specialty chosen.

- **Licensure/Certification**—To practice in Florida, a graduate of an accredited medical school must pass an examination given by the National Board of Medical Examiners and complete one year of AMA approved postgraduate Specialists offers an examination for those seeking board certification in a specialty. Continuing education hours are required every two years for license renewal.
- **Salary**—The annual mean wage in 2015 was approximately \$197,090 for Family and General Practitioners, \$205,460 for Internists, \$243,560 for OB/GYNs, and \$199,720 for others in Florida.
- **Educational Programs**
 - Doctor of Medicine
 - Florida International University
 - Florida State University
 - Nova Southeastern University
 - University of Central Florida
 - University of Florida
 - University of Miami
 - University of South Florida
- **Professional Associations**
 - American Medical Association
 - Florida Medical Association

Resources

29-1062 Family and General Practitioners. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes291062.htm#st>. Accessed February 13, 2017.

29-1063 Internists, General. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291063.htm#st>. Accessed February 13, 2017.

29-1064 Obstetricians and Gynecologists. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes291064.htm#st>. Accessed February 13, 2017.

29-1069 Physicians and Surgeons, All Other. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes291069.htm#st>. Accessed February 13, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 13, 2017

Osteopathic Physician

- **Description**—Osteopathic medicine is one of the two health fields nationally recognized as complete schools of medicine.
Its practitioners, osteopathic physicians, are also known as Doctors of Osteopathic Medicine (DOs). They diagnose and treat all illnesses and injuries and emphasize preventative care, with special emphasis on the need for integrated function of all body systems and the importance of the musculoskeletal system (muscles, joints, bones). To apply these principles to wellness and illness, DOs use manipulative therapy, along with medication, surgery, and all other therapies when needed. Osteopathic physicians are licensed in all 50 states for the full practice of medicine.
- **Areas of Specialization**—More than half of osteopathic physicians are in primary care fields: family practitioners, pediatricians, and internists. The remainder specialize in fields such as surgery, obstetrics, gynecology, neurology, psychiatry, or any of the more than fifty recognized medical specialties.
- **Work Environment**—Osteopathic physicians work in private offices, hospitals, and other health care settings. They are more likely to practice in rural areas and small towns than allopathic physicians. Osteopathic physicians also hold salaried positions in hospitals, colleges, private industry, and government agencies.
- **Job Outlook**—See “Job Outlook” under “Doctor of Medicine”.
- **Length of Trainings/ Requirements**—Virtually all students entering colleges of osteopathic medicine have bachelor’s degrees and have completed required courses in the sciences, English, and other subjects. All candidates must take the Medical College Admissions Test (MCAT). The four-year program in osteopathic medicine leads to the degree of Doctor of Osteopathic Medicine. Nova Southeastern University also offers a seven-year dual BS/DO degree (see academic advisor). Most graduates then spend one year of internship in an osteopathic or military hospital. Those who specialize must spend an additional two to seven years of training in the specialty area.
- **Licensure/Certification**—All states, including Florida, require physicians to be licensed to practice medicine. Licensure requires graduation from a college of osteopathic medicine that is approved by the American Osteopathic Association (AOA), completion of an internship or at least 12 months in an approved hospital, and successfully passing the national licensing examination. Certification is available by Osteopathic Specialty Boards in all specialized fields of medicine and surgery. A prerequisite for license renewal in Florida and most other states are specified continuing education hours every two years.
- **Salary**—See “Salary” under “Doctor of Medicine”.
- **Educational Programs**
 - Doctor of Osteopathic Medicine
 - Lake Erie College of Osteopathic Medicine

■ Nova Southeastern University

● **Professional Associations**

- American Osteopathic Association
- Florida Osteopathic Medical Association

Resources

American Osteopathic Association. <http://www.osteopathic.org/Pages/default.aspx>. Accessed February 13, 2017.

Physician Assistant

- **Description**—Physician assistants (PAs) are health care professionals licensed to practice medicine with physician's supervision. Within the physician/physician assistant relationship, PAs exercise autonomy in medical decisions making and provide a broad range of diagnostic and therapeutic services.
PAs are trained to perform many of the essential, but time-consuming tasks involved in patient care in order to allow more focused application of the physician's knowledge and skills.
With the guidance and supervision of the physician, PAs take medical histories, perform physical examinations, order laboratory tests and x-rays, assist in surgery, apply casts and dressings, make tentative diagnoses, and prescribe certain treatments and medications. They are involved in treating illnesses in all medical and surgical disciplines. Some physician assistants provide pre- and post-operative care to surgical patients. Their duties are quite varied and depend largely on practice environment and state laws regulating their activities. The role of the physician assistant requires intelligence, good judgement, intellectual honesty, the ability to relate effectively with people, and the capacity to react in a calm manner in emergency situations.
- **Areas of Specialization**—Most physician's assistant programs offer a generalist curriculum that prepares graduates to work in general practice or specialty areas. After graduation, if they wish, physician assistants may acquire experience in any medical or surgical specialty such as geriatrics, pediatrics, obstetrics, occupational medicine, orthopedics, cardiology, or surgery.
- **Work Environment**—Most PAs work with physicians in private solo practices or group partnership practices. Others work in hospitals, clinics, schools, home health agencies, nursing homes, prisons, and rehabilitation centers. Their schedules vary depending on practice setting. PAs in clinics usually work 50 hours each week. Those working in physicians' offices may be on-call or have to work evening and weekend hours.
- **Job Outlook**—The number of physician assistants employed in Florida in 2006 was 5,412. It is projected that in 2024 there will be 7,188, an annual average growth rate of 4.1 percent. In 2016, the Florida Department of Economic Opportunity identified the PA profession as the second fastest growing occupation in Florida. The same data projects a 32.8% increase in job opportunities between 2016 and 2024.
- **Length of Trainings/ Requirements**—PAs are educated in the medical model. The average PA program curriculum is 111 weeks, compared with 155 weeks for medical school. Students pursuing careers as physician assistants may receive a certificate, an associate degree, a bachelor's degree, or a master's degree. All accredited programs follow similar curriculums as described in the Educational Standards by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA). Most Schools offering a bachelor's degree require at least two years of college and some health-related

experience. Those offering a master's program require the applicants to have a bachelor's degree. The Physician assistant programs include instruction in nutrition, biochemistry, human anatomy and physiology, disease prevention, clinical medicine, pharmacology, clinical procedures,, and medical, legal and ethical issues. The students also participate in rotations that offer clinical training in a variety of areas such as emergency medicine, family medicine, internal medicine, obstetrics and gynecology, pediatrics, psychiatry, and surgery.

- **Advancement**—Some physician assistants complete additional training to gain additional knowledge and experience in a particular area such as surgery, neurology, or emergency medicine. There are several post-graduate training programs that provide this optional training opportunity. Also, with additional experience, physician assistants may advance to positions with greater clinical and administrative responsibility.
- **Licensure/Certification**—Licensure is required for practice in the state of Florida. The requirements for licensure include completion of a program that is approved by the Florida Board of Medicine and national certification. Upon graduation, physician assistants take the Physician Assistant National Certifying Examination (PANCE) developed by the National Commission on Certification of Physician Assistants (NCCPA) in conjunction with the National Board of Medical Examiners. To maintain national certification, PAs must log 100 hours of continuing medical education every two years and sit for the Physician Assistant National Recertifying Exam (PANRE) every ten years.
- **Salary**—According to the Bureau of Labor Statistics, the annual mean wage of physician assistants working in Florida was \$101,480 in 2015.
- **Educational Programs**
 - Postgraduate
 - Barry University
 - Keiser University
 - Miami Dade College
 - Nova Southeastern University
 - South University
 - University of Florida
- **Professional Associations**
 - American Academy of Physician Assistants
 - Florida Academy of Physician Assistants

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Accredited Programs. ARC-PA. <http://www.arc-pa.org/accreditation/accredited-programs/>. Accessed January 23, 2017.

Podiatric Physician

- **Description**—Podiatrists, also known as Doctors of Podiatric Medicine (DPMs), specialize in the diagnosis and treatment of disorders, diseases, and injuries of the foot, ankle, and leg.

The most common problem treated by podiatrists include basic medical and surgical treatment of corns, calluses, ingrown toenails, hammertoes, bunions, arch problems, fractures and sprains of the foot and ankle, diabetic foot problems and wounds, warts, and skin diseases such as athlete's foot. To diagnose a lower extremity condition, the podiatrist may take x-ray, perform blood tests, or prescribe other diagnostic and laboratory testing. Treatment may include prescribing medications, fitting corrective devices or corrective footwear, casting, injections, or performing surgery on the affected area. A podiatrist has the ability to recognize systemic disorders of the body which may first appear in the lower extremity, such as diabetes, heart disease, and arthritis.

Preventative foot care is a major concern for DPMs. the profession requires a scientific aptitude, manual dexterity, good business sense, and the ability to work with a variety of people.

- **Areas of Specialization**—Most podiatrists have a general practice. However, some specialize in surgery, sports medicine, orthopedics, public health, and even subspecialties such as pediatrics, oncology, geriatrics, wound management, and diabetic foot care.
- **Work Environment**—Most podiatrists work independently in private or group practice in conjunction with rehabilitation centers, hospitals, or teaching/research centers.
- **Job Outlook**—The number of podiatrists employed in Florida in 2016 was 919. It is projected that in 2024 there will be 990. An annual average growth rate of 1 percent.
- **Length of Trainings/ Requirements**—Prerequisites for admission to a college of podiatric medicine, as with allopathic or osteopathic medicine, include the completion of at least three years of undergraduate study, an acceptable grade point average, and suitable score on the Medical College Admissions Test (MCAT). Undergraduate college work should include courses in English, chemistry, biology or zoology, physics, and math. Colleges of podiatric medicine offer four year programs with core courses similar to schools of medicine. Graduates receive the degree of Doctor of Podiatric Medicine (DPM). Barry University offers a combined seven-year BS/MS/DPM degree, as well as a joint DPM/MBA degree program (see academic advisor). Most graduates then go on to complete two to four years of residency.
- **Licensure/Certification**—License requirements in Florida include a degree from a school or college of podiatric medicine that is approved by the Council on Podiatric Medical Education, passing scored on the National Medical Boards and on the examination required by the Florida Board of Podiatric Medicine, and either a minimum of one year of residency training or 10 years of continuous practice in another state. As

with all other physicians in the state of Florida, podiatrists must complete a minimum of 40 hours of continuing medical education every two years for license renewal.

- **Salary**—The annual mean wage for podiatric physicians in Florida in 2015 was \$112,930, or \$54.29 hourly mean wage.
- **Educational Programs**
 - Doctor of Podiatric Medicine
 - Barry University
- **Professional Associations**
 - American Association of Colleges of Podiatric Medicine
 - American Podiatric Medical Association
 - Florida Podiatric Medical Association

Resources

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Medical Office Personnel

- A skilled support staff is a tremendous asset to any clinical, medical or dental setting. Due to recent rapid advances in healthcare, well-trained personnel are needed in a variety of areas such as physicians' and dentists' offices, long-term care facilities, hospitals, and medical insurance companies. Both medical assistants and medical administrative specialists are employed in administrative services such as scheduling appointments, handling bills and payments, maintaining medical records, and insurance forms.
- As medical administrative specialists are responsible for front office duties, they must be knowledgeable in medical terminology, file maintenance, scheduling for both hospital admissions and out-patient procedures, and be proficient in typing and transcription. Medical assistants may be responsible for these front office duties and also clinical tasks such as preparing the patient for the examination and/or treatment, performing laboratory work, administering electrocardiograms, and performing x-rays. These personnel are very important members of the health care team.

Medical Administrative Specialist

- **Description**—The state of Florida now recognizes medical secretaries as medical administrative specialists. These workers perform a variety of administrative and clerical tasks necessary to keep an office or organization running smoothly. They schedule appointment, organize and maintain files, and transcribe dictation of letters and reports such as case histories.
Medical secretaries and administrative professionals need to know medical terminology and be familiar with hospital, laboratory, and medical procedures as well as general office procedures. Secretaries may also have business responsibilities such as billing patients and insurance companies. Secretaries must be consistent, reliable, and pay great attention to detail.
- **Areas of Specialization**—Some medical administrative specialists train in specific areas of medicine. They learn the specialized terminology and procedures used in specialties such as dermatology, surgery, pathology, and others.
- **Work Environment**—Medical administrative specialists may be employed in the offices of physicians in solo or group practice. They may also work in hospitals, clinics, state or local health departments, chiropractic, veterinary and dental offices, hospice centers and medical research centers. They usually work in clean, well-lighted facilities. They often sit for long periods typing at a computer terminal. Medical administrative specialists generally work 40-hour weeks; however, some positions are part time.
- **Job Outlook**—The number of Medical Administrative Specialists (sometimes still categorized as Medical Secretaries in statistical databanks) employed in Florida in 2016 was 20,694. It is projected that in 2024 there will be 24,446, an annual average growth rate of 2.3 percent.
- **Length of Trainings/ Requirements**—They must be proficient in typing, good at spelling, punctuation, grammar, and oral communications. Knowledge of and proficiency in various office and medical software systems is essential. Specialist training ranges from high school vocational education programs to one- to two-year community college programs.
- **Advancement**—Qualified medical administrative specialists who broaden their knowledge through experience and/or education may be promoted to positions such as administrative assistant or office manager. Management skills, computer training, human relations skills, and experience with financial management are important factors in promotion.
- **Licensure/Certification**—Certification is available from the International Association of Administrative Professionals. To be eligible to take the Certified Professional Secretary (CPS) examination, a specialist must have from two to four years of full-time experience,

with two years required if the secretary has a bachelor's degree, three years with an associate degree, or four years with a high school diploma.

- **Salary**—In 2015, the Bureau of Labor Statistics reported the annual mean wage of medical secretaries was \$31,250.

- **Educational Programs**

- Certificate

- Ultimate Medical Academy
- Daytona State College
- Indian River State College
- Broward College
- Pasco-Hernando State College
- Florida State College at Jacksonville
- Hillsborough Community College
- Eastern Florida State College
- Valencia College
- Gulf Coast State College
- Everest University-Brandon
- Northwest Florida State College
- Everest University-South Orlando
- South Florida State College
- Lake-Sumter State College
- Florida National University-Main Campus
- Atlantic Technical College
- Everest University-Melbourne
- New Professions Technical Institute
- Everest University-Largo
- Everest University-Orange Park
- Tom P Haney Technical Center
- Orange Technical College-Winter Park Campus
- Key College
- Everest University-North Orlando
- Prestige Health & Beauty Sciences Academy
- Suncoast Technical College
- CHOICE High School and Technical Center
- Orange Technical College-Westside Campus
- Withlacoochee Technical Institute
- Immokalee Technical College
- Manatee Technical College
- Brewster Technical College
- Cape Coral Technical College
- Charlotte Technical Center
- Fort Myers Technical College
- Everest University-Tampa
- Ridge Career Center
- George Stone Technical Center
- Technical Education Center-Osceola
- Lorenzo Walker Technical College
- Traviss Career Center
- Everest University-Lakeland

- William T McFatter
Technical College
- Marion County Community
Technical and Adult
Education Center
- Flagler Technical Institute
- First Coast Technical
College
- RIVEROAK Technical
College
- Orange Technical College-
Orlando Campus
- Pinellas Technical College-
Clearwater
- Associate
 - Brevard Community
College
 - Broward College
 - City College Casselberry
 - Key College
 - Palm beach Community
College
- Bachelor's
 - City College Fort
Lauderdale
 - Florida State College at
Jacksonville
- Emerald Coast Technical
College
- Lively Technical Center
- North Florida Community
College
- Radford M Locklin
Technical Center
- Taylor Technical Institute
- Superior Career Institute
- Florida Panhandle
Technical College
- South University-Tampa
- Pasco-Hernando
Community College
- South Florida
Community College
- Ultimate Medical
Academy
- Florida National College
- Indian River State
College

- **Professional Associations**

- International Association of Administrative Professionals

Resources

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43-6013 Medical Secretaries. U.S. Bureau of Labor Statistics. <https://www.bls.gov/OES/current/oes436013.htm>. Accessed January 23, 2017.

Medical Assistant

- **Description**—The work of medical assistants is varied. They assist physicians in their offices or other medical settings by performing both clerical and clinical duties. Their clinical duties may include preparing patients for examinations and/or treatment, obtaining blood pressure, pulse, and temperature, administering medication, assisting the physician in the examination, performing phlebotomy and medical laboratory procedures and electrocardiograms, taking x-rays, sterilizing equipment, and assisting with minor office surgery. Clerical duties include scheduling and receiving patients, maintaining records, handling telephone calls, and assuming responsibility for billing, collections, and insurance claims. Medical assistant responsibilities vary from one office to the next. In a small office, the assistant may be a generalist while in a larger office the physician may expect the assistant to perform either clerical or clinical duties, but not both.
- **Areas of Specialization**—Assistants may specialize in a particular area of medicine, such as podiatry, rehabilitation, ophthalmology, and sports medicine.
- **Work Environment**—Most medical assistants are employed in physicians' offices. They may also work in hospitals, medical clinics, or health maintenance organizations. They generally work 40-hour weeks, which may include weekends. Work is usually very pleasant in clean, air-conditioned offices. Uniforms may be required but a stipend may be paid for them. Work schedules are often flexible and many employers are now offering excellent fringe benefits.
- **Job Outlook**—The number of Medical Assistants employed in Florida in 2016 was 48,659. It is projected that in 2024 there will be 60,287, an annual average growth rate of 3 percent.
- **Length of Trainings/ Requirements**—Completion of a formal training program is preferred prior to employment; however, medical assistants may be trained on the job. Formal training programs are offered in schools of technology or community colleges. Technology programs take one year or less to complete and result in a certificate. Community college programs are usually two years in length and award an associate degree. Students in these educational programs take courses in anatomy, physiology, medical terminology, clinical procedures, pharmacology, word processing, insurance coding and billing, transcription, administrative office procedures, basic laboratory procedures including phlebotomy, radiology procedures, and emergency procedures, and medical office management. Some technology schools and community colleges also have externship training component in addition to the course work. Applicants to the programs must achieve 10th grade levels on the Test for Adult Basic Education (TABE) prior to program completion.
- **Advancement**—Advancement can come with experience and additional training. Medical assistants may move into management or administrative positions without further education. Advancement in the clinical area requires additional schooling,

however. Articulation at some colleges and universities is now in place/. Students who are already certified as medical assistants can seek a degree in such areas as “Health Service Management,” after completion of general education requirements. The Certified Medical Assistant (CMA) or Registered Medical Assistant (RMA) can also be used for acceptance in some of the college/university transitional programs such as nursing and emergency medical services.

- **Licensure/Certification**—At this time, licensing is not available in the state of Florida. However, medical assistants may voluntarily take the certification examination offered by the American Association of Medical Assistants to become a Certified Medical Assistant (CMA) or seek credentialing by the American Medical Technologists to become a Registered Medical Assistant (RMA).

- **Salary**—According to the Bureau of Labor Statistics, the annual mean wage for medical assistants in Florida in 2015 was \$30,170, or \$14.51 per hour.

- **Educational Programs**

- Diploma

- American College of Medical Careers
- American Institute
- Everest University
- Southeastern College
- Southern Technical College
- Anthem College
- Brightwood College
- Cambridge Institute of Allied Health & Technology
- Career Institute of Florida
- Central Florida Institute
- Centura Institute
- Concorde Career College
- Dade Medical College
- Erwin Technical Center
- FastTrain
- Florida Career College
- Fortis College
- Fortis Institute
- Herzing University
- Kaplan Career Institute
- Mattia College
- MedVance Institute
- Rasmussen College
- Sanford-Brown College
- Sanford-Brown Institute
- Southwest Florida College
- Technical Career Institute
- United Education Institute
- Virginia College

- Certificate

- Broward College
- Cambridge Institute of Allied Health & Technology
- Daytona State College
- Eastern Florida State College - Cocoa
- First Coast Technical Institute
- Indian River State College
- Lively Technical Center
- Lorenzo Walker Institute of Technology
- Manatee Technical Institute

- Marion County Community Technical and Adult Education
- McFatter Technical Center
- Palm Beach State College
- Pensacola State College
- Pinellas Tech Education Center
- Robert Morgan Educational Center
- Winter Park Tech

○ Associate

- American College of Medical Careers
- Everest University
- Fortis College
- Southern Technical College
- Virginia College
- Anthem College
- Centura Institute
- Dade Medical College
- Heritage College
- Jones College
- Kaplan Career Institute
- Rasmussen College
- Sanford-Brown College
- Southwest Florida College
- Associate of Science (AS) or Associate of Applied Science (AAS)
- Keiser University
- ASA College
- Dade Medical College

● **Professional Associations**

- American Association of Medical Assistants
- American Society of Podiatric Medical Assistants
- American medical Technologists
- Registered Medical Assistants of American Medical Technologists

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31-9092 Medical Assistants. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes319092.htm#st>. Accessed January 24, 2017.

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Mental Health Professions

- Mental health professionals help people promote optimal mental health and reduce personal stress responses by dealing constructively with their psychological, emotional, and social problems, both individually and in groups. psychiatrists, psychologists, mental health counselors, marriage and family therapists, social workers, substance abuse counselors, and psychiatric technicians/aides are considered mental health professionals.
- A psychiatrist is a medical doctor who specializes in diagnosing and treating mental and emotional disorders, focusing on biological causes and possible medications to treat them. Psychologists utilize interviewing, psychological testing, and psychotherapy, with a focus on how a patient's thinking and behavioral patterns affect the ability to adjust to life's problems. Clinical psychologists work with a variety of stress-related health conditions that span both physical and mental health problems. Marriage and family therapists work with individuals, couples, families, and groups to promote strengths in relationships and larger systems while finding solutions to difficult family and mental health issues.
- Mental health technicians/aides are mental health workers with a level of training between professional and para-professionals. They work under the supervision of mental health professionals in both in-patient and out-patient settings that provide psychiatric services to alcohol and drug abusers, emotionally and mentally disturbed adults or children, the intellectually and developmentally disabled and the aged.
- Social workers aid clients who are overwhelmed by social problems and needs caused by factors such as poverty, inadequate housing, unemployment, illness, family maladjustments, physical, mental, and emotional handicaps. Substance abuse counselors work with people who have alcohol and other drug problems to overcome their addiction to these substances. Marriage and family therapists aid individuals and families experiencing problems with family relationships or other aspects of their social functioning that affect the family unit, such as divorce, family violence, childbearing, and parenting.
- Mental health workers work with a full range of other health professionals, community agencies, and the courts to provide services for their clients/patients. Important characteristics for mental health workers include stable personal and familial functioning, a sense of responsibility, and the ability to remain calm in emergencies. They must be willing to attempt to help other people who are in distress and be flexible in accepting the full range of human diversity in coping with stress.

Marriage and Family Therapist

- **Description**—Marriage and family therapists help people learn to solve family problems by managing close relationships in productive, cooperative, and satisfying ways. They address a wide array of relationship issues and diagnose and treat mental and nervous disorders and problems within a family system.
Individuals, couples, and families benefit from the unique perspective and skills of marriage and family therapists, whether the presenting concern is a couple's relationship, children, blended or stepfamilies, eldercare, or if the issue is a specific disorder, such as eating disorders or depression. The marriage and family therapists will consult with all involved in the problem including parents, spouses, children, friends, school personnel, social services, community agencies, and the courts.
- **Areas of Specialization**—Marriage and family therapists specialize in understanding the clients' symptoms and interaction patterns within their existing environment as they treat individuals, couples, families, and groups of individuals.
- **Work Environment**—Marriage and family therapists work in clinics, agencies, hospitals, schools, and private practice. Hours must be flexible to accommodate families in crisis and working people who require evening or weekend appointments.
- **Job Outlook**—Marriage and family therapists work in clinics, agencies, hospitals, schools, and private practice. Hours must be flexible to accommodate families in crisis and working people who require evening or weekend appointments.
- **Length of Trainings/ Requirements**—Training in family therapy begins at the master's level. Students holding a bachelor's degree are admitted to the program in marriage and family therapy. The length of the master's program is generally two years full-time. The course sequence includes classroom studies in clinical theory, diagnosis, and assessment, as well as clinical practicum time. Doctoral education in family therapy emphasizes the training of supervisors, teachers, researchers, and clinicians in the discipline.
- **Licensure/Certification**—Educational requirements for licensure include a minimum of a master's degree from an accredited university with major emphasis in marriage and family therapy. Three years of experience as a marriage and family therapist, two of which must be post-master's level under the supervision of a qualified marriage and family therapist, are required for licensure. The examination is given by the Board of Clinical Social Work, Marriage and Family Therapy, and Mental Health Counseling.
- **Salary**—The annual mean wage for marriage and family therapists in Florida in 2015 was \$43,790.
- **Educational Programs**
 - Master's
 - Nova Southeastern University
 - University of Miami

- Rollins College
 - Palm Beach Atlantic University
 - St. Thomas University
 - Barry University
 - Florida State University
 - Stetson University
 - University of Florida
- PhD
 - Florida State University
 - Nova Southeastern University
 - University of Florida
- **Professional Associations**
 - American Association for Marriage and Family Counseling
 - National Board for Certified Counselors

Resources

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<http://floridasmentalhealthprofessions.gov/licensing/licensed-marriage-and-family-therapist/>. Accessed January 25, 2017.

Mental Health Counselor

- **Description**--“Clinical mental health counseling is the provision of professional counseling services including the application of principles psychotherapy, human development, learning theory, group dynamic, and the etiology of mental illnesses and dysfunctional behavior to individuals, couples, families, and groups for the purposes of promoting optimal mental health, dealing with normal problems of living, and treating psychopathology.” (AMHCA, 1999)
Examples of dysfunctions requiring a mental health counselor’s skills for diagnosis and referral or treatment are addictions and substance abuse, family problems, parenting and marriage conflicts, stress management, depression and suicidal ideation, career concerns, issues related to aging, and problems with self-esteem.
- **Areas of Specialization**—Mental health counselors may specialize in areas, such as career counseling, substance abuse, or with any particular age groups.
- **Work Environment**—Most mental health counselors work in private practice, hospitals, counseling centers, partial hospitalization programs, group practices, corporations, HMOs, and government agencies. Surroundings are generally comfortable and pleasant. A 40-hour work week is standard with evenings and weekends available for the convenience of clients.
- **Job Outlook**—The number of mental health counselors employed in Florida in 2016 was 4,779. It is projected that in 2024 there will be 5,628. This represents an annual average growth rate of 2.2 percent.
- **Length of Trainings/ Requirements**—A 60-credit master’s degree in mental health counseling, community counseling, or psychology is the minimal entry level. Coursework includes human development, psychopathology, counseling and personality theories, legal and ethical issues, multiculturalism or diversity, sexuality, substance abuse, research, counseling skills, group work, career counseling, assessment, and practicum.
- **Advancement**—With additional experience and training mental health counselors may advance to supervisory or management positions.
- **Licensure/Certification**—Candidates for licensure must have a master’s degree in mental health counseling or another acceptable area of specialization, reflecting a curriculum that is consistent with the Council for Accreditation of Counseling and Related Educational Programs. In addition, the candidate must have two years of supervised post-master’s clinical experience and must pass the examination issued by the National Board for Certified Counselors. Continuing education hours are required every two years for license renewal.
- **Salary**—According to the Bureau of Labor Statistics, the annual mean wage of mental health counselors in Florida in 2015 was \$42,980 per year.
- **Educational Programs**

- Master's Degree

- Argosy University
- Barry University
- Carlos Albizu University-Miami
- Florida Agricultural and Mechanical University
- Florida Atlantic University
- Florida Gulf Coast University
- Florida Institute of Technology
- Florida International University
- Florida State University
- Hodges University
- Jacksonville University
- Keiser University
- Nova Southeastern University
- Palm Beach Atlantic University
- Rollins College
- Saint Leo University
- South Florida Bible College and Theological Seminary
- South University
- St Thomas University
- Stetson University
- The University of West Florida
- University of Central Florida
- University of Florida
- University of Miami
- University of North Florida
- University of South Florida

- Doctoral Degree

- Argosy University
- Barry University
- Carlos Albizu University-Miami
- Florida Atlantic University
- Florida Institute of Technology
- Florida International University
- Florida State University
- Nova Southeastern University
- University of Central Florida
- University of Florida
- University of Miami
- University of South Florida

- **Professional Associations**

- American Counseling Association
- American Mental Health Counselors Association
- Florida Counseling Association

Resources

21-1014 Mental Health Counselors. U.S. Bureau of Labor Statistics.

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<https://www.bls.gov/ooh/community-and-social-service/mental-health-counselors-and-marriage-and-family-therapists.htm#tab-7>. Accessed January 24, 2017.

Mental Health/Psychiatric Technician/ Aide

- **Description**—Mental health technicians and aides, also known as psychiatric technicians and aides, work with emotionally disturbed or mentally impaired individuals, usually in psychiatric hospitals or mental health clinics. They work as members of interdisciplinary teams of mental health professionals such as psychiatrists, psychologists, registered nurses, and others. In general, mental health/psychiatric aides help patients with personal grooming and participation in educational, recreational, and therapeutic activities. They may interact with patients and spend more time with patients than any other team members.

Mental health/psychiatric technicians have more formal training than aides. Technicians participate in both the planning and implementing of individual patient treatment plans. They may be responsible for admitting and interviewing patient, record keeping, assisting in administration of medicine, and conducting therapy sessions. Mental health technicians and aides need to have good observational skills. They must recognize and report changes in behavior of patients to other team members. Personal characteristics that are important for this job are a stable personality, ability to work well with people and the motivation to help others.

- **Areas of Specialization**—There are a number of opportunities for specialization in a particular aspect of mental health care. The mental health technician/aide may specialize in helping mentally disturbed children. Others may work in drug and alcohol abuse or crisis intervention. Another area of specialization is working in community mental health. These technicians may be primarily concerned with parental effectiveness, the elderly, or problems dealing with interpersonal relationships. With additional training, they may work with intellectually and developmentally challenged people.
- **Work Environment**—Mental health technicians/aids work in a wide variety of settings including mental hospitals, community general hospitals, community mental health centers, psychiatric clinics, schools for the intellectually and developmentally disabled, social service agencies, geriatric nursing homes, child or adolescent centers, and halfway houses. They generally work a 40-hour week. Because patients need care 24 hours a day, scheduled work hours may include nights, weekends, and holidays. They will spend most of their time on their feet. They are sometimes confronted with violent patients who must be restrained. This may be emotionally draining, but they may also gain satisfaction from assisting those in need.
- **Job Outlook**—The number of psychiatric technicians employed in Florida in 2016 was 8,045. It is projected that in 2024 that there will be 8,967. This represents an annual average growth rate of 1.4 percent.
- **Length of Trainings/ Requirements**—High school courses that would be helpful for this occupation include psychology, social science, hygiene, art, and music. Post-secondary education is needed to work as a technician and can be obtained in vocational

technical centers and community colleges. The program includes courses in mental health/illness theory. Communication skills, crisis intervention, psychotropic medications, substance abuse, and employment skills. The training programs may be one year or more. Mental health aides must acquire 450 hours of on-the-job training.

- **Advancement**—If not supervised directly by clinicians, aides are supervised by technicians, for whom ascending grade and supervision levels may exist depending on level of certification and the employing agency. Additional training will be required for significant advancement. Many students pursue a four-year college degree in special education, social work, psychology, and sociology.
- **Licensure/Certification**—No license is required; most mental health technicians (aka psychiatric aides) learn their skills on the job, from experienced workers or employer-provided classroom instruction. However, hospitals and nursing care facilities may require previous experience and/or certification as a nursing assistant (CNA).
- **Salary**—According to the Bureau of Labor Statistics, the Florida 2015 annual mean wage for psychiatric aides was \$25,830 and the annual mean wage for psychiatric technicians was \$26,680.
- **Educational Programs**
 - Certificate
 - Atlantic Technical College
 - Brewster Technical Center
 - St Petersburg College
- **Professional Associations**
 - American Psychiatric Association
 - National Mental Health Association
 - American Association of Psychiatric Technicians

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31-1013 Psychiatric Aides. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes311013.htm#st>. Accessed January 26, 2017.

29-2053 Psychiatric Technicians. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes292053.htm#st>. Accessed January 26, 2017.

Psychologist

- **Description**—Psychologists attempt to understand people’s capacities, traits, and behaviors and to explain their needs.

A clinical psychologist is concerned with finding, preventing, and treating emotional and mental disorders and helping clients/patients develop more rewarding lives. Clinical or counseling psychologists work directly with patients, interviewing, taking histories, administering diagnostic tests, and observing the patients’ behaviors in order to help them with their problems. Clinical psychologists may collaborate with physicians and other health team members to develop treatment programs. A clinical psychologist does not prescribe medication. This requires a medical degree, which is earned by a psychiatrist. Many of today’s graduating clinical psychologists are involved in applied clinical research, such as program evaluation, as well as the design and implementation of empirically based clinical interventions. Their training in research methodology makes clinical psychologists uniquely suited for applying scientific methods to evaluate and enhance existing programs.

- **Areas of Specialization**—Psychologists may specialize in a variety of types of psychology, such as clinical, counseling, experimental, developmental, personality, physiology, educational, school, social, research, and industrial-organizational. The majority are clinical, counseling or school psychologists.
- **Work Environment**—Counseling and clinical psychologists generally work in hospitals or clinics, or maintain their own private practices. Many clinical psychologists also work in medical centers where they deliver treatment and conduct research. In recent years, clinical psychologists are increasingly employed as researchers. Place of employment often determines working conditions. They usually have pleasant, comfortable offices. Those employed in hospitals or other health facilities may work evenings and weekends. Psychologists in private practice may set their own hours, but they may also work evenings to accommodate their clients. School psychologists often work in the school system. Industrial-organizational psychologists work with industry or in private consulting firms. All areas of specialization may be involved in college teaching and academic research.
- **Job Outlook**—The Florida Department of Economic Opportunity has projected a 13% growth in clinical, counseling, and school psychologist jobs and a 16.1% job growth in all other psychologist employment by 2024.
- **Length of Trainings/ Requirements**—At least a master’s degree with a major in psychology is required for employment in the field of psychology. Many positions require a doctoral degree and it is of increasing importance for advancement. To become licensed as a psychologist, you must have a doctorate in psychology. Requirements usually include practical experience in an applied setting or a master’s thesis based on research. The average number of years required to complete a doctoral degree is seven

nationwide. In clinical psychology, the requirements for the doctoral degree generally included an additional year or more of internship. Competition for admission into graduate programs is keen, often requiring exceptionally high grades and combined GRE verbal and numerical scores above 1200. Many psychology programs offer a variety of specializations within the department. Students should contact the individual departments for areas of concentration.

- **Advancement**—Government and private agencies offer promotions based on experience and excellent performance. A psychologist working in a mental health clinic may advance to director of the clinic. Success in private practice depends on the psychologist’s skills and abilities as a practitioner, as well as some attention to marketing techniques and networking. Success in academic positions may result in promotion to full professor.
- **Licensure/Certification**—Candidates of licensure must have a doctoral degree with a major in psychology from a program approved by or comparable to those approved by the American Psychological Association (APA). Two years of supervised experience in the field of psychology, only one of which may be pre-doctoral, are required for licensure. The written examination consists of two parts- part I is the Examination for Professional Practice sponsored by the American Association of State Psychology Boards, which is a national exam. Part II of the examination is a state exam which tests knowledge of laws and rules relating to the practice of psychology in Florida.
- **Salary**—The Bureau of Labor Statistics recorded an annual mean wage of \$71,810 for clinical, counseling, and school psychologists in Florida in 2015.
- **Educational Programs**
 - Bachelor’s Degree
 - Argosy University
 - Ave Maria University
 - Barry University
 - Beacon College
 - Bethune-Cookman University
 - Carlos Albizu University
 - Clearwater Christian College
 - Eckerd College
 - Edward Waters College
 - Flagler College
 - Florida Agricultural and Mechanical University
 - Florida Atlantic University
 - Florida Gulf Coast University
 - Florida Institute of Technology
 - Florida International University
 - Florida Memorial University
 - Florida Southern College
 - Florida State University
 - Hobe Sound Bible College
 - Keiser University
 - Nova Southeastern University
 - Palm Beach Atlantic University
 - Rollins College
 - South Florida Bible College and Theological Seminary

- South University
- St Thomas University
- Stetson University
- The University of Tampa
- The University of West Florida
- Trinity College of Florida

- University of Central Florida
- University of Florida
- University of Miami
- University of North Florida
- University of South Florida
- Warner University

○ Master's Degree

- Argosy University
- Barry University
- Carlos Albizu University-Miami
- Florida Agricultural and Mechanical University
- Florida Atlantic University
- Florida Gulf Coast University
- Florida Institute of Technology
- Florida International University
- Florida State University
- Hodges University
- Jacksonville University
- Keiser University
- Nova Southeastern University

- Palm Beach Atlantic University
- Rollins College
- Saint Leo University
- South Florida Bible College and Theological Seminary
- South University
- St Thomas University
- Stetson University
- The University of West Florida
- University of Central Florida
- University of Florida
- University of Miami
- University of North Florida
- University of South Florida

○ Doctorate Degree

- Argosy University
- Barry University
- Carlos Albizu University-Miami
- Florida Atlantic University
- Florida Institute of Technology
- Florida International University

- Florida State University
- Nova Southeastern University
- University of Central Florida
- University of Florida
- University of Miami
- University of South Florida

● **Professional Associations**

- Association of State and Provincial Psychology Boards
- American Board of Professional Psychology

- American Psychological Association
- Association of State and Provincial Psychology Boards

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<http://floridaspsychology.gov/licensing/psychologist-licensure-by-examination/>. Accessed January 30, 2017.

19-3031 Clinical, Counseling, and School Psychologists. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes193031.htm#st>. Accessed January 30, 2017.

Social Worker

- **Description**—Social workers help people deal with the problems of life, such as inadequate housing, unemployment, financial management, illness, substance abuse, family conflicts, and abuse. This kind of help may involve assessment of mental health status and ongoing case management.
Social worker roles vary widely. They may focus on counseling individuals or families and groups, and/or helping them find community resources such as child care, debt counseling, public assistance, and substance abuse counseling, and then following up on the clients. Some positions may address policy and suggesting legislative or other solutions. Social workers should be emotionally mature, objective, sensitive, very responsible, and able to work well with all types of people.
- **Areas of Specialization**—Social work offers a broad range of specialties, including mental health assessment, counseling of individuals, families, or other groups, and community planning or organizing for the purpose of social problems within a neighborhood. Areas of specialization include aging, child welfare, addictions, family services, school social work, justice/corrections, developmental disabilities, occupational social work, health care, mental health, community organization, and international social work.
- **Work Environment**—Depending on their specialty, social workers may be found in public and private settings. Typically, social workers are employed in schools, hospitals, mental health centers, family service agencies, substance abuse programs, government agencies, the court system, and correctional institutions. Most social workers have five-day, 40-hour weeks. However, they may work evenings and weekends to attend community events, handle emergencies, or meet program and client needs.
- **Job Outlook**—The total number of social workers employed in Florida in 2006 was 22,038 with a 2024 projection of 25,180. The growth rate among the various specialties ranges from 2.4 percent to 1 percent.
- **Length of Trainings/ Requirements**—A social work degree must be awarded by a college or university that is accredited by the Council on Social Work Education. A bachelor's degree in social work usually requires four years of college and is the minimum requirement for most positions. Classroom instruction included social work practice, social welfare policies, human behavior, and social research methods. Also, 400 hours of supervised field experience are required. A master's degree program in social work typically lasts two years and includes 900 hours of supervised field instruction. A bachelor's degree in social work is not required for entry into a master's program; however, courses in psychology, biology, sociology, economics, political science, anthropology, statistics, and social work are recommended. Completion of the master's program is required for positions in mental health settings and many other settings involving counseling.

- **Advancement**—Social workers may advance to positions as supervisors, program managers, assistant directors, or executive directors of departments or agencies. They may also pursue advanced degrees (Ph.D.) in order to do research or teach at the university level.
- **Licensure/Certification**—Licensing policies vary from state to state. In Florida, the candidate for licensure must at least have a master’s degree in social work from an accredited school and two years of experience under a qualified supervisor. Those two years must be at the post-master’s level. The candidate must also pass an exam given by the American Association of State Social Work Boards. Continuing education hours are required every two years for license renewal.
- **Salary**—The annual mean wage in Florida in 2015 for mental health and substance abuse social workers \$41,020; for child, family, and school social workers was \$40,690; for healthcare social workers was \$54,380; and \$62,840 for all other social workers.
- **Educational Programs**
 - Bachelor’s Degree
 - Barry University
 - Florida Agricultural and Mechanical University
 - Florida Atlantic University
 - Florida Gulf Coast University
 - Florida International University
 - Florida Memorial University
 - Florida State University
 - Saint Leo University
 - Southeastern University
 - University of Central Florida
 - University of North Florida
 - University of South Florida
 - University of West Florida
 - Warner University
 - Master’s Degree
 - Barry University
 - Florida Agricultural and Mechanical University
 - Florida Atlantic University
 - Florida Gulf Coast University
 - Florida International University
 - Florida State University
 - Saint Leo University
 - University of Central Florida
 - University of South Florida
 - University of West Florida

- **Professional Associations**

- Florida Chapter of the National Association of Social Workers
- National Association of Social Workers

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21-1021 Child, Family, and School Social Workers. U.S. Bureau of Labor Statistics.

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21-1022 Healthcare Social Workers. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes211022.htm#st>. Accessed January 30, 2017.

21-1023 Mental Health and Substance Abuse Social Workers. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes211023.htm#st>. Accessed January 30, 2017.

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<http://floridasmentalhealthprofessions.gov/licensing/licensed-clinical-social-worker/>. Accessed January 30, 2017.

Substance Abuse Counselor

- **Description**—Substance abuse counselors work with people who are addicted to alcohol and/or other substances. These counselors must assess their clients and then provide appropriate individual or group counseling to help them identify and understand behaviors and problems related to their addictions.
Substance abuse counselors work with mental health professionals and other health professionals such as doctors, nurses, and social workers. People interested in substance abuse counseling must be emotionally stable and calm in emergency situations, as they are often involved in crisis intervention.
- **Areas of Specialization**—Family counseling, adolescent treatment, assessment services, education and prevention, criminal justice, eating disorders, and compulsive gambling are all possible areas of specialization for substance abuse counselors.
- **Work Environment**—Substance abuse counselors work in mental health agencies, hospitals, correctional institutions, therapeutic communities (where those addicted live while under treatment), detoxification centers, private practice, and addiction treatment centers. The work week is generally 40 hours, but weekends and holidays may be necessary depending on the setting. Also, many facilities operate 24 hours a day.
- **Job Outlook**—The number of substance abuse counselors employed in Florida in 2016 was 5,065. It is projected that in 2024 there will be 5,975, an annual average growth rate of 2.3 percent.
- **Length of Trainings/ Requirements**—Training programs vary in length from two-year associate degrees to graduate programs. In addition to general college courses, major courses include basic counseling skills, group counseling, family counseling, crisis intervention, substance abuse counseling, research, program evaluation, ethics, records management and other psychology and sociology courses.
- **Advancement**—Substance abuse counselors with at least an associate degree may advance to the position of program director. However, most other advancements in the field require at least a bachelor's or higher degree and state certification as an Addiction Professional. Many treatment centers assist counselors in obtaining continuing education and supervision required for certification and advancement.
- **Licensure/Certification**—Certification as a substance abuse counselor is voluntary and may be obtained by examination from the Certification Board for Addiction Professionals of Florida. There are three levels of certification.
 - Certified Addiction Counselor (CAC). The CAC designation is an intermediate substance abuse credential for those persons who work side-by-side with clinical staff to develop and implement client treatment plans, as well as provide specified substance abuse treatment services. The CAC requires a minimum of a high school diploma or general equivalency degree. Experience hours are prorated for applicants holding an AA degree or higher. All CAC applicants will automatically earn the IC&RC Alcohol and Drug Counselor

(ADC) credential. The CAC is the reciprocal level for individuals seeking to transfer their IC&RC Alcohol and Drug Counselor (ADC) credential into Florida.

- Certified Addiction Professional (CAP) The CAP designation is a professional substance abuse credential for those persons who are assessing, developing, and providing substance abuse treatment services and plans. The CAP requires a minimum of a bachelor's degree in a related field; 6,000 hours (approximately 3 years of full-time work) of addiction-specific, professional-level work experience; 300 hours of direct supervision; 3 professional letters of recommendation; and pass the Florida Certified Addiction Professional Exam. continuing education hours are required every two years for certification renewal.

- Certified Master's Level Addiction Professional (MCAP) The MCAP credential is designed to recognize Addiction Professionals who hold a Master's degree in a related field, 16 hours of training related to the MCAP Supervision domain core competencies, 20 hours of supervision of performance of job tasks specific to the MCAP Supervision domain of practice, and pass the MCAP Upgrade Exam, and complete 20 hours of continuing education per year.

- **Salary**—According to the Bureau of Labor Statistics, the annual mean wage for substance abuse and behavioral disorder counselors in Florida in 2105 was \$45,100.

- **Educational Programs**

- The degree classifications accepted by CAP are: Addiction Studies/Counseling, Mental Health Counseling, Art/Dance Therapy, Music Therapy, Behavioral Healthcare, Nursing, Child Development/Family Relations, Occupational Therapy, Criminal Justice, Pastoral Counseling, Counseling/Guidance, Pharmacy/Pharmaceutical Sciences, Divinity/Religion/Theology (only with a concentration in counseling), Psychology, Drama Therapy/Expressive Arts Therapy, Public Health, Gerontology, Recreational Therapy, Health Education, Rehabilitation Counseling, Health Science, Social Work, Human Services, Sociology, Marriage and Family Counseling, Vocational Counseling, and Medicine.

- All Florida

- **Professional Associations**

- Florida Alcohol and Drug Abuse Association

- Florida Certification Board

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21-1011 Substance Abuse and Behavioral Disorder Counselors. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes211011.htm#st>. Accessed January 30, 2017.

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<http://flcertificationboard.org/certifications/certified-addiction-professional-cap/>. Accessed January 30, 2017.

Certified Addiction Counselor (CAC). Florida Certification Board.

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Certified Master's Level Addiction Professional (MCAP). Florida Certification Board.
<http://flcertificationboard.org/certifications/certified-masters-level-addiction-professional/>. Accessed March 22, 2017.

Nursing

- Nursing is a health profession in very high demand. Nurses care for individuals, families, and the community by restoring health, alleviating suffering, and promoting wellness. They are critical to the care of patients who are ill or injured.
- Nurses have special knowledge and skills with which to provide patients the best health care. They consider the physical as well as the emotional and mental aspects of health. Many of the duties nursing personnel perform are life-saving; others are routine. While most are very challenging, it is rewarding to offer health-related comfort and assistance.
- Nurses work in a variety of settings: hospitals, doctor's offices, public health units, community clinics, nursing homes, the community, and educational institutions. The field offers many personally rewarding career opportunities for both men and women. There are several levels of education, training, and certification available to meet individual needs: nurse practitioner, registered nurse, licensed practical nurse, nursing assistant/patient care assistant, and home health aide.

Home Health Aide

- **Description**—Home health aides or home caregivers care for clients who are recovering from illness, those with terminal illness, or children and adults with physical and mental disabilities in the clients' home settings.

They work under the supervision of registered nurses in provision of personal care such as bathing, assisting with grooming and dressing. They will also assist the client with basic nursing care, including transferring from bed to chair and extremities exercises.

They assist with medication and nutrition.

Aide/caregivers also perform various housekeeping chores such as laundry, grocery shopping, and cleaning. Some assignments allow the aide to take clients to scheduled doctor's visits, to pick up prescriptions, and to other places they wish to go. The home health aide is expected to look and act professional, be reliable, compassionate, cheerful, and must enjoy working with people. It is essential that the aid be able to work independently with little direct supervision. The care provided may require lifting, carrying, bending, and reaching.

- **Areas of Specialization**—The home health aide may care for the following types of clients: hospice patients; individuals with paralysis, stroke or heart disease; the elderly with mental disabilities such as Alzheimer's disease; or individuals with physical disabilities and long-term illnesses.
- **Work Environment**—Working conditions depend on the home. Some may be very pleasant while others may not. Home health aides are usually expected to provide their own transportation. Some time will be spent driving from one place to another. The work week is usually 40 hours, but there is flexibility as some home health aides work part-time. Night and weekend work is sometimes required. Home health aides usually work for state or county welfare agencies, private home health agencies, or on their own.
- **Job Outlook**—The number of home health aides employed in Florida in 2016 was 27,062. It is projected that in 2024 there will be 34,803, an annual average growth rate of 3.6 percent.
- **Length of Trainings/ Requirements**—A high school diploma is not required but desirable for those wishing to enter this field. Most agencies provide training to home health aides if they have no previous experience. Training courses are usually two to three weeks long and focus on maintenance of a clean, safe environment, basic nutrition, basic nursing procedures such as taking and recording vital signs, infection control, recognition of emergencies, communication skills, personal hygiene, range of motion exercises, legal and ethical responsibilities, care of geriatric clients, biopsychosocial support, and supervised home management.

- **Advancement**—These are generally entry-level positions. Additional formal training or education and a willingness to enter other health occupations are usually necessary for advancement.
- **Licensure/Certification**—No license is required.
- **Salary**—According to the Bureau of Labor Statistics, home health aides in Florida earned an annual mean age of \$22,920 in 2015.
- **Educational Programs**
 - Certificate
 - American Health Institute
 - Bradford-Union Area Career Technical Center
 - D.A. Dorsey Educational Center
 - D. G. Erwin Technical Center
 - Flagler Technical Center
 - Florida State College at Jacksonville
 - George Stone Technical Center
 - Henry W. Brewster Technical Center
 - Immokalee Technical Center
 - InterAmerican Technical Institute
 - Lake Technical College
 - Lee County High Tech Center
 - Lively Technical Center
 - Lorenzo Walker Institute of Technology
 - Manatee Technical Institute
 - Medical Institute of Palm Beach
 - Miami Lakes Educational Center
 - Orlando Tech
 - Robert Morgan Educational Center
 - Seminole State College of Florida
 - South Dade Adult Education Center
 - Technical Education Center
 - William T. McFatter Technical Center
- **Professional Associations**
 - National Association for Home Care & Hospice

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31-1011 Home Health Aides. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes311011.htm#st>. Accessed January 30, 2017.

Licensed Practical Nurse

- **Description**—Licensed practical nurses (LPNs) help care for ill or injured people and perform health maintenance duties under the direction of physicians, osteopathic physicians, dentists, and registered nurses.
Most LPNs provide basic bedside care to patient such as taking temperatures, blood pressure, pulse and respirations, applying dressings, helping patients with bathing and personal hygiene, and administering prescribed medication. LPNs observe and report on patients' symptoms, reaction to treatment and medication, and progress. Some LPNs help registered nurses are for seriously ill patients in intensive care units or in the delivery and care of infants.
- **Work Environment**—LPNs work in hospitals, nursing homes, doctors' offices, private homes, health departments, and other settings. They generally work 40-hour weeks which include weekends, nights, and holidays. The work demands that they may be on their feet most of the time. Bending stooping, lifting, and walking are required. The work can be very rewarding for those who enjoy being of service to others.
- **Job Outlook**—The number for LPNs employed in Florida in 2016 was 45,269. It is projected that in 2024 there will be 52,991, an annual average growth rate of 2.1 percent.
- **Length of Trainings/ Requirements--** Practical nursing training programs are offered in community colleges, technical and vocational centers, and hospitals. The programs usually take one year to complete and certify the graduate to take the state licensure examination. Most programs require applicants to have a high school diploma or the equivalent and pass a physical exam. Classroom instruction covers basic nursing concepts, anatomy, physiology, nutrition first-aid, and other related subjects. Supervised clinical experience is provided in hospitals and other settings.
- **Advancement**—LPNs may advance to become charge nurses who oversee the work of other LPNs and of nursing aides in some settings. LPNs may also choose to become registered nurses through LPN-to-RN training programs.
- **Licensure/Certification**—Licensure is required to practice in Florida. Graduates of practical nursing programs approved by the Florida State Board of Nursing must pass the written examination from the National Council of State Boards (NCLEX PN) to be licensed. Continuing education hours are required every two years for license renewal.
- **Salary**—In 2015, the Bureau of Labor Statistics recorded that the annual mean wage of LPNs in Florida was \$42,320.
- **Educational Programs**
 - Certificate/Diploma
 - Academy for Practical Nursing & Health Occupations
 - Bradford Union Area Career Technical Center
 - Brevard Community College
 - Brewster Technical Center
 - Broward County Sheridan Technical Center

- Broward – Mcfatter
Technical Center
- Broward County Atlantic
Technical Center
- Burnett International College
- Carleen Home Health School
- Casel Healthcare Training
Center
- Capscare Academy for
Healthcare Education
- Camelot Healthcare Training
Institute Inc.
- Cambridge Institute of Allied
Health
- Centura Institute
- Choice Technology Center
- Chipola College
- Concorde Career Institute
- Charlotte Technical Center
- College of Central Florida
- Coral Ridge Training School
- Dade Medical College
- Dade County Robert Morgan
Technical Center
- Dade Medical College
- Dade County Miami-Lakes
Technical Center
- Dade County Lindsey
Hopkins Technical
- Daytona State College
- Desoto County School
- Erwin Technical Center
- Florida Educational Institute,
Inc
- Florida National College
- Faith Medical Institute
- Florida Gateway College
- Florida Educational Institute
- First Coast Technical College
- Fortis College
- Florida State College of
Jacksonville
- Galen Health Institute of
Tampa Bay
- Green Cross School of
Nursing
- Gulf Coast Community
College-Gulf/Franklin Center
- Health Education Training
School, LLC
- Hope Health Careers, Inc
- Health Opportunity Technical
Center
- Indian River State College
- International Academy
Training Center
- Institute for Allied Medical
Professions
- International Institute for
Healthcare Professionals, Inc.
- Immokalee Technical Center
- Keiser Career College
- Lake Technical Center
- Lee County High Technical
Center
- Lincoln Technical Institute
- Locklin Technical Center
- Lively Technical Center
- Lorenzo Walker Institute of
Technology
- Miami Dade College
- Manatee Technical Institute
- Medvance Institute
- Mercy Hospital School of
Practical Nursing
- Millennia Healthcare
Institute, Inc.
- Medical Prep Institute of
Tampa Bay
- North Broward Technical
Center, Inc.
- North Florida Community
College

- Orlando Technical Education Centers
- Pinellas Technical Education Center
- Palm Beach Vocational Institute
- Palm Beach State College
- Pensacola State College
- Pasco-Hernando Community College
- Rose Training Institute
- Ridge Career Center
- Rasmussen College
- Suwannee-Hamilton Technical Center
- South Tech Academy
- South Florida Community College
- Sunshine Training Center
- Southwest Florida Technical Institute
- Sigma Institute of Health Careers
- Santa Fe College
- Saber School
- Seminole State College
- Sarasota County Technical Institute
- The Center for Allied Health and Nursing Education
- The Center for Allied Health & Nursing Education
- Taylor College
- Tampa Bay Technical High School
- Techni-Pro Institute, Inc
- Technical Education Center
- Traviss Career Center
- Tom P. Haney Technical Center
- Virginia College
- Vintex Training Institute
- West Lawrence Academy, Inc.
- Washington-Holmes Technical Center
- Withlacoochee Technical Institute
- Walton Career Development Center – LPN Program

- **Professional Associations**

- National Federation of Licensed Practical Nurses

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9-2061 Licensed Practical and Licensed Vocational Nurses. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes292061.htm#st>. Accessed January 30, 2017.

Licensed Practical Nurse & Registered Nurse by Examination. Board of Nursing Licensed Practical Nurse Registered Nurse by Examination. <http://floridasnursing.gov/licensing/licensed-practical-nurse-registered-nurse-by-examination/>. Accessed January 30, 2017.

Florida LPN Programs. Nursing Schools Directory. <http://nurseslink.org/lpn-programs/florida/>. Accessed January 31, 2017.

Nurse Practitioner

- **Description**—A nurse practitioner, also known as an advanced practice registered nurse (APRN), is a registered nurse who has the advanced education and clinical training at the master's level in a health care specialty area.

Nurse practitioners often serve as primary health care providers for people during health and illness. They obtain health histories, perform physical examinations, monitor patients with chronic diseases, order and interpret lab tests and x-rays as needed, and provide health maintenance, health education, and prevention for children and adults. Nurse practitioners also provide prenatal care and family planning. They recommend medications and areas of treatment, and in many states, are allowed to prescribe medication.

Nurse practitioners collaborate with physicians and other health professionals to achieve complete health care for the patient. While they refer patients to physicians when indicated, nurse practitioners also may practice independently through a written protocol or document established with their collaborative physician.

- **Areas of Specialization**—Through advanced education and clinical experience, nurses may specialize in a number of areas including: adult health, family health, geriatric/elder health, pediatrics/child health, psychiatric/mental health, school/college health, women and newborn infants' health, nurse midwifery, and anesthesiology.
- **Work Environment**—Nurse practitioners work in rural and urban settings such as public health departments, community health centers, hospitals, physicians' offices, nursing homes, HMOs, student health clinics, and home health agencies. Where state law permits, nurse practitioners may establish their own offices for independent practice. Work hours for these professionals often exceed the usual eight-hour day as they are the primary provider of patient care and may be required to be on call to manage patient problems.
- **Job Outlook**—The number of nurse practitioners employed in Florida in 2016 was 8,758. It is projected that in 2024 there will be 11,755, an annual average growth rate of 4.3 percent.
- **Length of Trainings/ Requirements**—Nurse practitioner programs usually require two years of advanced study (part-time) beyond the basic degree. Registered nurses who plan to become nurse practitioners are advised to have 3-5 years' clinical experience before continuing their education.
- **Licensure/Certification**—The National Council of State Boards of Nursing is responsible for standardizing APRN requirements. There are many certification exams for nurse practitioners due to the large number of populations NPs may work with and the number of specialty areas in which they may practice. Certifications are available from various professional organizations, including the American Nurses Credentialing Center.

In order to be licensed in the state of Florida, nurse practitioners must be nationally certified as an Advanced Registered Nurse Practitioner through a recognized national nursing specialty certification board. The Florida Board of Nursing can then grant the applicant licensure with proof of a valid Registered Nurse License in the State of Florida, master's degree or post-master's degree certification, proof of national advanced practice certification from an approved nursing specialty board, and proof of malpractice insurance or exemption.

- **Salary**—According to the Bureau of Labor Statistics, the annual mean wage for nurse practitioners in Florida in 2015 was \$95,780.
- **Educational Programs**
 - The following information was found at: <https://npprogramsearch.aanp.org/Search>
 - Master's Degree
 - Family Health
 - Barry University
 - Florida Atlantic University
 - Florida Gulf Coast University
 - Florida International University
 - Jacksonville University
 - Keiser University
 - Nova Southeastern University
 - University of Central Florida
 - University of Florida
 - University of Miami
 - University of North Florida
 - University of South Florida
 - University of Tampa
 - Adult Gerontology Primary Care
 - Florida A&M University
 - Florida Atlantic University
 - Florida International University
 - Florida Southern College
 - University of Central Florida
 - University of Florida
 - University of Miami
 - University of South Florida
 - University of Tampa
 - Adult Gerontology Acute Care
 - Barry University
 - Nova Southeastern University
 - University of Florida

- University of Miami
 - University of South Florida
- Pediatric Primary Care
 - Florida International University
 - University of Florida
 - University of South Florida
- Pediatric Acute Care
 - University of Florida
- Psychiatric-Mental Health
 - Florida International University
 - Jacksonville University
 - University of Florida
- Neonatal
 - University of Florida
- Post-Baccalaureate Doctorate of Nursing
 - Family Health
 - Barry University
 - Florida Atlantic University
 - Florida Gulf Coast University
 - Florida International University
 - Florida State University
 - Jacksonville University
 - Keiser University
 - Nova Southeastern University
 - Palm Beach Atlantic University
 - University of Central Florida
 - University of Florida
 - University of Miami
 - University of North Florida
 - University of South Florida
 - University of Tampa
 - Adult Gerontology Primary Care
 - Florida A&M University
 - Florida Atlantic University
 - Florida International University
 - Florida Southern College
 - University of Central Florida
 - University of Florida
 - University of Miami
 - University of South Florida

- University of Tampa
- Adult Gerontology Acute Care
 - Barry University
 - Nova Southeastern University
 - University of Florida
 - University of Miami
 - University of South Florida
- Pediatric Primary Care
 - Florida International University
 - University of Florida
 - University of South Florida
- Pediatric Acute Care
 - University of Florida
- Psychiatric-Mental Health
 - Florida International University
 - Jacksonville University
 - University of Florida
 - University of Miami
- Neonatal
 - University of Florida
- Adult Acute Care
 - University of Miami
- Post-Master's Doctorate of Nursing
 - Family Health
 - Florida Atlantic University
 - Florida Gulf Coast University
 - Florida International University
 - Jacksonville University
 - Nova Southeastern University
 - University of Central Florida
 - University of Florida
 - University of Miami
 - University of North Florida
 - Adult Gerontology Primary Care
 - Florida A&M University
 - Florida International University
 - Florida Southern College
 - University of Central Florida
 - University of Florida
 - University of Miami

- Adult Gerontology Acute Care
 - Nova Southeastern University
 - University of Florida
 - University of Miami
 - Pediatric Primary Care
 - Florida International University
 - University of Florida
 - Pediatric Acute Care
 - University of Florida
 - Psychiatric-Mental Health
 - Florida International University
 - University of Florida
 - University of Miami
 - Neonatal
 - University of Florida
- **Professional Associations**
 - American Academy of Nurse Practitioners
 - American Nurses Association
 - National League for Nursing

Resources

29-1171 Nurse Practitioners. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291171.htm#st>. Accessed January 31, 2017.

Advanced Registered Nurse Practitioner. Florida Board of Nursing Advanced Registered Nurse Practitioner. <http://floridasnursing.gov/licensing/advanced-registered-nurse-practitioner/>. Accessed February 1, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed January 31, 2017.

Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners. Occupational Outlook Handbook. <https://www.bls.gov/ooh/healthcare/nurse-anesthetists-nurse-midwives-and-nurse-practitioners.htm>. Accessed January 31, 2017.

Nursing Assistant/ Patient Care Assistant

- **Description**—Nursing assistants (NAs or CNAs) are trained to perform basic patient care under the supervision of registered nurses or licensed practical nurses. Their work responsibilities include measuring vital signs and assisting with daily living activities, such as feeding, bathing, moving, or grooming patients, changing linens, and storing or sterilizing equipment.
Patient care assistants (PCAs) receive additional training that expands the traditional role of the nursing assistant. This training includes an increase in supervised clinical hours, a component related to home health and a component related to hospital patients. The patient care technician (PCT) expands the nursing patient role further with additional training in several areas, including EKG, phlebotomy, and an introduction to physical therapy. Graduates of these programs are prepared to care for patients in nursing homes and hospitals or in client homes.
- **Work Environment**—Generally, nursing assistants and patient care assistants work in well-lighted, clean surroundings. Many work in hospitals, nursing homes, home health agencies, and doctors' offices. Their health status must be very good as they will be on their feet most of the time. They are required to lift and move patients. The work week is usually 40 hours and includes weekends, nights, and holidays.
- **Job Outlook**—Approximately 1,993 job openings are expected each year in Florida until 2024.
- **Length of Trainings/ Requirements**—A high school diploma/GED is not required although applicants must be at least 16 years of age. In some programs, students can receive training while enrolled in high school. On graduation, the high school student is prepared to enter the workforce as a nursing assistant or patient care assistant. Individual and supervised clinical experiences related to basic patient care, interpersonal/communication skills, safety measures, infection control, medical terminology, nutrition, basic anatomy, vital signs, CPR, and employability skills. A minimum of supervised 40 clinical hours in a nursing home is required. Additional clinical hours may include rotations to hospitals and home health agencies. The nursing assistant component, a state approved, non-matriculated course that promotes quick entry into the workforce, is approximately 120 training hours. The patient care assistant program is approximately 290 training hours plus clinical experience in hospitals, nursing homes, home health agencies, and private homes.
- **Advancement**—Advancement requires additional education to expand the level of knowledge and skills. Nursing assistants and patient care assistants may be given advanced standing in licensed practical nursing programs.
- **Licensure/Certification**—Successful completion of an approved program in either nurse assisting or patient care assisting prepares the student to take the National Nurse's Aide Assessment Program. Successful completion of both a written evaluation and a skills

performance evaluation is required for certification placement on the Florida Nursing Assistant Registry. Certification is required to work in a licensed nursing home in the state of Florida. This certification must be obtained within 120 days of employment. Some hospitals and other health care facilities may also require certification. Once nursing assistants or patient care assistants become certified, they are eligible to perform home health aide duties. Certification is maintained by completing the required number of continuing education classes and by working in a nursing-related occupation without a lapse of 24 months.

- **Salary**—According to the Bureau of Labor Statistics, the annual mean wage for nursing assistants in Florida in 2015 was \$24,510 and the hourly mean wage was \$11.78.

- **Educational Programs**

- Certificate

- | | |
|---|--|
| ■ Academy for Nursing and Health Occupations | ■ Florida Gateway College |
| ■ Advance Science Institute | ■ Florida Keys Community College |
| ■ Atlantic Technical Center | ■ Florida National University |
| ■ Brewster Technical Center | ■ Florida State College at Jacksonville |
| ■ Cambridge Institute of Allied Health & Technology | ■ Florida Vocational Institute |
| ■ Cape Coral Institute of Technology | ■ Fort Myers Institute of Technology |
| ■ Charlotte Technical Center | ■ Future-Tech Institute |
| ■ Chipola College | ■ Immokalee Technical Center |
| ■ CHOICE High School and Technical Center | ■ Indian River State College |
| ■ College of Central Florida | ■ International Training Careers |
| ■ Compu-Med Vocational Careers Corp | ■ Lake Technical Center |
| ■ Concorde Career Institute | ■ Lindsey Hopkins Technical Education Center |
| ■ D A Dorsey Educational Center | ■ Lively Technical Center |
| ■ D G Erwin Technical Center | ■ Lorenzo Walker Institute of Technology |
| ■ Daytona College | ■ Manatee Technical Institute |
| ■ Daytona State College | ■ Marchman Technical Education Center |
| ■ Eastern Florida State College | ■ Marion County Community Technical/Adult Education Center |
| ■ Everest Institute | ■ M-DCPS The English Center |
| ■ First Coast Technical College | |
| ■ Flagler Technical Institute | |
| ■ Florida Career College | |
| ■ Florida Education Institute | |

- Miami Lakes Educational Center
- North Florida Community College
- Orlando Tech
- Palm Beach State College
- Pasco-Hernando Community College
- Pensacola State College
- Pinellas Technical Education Center
- Progressive Training Centers
- Ridge Career Center
- Robert Morgan Educational Center
- Saint Johns River State College
- Santa Fe College
- Sarasota County Technical Institute
- Seminole State College of Florida
- Sheridan Technical Center
- South Florida Institute of Technology
- South Florida State College
- Suwannee-Hamilton Technical Center
- Tallahassee Community College
- Technical Education Center
- Traviss Career Center
- Ultimate Medical Academy
- Washington-Holmes Technical Center
- William T McFatter Technical Center
- Withlacoochee Technical Institute

- **Professional Associations**

- American Nurses Association
- National League for Nursing

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31-1014 Nursing Assistants. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes311014.htm#st>. Accessed February 1, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org.

<http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 1, 2017.

Nursing Assistants and Orderlies. Occupational Outlook Handbook.

<https://www.bls.gov/ooh/healthcare/nursing-assistants.htm#tab-7>. Accessed February 1, 2017.

Registered Nurse

- **Description**—Today's registered nurses (RNs) are well-educated, licensed health professionals who help individuals and groups achieve health and prevent disease. They use a high degree of knowledge, skill, and judgement to provide care for sick and injured people. Their concern for the whole person involves registered nurses with the mental and emotional functioning of the patient as well as the physical. Nurses observe patients to assess symptoms, reactions to treatment, and progress. They administer medications, perform therapeutic procedures, and instruct patients and their families in health promotion, disease prevention, and maintenance of health. RNs supervise licensed practical nurses, nursing assistants, patient care assistants, and home health aides. They work in collaboration with physicians and other members of the health care team to develop and implement a plan of care to help the patient achieve optimal health.
- **Areas of Specialization**—Registered nurses are qualified for specialty practice at two levels- basic and advanced. These levels are differentiated by educational preparation. Diploma, associate degree, and baccalaureate degree nurses practice are at the basic level. Advanced practice requires additional education at the master's level. Some nurses prefer to work with patients in a particular age group such as children or older adults; other nurses may choose to specialize with patients who have a similar condition such as neurological disease, heart problems, pregnancy, diabetes, emotional problems, and many others. Advanced practice registered nurses care at a different level. For example, the nurse anesthetist specializes in giving anesthesia to patients undergoing surgery, the nurse midwife delivers babies, and the pediatric nurse practitioner assess and treats children with a variety of health problems.
- **Work Environment**—The majority of RNs work in hospitals as staff nurses assigned to the operating room, emergency room, maternity unit, intensive care unit, pediatric unit, or general care floors. Many RNs in hospitals work shifts that are 12 hours in length with corresponding increase in the number of days off per week. Office nurses work in physicians' offices or health maintenance organizations screening patients, assisting the physician with examinations, providing patient teaching, and other nursing care duties. Nurses may also work in public health departments, community clinics, schools, retirement centers, home health agencies, or they may be hired to deliver nursing services in industrial settings. Nurses generally work in well-lighted, comfortable buildings. They usually work a 40-hour week, but because patients in hospitals and nursing homes need round-the-clock care, nurses may be called upon to work weekends, nights, and holidays, usually on a voluntary basis. Nurses need physical stamina because they spend most of their time walking and standing. Intellectual ability and emotional stability are important as they must cope with complex problems, emergencies, human suffering, and other

stresses. Nurses must observe strict guidelines as they work with infectious diseases, chemicals, medications, electrical equipment, and compressed gases.

- **Job Outlook**—The number of registered nurses employed in Florida in 2016 was 178,186. It is projected that by 2024 there will be 207,016, an annual average growth rate of 2 percent.
- **Length of Trainings/ Requirements**—Prospective nurses may choose two educational pathways: an associate degree (ADN) or a baccalaureate (BSN). both require a high school diploma or equivalent. ADN programs are offered by community colleges and take two to three years to complete. BSN programs are offered by colleges and universities and require four years. Some schools offer accelerated associate or baccalaureate degrees for students already holding a health-related degree, such as licensed practical nurses, paramedics, emergency medical technicians, or registered nurses with associate degrees (seeking bachelor’s degrees). All nursing education programs include classroom instruction and supervised training activities with hospitalized patients and patients in various other setting. Students take courses in anatomy, physiology, microbiology, psychology, and nutrition, as well as nursing.
- **Advancement**—Baccalaureate education is generally necessary to advance to supervisory or administrative positions in hospitals and for positions in public health. Most research, consulting, teaching, and clinical specializations require graduate degrees. The bachelor of science in nursing (BSN) degree is a prerequisite for admission to graduate nursing programs.
- **Licensure/Certification**—All states, including Florida, require licensure for practice. Graduates of approved registered nursing programs must pass the National Council of State Board of Nursing (NCLEX-RN) comprehensive examination to be licensed. Only those graduates who have successfully passed the licensing exam may use the term “Registered Nurse”. The American Nurses Credentialing Center of the American Nurses Association certifies registered nurses based on predetermined standards, including passing a written subject examination and practice time in in a specified area. This voluntary board certification provides tangible recognition of professional achievement in a defined functional or clinical area of nursing. ANCC-certified specialty nurses are identified by RN-BC (Registered Nurse, Board Certified). Continuing education hours are required every two years for licensure and certification renewal.
- **Salary**—In 2015, the annual mean wage of nurses employed in Florida was \$63,960 and the hourly mean wage was \$30.75.
- **Educational Programs**
 - ADN
 - Broward College
 - Chipola College
 - College of Central Florida
 - Daytona State College
 - Everest University
 - Florida Gateway College
 - Florida Southwestern State College

- Florida state College at Jacksonville
- Galen College of Nursing
- Gulf Coast State College
- Herzing University
- Hillsborough Community College
- Indian River State College
- Keiser University
- Lake-Sumter State College
- Mercy Hospital College of Nursing
- Miami dade College
- Northwest Florida State College
- Palm Beach State College
- Bachelors
 - Barry University
 - Chamberlain College of Nursing
 - ECPI University
 - Florida Atlantic University
 - Florida Gulf Coast University
 - Florida International University
 - Florida National University
 - Florida Southern College
 - Florida State University
 - Herzing University
 - Jacksonville University
 - Nova Southeastern University
 - Pasco-Hernando Community College
 - Pensacola State College
 - Polk State College
 - Rasmussen College
 - Santa Fe College
 - Seminole State College of Florida
 - South Florida State College
 - St. Johns River State College
 - St. Petersburg College
 - State College of Florida
 - Tallahassee Community College
 - Valencia College
 - Palm Beach Atlantic University
 - Pensacola Christian College
 - South University
 - Universidad Del Turabo
 - University of Central Florida
 - University of Florida
 - University of Miami
 - University of North Florida
 - University of South Florida
 - University of West Florida
 - Utica College
 - West Coast University
 - Western Governors University

- **Professional Associations**

- American Nurses Association
- National League for Nursing

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29-1141 Registered Nurses. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291141.htm#st>. Accessed February 1, 2017.

Certification Credentials. American Nurses Credentialing Center.

<http://www.nursecredentialing.org/Certification/CertificationPolicies/CredentialsList>. Accessed February 1, 2017.

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Registered Nurses. Occupational Outlook Handbook. <https://www.bls.gov/ooh/healthcare/registered-nurses.htm>. Accessed February 1, 2017.

Pharmacy

- Pharmacology is defined as the basic and clinical science concerned with the interaction of chemicals with living systems. The field of pharmacology is an outgrowth of the field of chemistry. Early medicinal chemists who learned to isolate chemical compounds from plants and use these ingredients to produce medicines helped develop antibiotics, vaccines, anesthetics, and other lifesaving drugs.
- Pharmacologists are highly trained researchers who develop and test new drugs and determine the effects of chemicals, pollutants, poisons, and other materials on animals and humans. Pharmacists prepare and dispense patient medications based on written orders by physicians, dentists, and other health care professionals. Pharmacists also inform patients about the proper use of medications, possible side effects or adverse reactions, and interactions between different drugs. They assist patients in choosing nonprescription medications such as vitamins, headache or pain remedies, and cough syrups. The pharmacist must be knowledgeable about the latest medications for treating diseases. Pharmacy technicians assist pharmacists in preparing and dispensing the medications. Pharmacy personnel may work in community pharmacies, hospitals, nursing homes, government agencies, or the pharmaceutical industry. Training requirements vary from on-the-job training after high school to several years of postgraduate training.

Pharmacist

- **Description**—Pharmacists dispense medications prescribed by physicians, dentists, and other authorized medical practitioners. They have special knowledge about the use, composition, therapeutic and adverse effects of medications, as well as the laws that regulate the making and selling of drugs. To help ensure the optimal medication regimen with minimal complications or side-effects, pharmacists also review medications for interactions with other drugs, food and diseases.

Most pharmacists work in community pharmacies, where they sell medical and sickroom supplies, meet with pharmaceutical sales representatives, consult with and counsel their customers on the use of prescribed and over-the-counter medications, keep abreast of new developments in the health care field, and combine professional and business skills to manage the pharmacy. Others are employed by pharmaceutical manufacturers for sales, marketing, research, and product development.

Yet others work in hospitals, clinics, home health care agencies, and nursing homes.

Dispensing medications, making sterile solutions or special intravenous mixtures, advising the medical and nursing staffs about new drugs, monitoring patients' drug therapies, and maintaining a drug information library. Pharmacists in government agencies may inspect drug manufacturing laboratories or community pharmacies to help enforce the legal use of medications and maintain the purity of cosmetics, drugs, and foods. Worldwide, pharmacists provide critical medical knowledge, along with complete and constant attention to accuracy and detail in providing safe and effective medication therapy.

- **Areas of Specialization**—In addition to community and hospital pharmacy practices, pharmacists may specialize in nuclear pharmacy (controlling the use of radioactive drugs used for patient diagnosis and therapy), consult pharmacy (providing the information of pharmacy systems and services to institutions--primarily nursing homes), and as clinical pharmacy specialists (providing consultation to physicians on the therapeutic use of medications in specialized areas of practice such as psychiatry, ambulatory care, cardiology, pediatrics, critical care, neurology, etc.). Additional areas of pharmacy practice include the military, Centers for Disease Control, Food and Drug Administration, Public Health Service, Health Maintenance Organizations, and academia. Pharmaceutical research is a career avenue for pharmacists with advanced degrees in pharmaceutical sciences. Pharmacists who obtain a master's in business administration degree may pursue career opportunities in management within institutional pharmacy practice, governmental agencies, and the pharmaceutical industry. They can also pursue combined Doctor of Pharmacy degrees with Master of Public Health or Doctor of Philosophy degrees.
- **Work Environment**—Pharmacists work in community pharmacies (independently owned or chain pharmacies), pharmaceutical industry, hospitals, clinics, nursing homes,

home health care operations, managed care agencies, government agencies, pharmaceutical organizations, universities, and research centers. Most pharmacists work about 43 hours per week. However, they may work longer hours when emergencies arise.

- **Job Outlook**—The number of pharmacists employed in Florida in 2016 was 21,396. It is projected that in 2024 there will be 23,084, an annual average growth rate of 1 percent.
- **Length of Trainings/ Requirements**—The Doctor of Pharmacy degree required at least six years of study beyond high school. The curriculum usually consists of anatomy, physiology, microbiology, biochemistry, pharmacology, pathophysiology, pharmacy calculations, pharmaceuticals, medicinal chemistry, professional communications, pharmacy management, pharmacy law, evidence-based pharmacy, clinical pharmacokinetics, pharmacotherapy, and clinical clerkships. Some pharmacy programs admit students directly from high school; however, such students may be required to complete pre-pharmacy coursework in mathematics, general chemistry, organic chemistry, biology, physics, English, humanities, and the social sciences. Most schools also require the Pharmacy College Admissions Test (PCAT). Pharmacy graduates may enter one- or two- year residency programs or fellowships. There is a trend toward greater clinical specialization, which required residency and fellowship training.
- **Advancement**—Experience and further education enable pharmacists to build small businesses, manage chain-owned pharmacies, direct pharmacy services in hospitals, clinics, or government agencies, or conduct research.
- **Licensure/Certification**—Pharmacists practicing in Florida must have a state license. Graduates of accredited colleges of pharmacy are eligible to take the state licensure exam. An internship is incorporated into the Doctor of Pharmacy Curriculum. Continuing education requirements are required every two years for license renewal. Licensure as a consultant pharmacist is also available for nuclear, nutritional support, oncology, and pharmacotherapy areas.
- **Salary**—The annual mean wage of Pharmacists employed in Florida in 2015 was \$116,110.
- **Educational Programs**
 - Doctor of Pharmacy
 - Florida Agricultural and Mechanical University
 - Nova Southeastern University
 - Palm Beach University
 - University of Florida
 - University of South Florida
- **Professional Associations**
 - American College of Clinical Pharmacy
 - American Pharmacists Association
 - American Society of Health-System Pharmacists
 - Florida Pharmacy Association

○ Florida Society of Health-System Pharmacists

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29-1051 Pharmacists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291051.htm#st>. Accessed February 15, 2017.

Pharmacologist

- **Description**—Pharmacologists are specialists who develop and test drugs for medicinal use. Their scientific method involves analyzing chemicals and other substances to identify positive and/or harmful effects on humans and the environment to the end of understanding and developing new therapies for disease. Diligence, perseverance, and creative instinct are important characteristics for pharmacological research and development.
- **Areas of Specialization**—Most pharmacologists specialize in one of several areas of pharmacology. Clinical pharmacologists test drugs on human subjects; toxicologists deal with the adverse effects of drugs and toxic actions of household, environmental or industrial chemicals; forensic toxicologists study the potential for harmful effects of drugs in man; medicinal chemists design and synthesize chemical compounds for potential use in the treatment of disease; and pharmacologists specialize in determining the site and mechanism by which drugs act to better optimize the therapeutic effects of drugs in the body. Some pharmacologists specialize in particular parts of the human body. For example, neuropharmacologists focus on drugs relating to the brain and nervous system; cardiovascular pharmacologists study the effects of drugs relating to the heart and circulatory systems; endocrine pharmacologists emphasize the drugs relating to hormonal balance; and psychopharmacologists study drugs that influence mood and behavior patterns. Pharmacodynamics is the study of the molecular, biochemical, and physiological effects of drugs on cellular systems and their mechanisms of action. Pharmacokinetics deals with the absorption, distribution, and excretion of drugs.
- **Work Environment**—Pharmacologists work in schools of medicine, pharmacy, nursing, dentistry, veterinary medicine, hospitals, the pharmaceutical industry, government agencies (Food and Drug Administration), and public and private research institutes. Pharmacologists usually work in clean laboratories equipped with sophisticated instruments.
- **Job Outlook**—There were 1,817 medical scientists employed in Florida in 2016. It is projected that by 2024 there will be 2,104, an annual average growth rate of 2 percent.
- **Length of Trainings/ Requirements**—Most pharmacologists have Pharm. D or Ph.D. degrees. Because pharmacology and the practice of medicine are closely related, some pharmacologists become medical doctors and vice versa. Pharmacologists are highly trained individuals who must have knowledge of chemistry, biology, physiology, and mathematics. Fellowships in pharmacology are available for specialized training which usually consists of two years of study. There are nine such programs available in the U.S. Pharmacologists are represented by various professional organizations such as the American College of Clinical Pharmacology.
- **Licensure/Certification**—No license is required.

- **Salary**—The annual mean wage for medical scientists (except epidemiologists) employed in Florida in 2016 was \$79,530.
- **Educational Programs**
 - Doctor of Pharmacy
 - Florida Agricultural and Mechanical University
 - Nova Southeastern University
 - Palm Beach University
 - University of Florida
 - University of South Florida
- **Professional Associations**
 - American College of Clinical Pharmacology
 - American Pharmacists Association
 - American Society for Pharmacology and Experimental Therapeutics

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19-1042 Medical Scientists, Except Epidemiologists. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes191042.htm#st>. Accessed February 15, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 15, 2017.

Pharmacy Technician

- **Description**—Pharmacy technicians perform routine tasks under the supervision of licensed pharmacists to perform technical and clerical duties in the systematic operation of the pharmacy.
Their duties may include, but are not limited to: compounding (measure/weigh/mix) medicinal drugs; preparing and labeling medicines; filling bottles and vials of with the correct quantity of medicine; issuing medicines to the customers; maintaining inventory; keeping patients' medication profiles on specified records, forms, or computerized systems; collecting, organizing, and evaluation information for direct patient care, medication review, and department management. Pharmacy technicians must be aware of the necessity for aseptic technique, cleanliness, orderliness, and accuracy in the work areas. They also should be alert, observant, attentive to details, and able to follow written and oral instructions.
- **Areas of Specialization**—These areas include, but are not limited to: prescription processing and filling, intravenous compounding, including TPN and Chemo, procurement and inventory management of medications and supplies, and drug utilization review.
- **Work Environment**—Pharmacy technicians are employed in hospitals, home health care agencies, mail order pharmacies, retail pharmacies, pharmacies that supply medications for assisted care living and nursing home facilities, hospice pharmacies, HMO pharmacies, and nuclear pharmacies.
- **Job Outlook**—The number of pharmacy technicians employed in Florida in 2016 was 27,251. It is projected that by 2024 there will be 31,098, an annual average growth rate of 1.8 percent.
- **Length of Trainings/ Requirements**—Although high school graduates can receive on-the-job training to become pharmacy technicians, state and national trends indicate a need for graduation from a formal training program. The length of these programs ranges from six months to two years and result in a certificate, diploma, or associate degree. The program includes courses in pharmaceutical mathematical procedures (weights, measurements, and conversions), organizational structures in pharmacies, safe, ethical, and legal pharmacy practice, drug classifications, pharmaceutical nomenclature, drug strengths/doses, warnings and side effects, pharmacy operation procedures, aseptic techniques, preparations of chemotherapeutic agents and total parenteral nutrition, computer literacy and keyboarding, and clinical practicums in both retail and hospital settings.. The curriculum consists of three occupational completion components. The first component prepares graduates as basic healthcare worker (industry title). The second component prepares graduates as community pharmacy technicians to work in community-based retail pharmacies. The third component prepares graduates as pharmacy technicians to work in retail pharmacies, hospitals, home health agencies, mail

order, and pharmaceutical companies. Students may elect to complete one of the three or all components, depending upon their career objectives.

- **Advancement**—Most pharmacies have three different classifications of pharmacy technicians, the non-certified tech has least responsibility/experience and is the lowest paid in most cases. The certified tech has more responsibility/higher pay. Finally, a senior tech is certified, has more experience, more expertise, more responsibility and the highest pay of these three classifications.
- **Licensure/Certification**—No state license is required at this time. However, the job-related activities of pharmacy technicians are regulated by the Florida Department of Health, Board of Pharmacy. The Pharmacy Technician Certification Board offers a national certifying examination. Successful completion of this voluntary exam leads to the title of Certified Pharmacy Technician (CPhT). The Florida Society of Health Systems Pharmacists and the Florida Pharmacy Association support mandatory certification of pharmacy technicians. Certified Pharmacy Technicians are required to participate in continuing education in order to maintain their certification.
- **Salary**—The average hourly wage for pharmacy technicians employed in Florida in 2015 was \$14.27.
- **Educational Programs**
 - Diploma
 - Florida Career College
 - Atlantic Technical College
 - Concorde Career Institute
 - Everest Institute
 - Florida Education Institute
 - New Professions Technical Institute
 - Pensacola State College
 - Sanford-Brown Institute
 - Certificate
 - Brewster Technical Center
 - Cape Coral Technical College
 - D A Dorsey Educational Center
 - Florida Gateway College
 - Florida State College at Jacksonville
 - Fortis College
 - Indian River State College
 - Lincoln Technical Institute
 - Lively Technical Center
 - Manatee Technical Institute
 - Medical Institute of Palm Beach

- Miami Dade College
- Pinellas Technical Education Center
- Radford M Locklin Technical Center
- Rasmussen College
- Seminole State College of Florida
- Tallahassee Community College
- Virginia College
- William T McFatter Technical Center
- Winter Park Tech
- Associate Degree
 - Concorde Career Institute
 - Rasmussen College
 - Associate of Science or Associate of Applied Science
 - Southeastern College
- **Professional Associations**
 - American Association of Pharmacy Technicians
 - American Pharmacists Association
 - American Society of Health-System Pharmacists
 - Florida Society of Health-Systems Pharmacists

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 16, 2017.

29-2052 Pharmacy Technicians. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes292052.htm#st>. Accessed February 16, 2017.

Public Health

- The role of public health is to promote and protect the health and safety of individuals and communities by promoting healthy lifestyles, preventing disease, identifying and minimizing environmental and other health care risks, regulating healthcare practitioners, and providing healthcare to those with limited access. Ensuring that communities are informed about health issues and available health services is a large part of this challenge.
- Nurses, doctors, and many other health professionals teach, practice, and help create policy in public health settings. Public health boasts career fields such as the following:
- Health educators provide accurate information on health issues and concerns to individuals and targeted groups, along with motivation to make informed decisions about personal behaviors. Emphasis on preventable behavioral health risks such as disease transmission, drug and alcohol use, tobacco use, exercise, and nutrition is growing. Health educators assess community needs, coordinate resources, identify ways to accomplish the health objectives, plan meetings and conferences, and train other health professionals and volunteers.
- Environmental specialists are involved in the overall environmental quality of a community. They are concerned with enforcement of local, state and federal laws, regulations, and standards related to sanitation of food, milk, sewage, and waste disposal, housing, and institutional environments. They inspect facilities at recreational areas, nursing homes, apartments, and other community and public locations.
- Statisticians collect, analyze, and present numerical data. Biostatisticians design studies and process data from surveys and experiments in the health field via extensive use of computers. They work closely with other health professionals as they plan and conduct research. Results of such research are often crucial to reducing illness and preventable deaths.

Biostatistician

- **Description**—Biostatisticians are statisticians who apply their skills in health-related fields. They typically collaborate with other researchers in the health disciplines, design studies, collect data, and analyze datasets in pursuit of answers to specific questions. Such studies may provide information on how a disease progresses, the safety and efficacy of a new treatment or medication, or the impact of risk factors associated with a medical condition. Studies are also undertaken to estimate health care costs and quality of health care provided to aid those responsible for making health policy and quality assurance decisions.

Biostatisticians provide expertise in the planning stages (e.g. experimental design, sample size considerations), on data collection, on choosing and implementing appropriate methodologies, and interpreting the results. Some situations require the biostatistician to develop new methods appropriate for the particular problem. The expertise of biostatisticians and epidemiologists overlap considerably, but their respective training reflects differing areas of interest.

- **Areas of Specialization**—Health-related research projects require biostatistical support. New fields of study requiring specialized biostatistical knowledge, such as statistical genetics and medical imaging, are growing at a rapid pace. Biostatisticians also can find jobs in related areas such as veterinary medicine, botany, and wildlife research.
- **Work Environment**—Biostatisticians work in hospitals, health care facilities, colleges and universities, industry, and in numerous sectors within the government. They also work with government surveys and market research (The Committee of Presidents of Statistical Societies Presents Career in Statistics). They often work as part of a team of scientists, which may include physicians and other health professionals, epidemiologists, health policy analysts, health econometricians, and computer programmers.
- **Job Outlook**—The number of statisticians employed in Florida in 2016 was 887. It is projected that in 2024 there will be 1,259, an annual average growth rate of 5.2 percent.
- **Length of Trainings/ Requirements**—A bachelor's degree with a major in biostatistics or mathematics is the minimum requirement for entry level positions. Most jobs require a master's or doctoral degree.

Statistics programs with concentration in biostatistics are available at both the undergraduate and graduate levels in Florida. Students planning to become statisticians should have a strong interest and background in mathematics, computers, and medical, biological, or health sciences.

- **Licensure/Certification**—No licensure or certification is required at the present time.
- **Salary**—The annual mean wage for statisticians employed in Florida in 2015 was \$63,420.
- **Educational Programs**
 - Bachelor's Degree
 - Barry University

- Bethune-Cookman University
- Broward College
- College of Central Florida
- Eckerd College
- Edward Waters College
- Florida Atlantic University
- Florida Gulf Coast University
- Florida Institute of Technology
- Florida International University
- Florida State University
- Indian River State College
- Jacksonville University
- New College of Florida
- Palm Beach Atlantic University
- Palm Beach State College
- Pensacola State College
- Rollins College
- State College of Florida
- Stetson University
- Southeastern University
- St. Thomas University
- University of Central Florida
- University of Miami
- University of North Florida
- University of South Florida
- University of Tampa
- University of West Florida

- Master's Degree

- Florida Atlantic University
- Florida International University
- Florida State University
- University of Central Florida
- University of Florida
- University of West Florida
- University of South Florida
- University of North Florida

- Doctor of Philosophy

- Florida Atlantic University
- Florida State University
- University of Central Florida
- University of Florida
- University of South Florida

- **Professional Associations**

- American Statistical Association International
- Biometric Society
- Society for Clinical Trials

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 20, 2017.

15-2041 Statisticians. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes152041.htm#st>. Accessed February 20, 2017.

Environmental Specialist

- **Description**—Environmental specialists protect and preserve the well-being of the environment and human health. The broad field of contemporary environmental problems faced by the state of Florida and the nation include drinking and surface water quality, solid and hazardous waste storage and disposal, indoor and outdoor air quality, radiological health, occupational health systems ecology (interrelationship of organisms and their environments), and housing hygiene.
Environmental specialists at the technician level collect and analyze hazardous samples, record information, prepare reports, maintain monitoring equipment, inspect facilities such as restaurants and swimming pools for cleanliness and safety, and provide supportive services to environmental engineers and scientific professionals.
Environmental specialists at the professional level act as consultants, investigators, and evaluators for environmental health and safety issues. They base decisions on concrete evidence gathered under strict standards.
- **Areas of Specialization**—Environmental specialists may specialize in air and industrial hygiene, radiological health, environmental chemistry and biology, environmental management, environmental marketing, environmental health, environmental landscaping, wastewater, surface and drinking water resources, food protection, or similar fields.
- **Work Environment**—Environmental specialists work in government environmental regulatory and public health agencies, industry, utilities, environmental engineering consulting firms, and universities.
- **Job Outlook**—There were 1,521 environmental science technicians employed in Florida in 2016. It is projected that there will be 1,670 by 2024, an annual average growth rate of 1.2 percent. There were 5,743 environmental scientists and specialists employed in Florida in 2016. It is projected that by 2024 there will be 6,372, an annual average growth rate of 1.4 percent.
- **Length of Trainings/ Requirements**—Environmental health programs are available at both the undergraduate and graduate levels in Florida. A bachelor's degree with substantial coursework in science and engineering is a prerequisite for admission to graduate programs. The curriculum for environmental specialists and environmental engineers includes core courses in hazardous materials regulations, recovery, incineration and disposal, sampling and analysis, statistics, environmental biology and chemistry, elements of atmospheric pollution, environmental resources management, and pollution control design. A bachelor's degree experience or equivalent experience is required for most environmental specialist positions.
- **Advancement**—With a graduate degree, an environmental specialist may be involved in research, management, or administration.

- **Licensure/Certification**—Students with a bachelor’s degree from an approved engineering program and four years of engineering experience are eligible to take the licensure examination. Upon passing the exam, a professional engineering license will be issued by the Board of Professional Engineers. Environmental specialists must have a bachelor’s degree from an accredited college or university with major course work in environmental science, a physical science, or a biological science and must pass an examination offered by the Department of Health’s Bureau of Facility Programs to be certified in on-site sewage treatment or food hygiene if they work for the Department of Health. The Florida and National Environmental Health Associations also offer a registration examination for all areas of environmental health. Continuing education hours are required every two years for re-licensure. The Academy of Board Certified Environmental Professionals (ABCEP) administers the Certified Environmental Professional (CEP) program which provides environmental professionals who possess special qualifications of education, experience, and accomplishment with the opportunity to be judged by a board of peers. Those individuals awarded the Certified Environmental Professional credential may use the designation “CEP” after their name.
- **Salary**—The annual mean wage for environmental scientists and specialists employed in Florida in 2015 was \$56,450.
- **Educational Programs**
 - Associate Degree
 - College of Central Florida
 - Florida State College at Jacksonville
 - South Florida State College
 - Tallahassee Community College
 - Bachelor’s Degree
 - Ave Maria University
 - Bethune-Cookman University
 - Flagler College
 - Florida Gulf Coast University
 - Florida Institute of Technology
 - Florida International University
 - Jacksonville University
 - Lynn University
 - New College of Florida
 - Nova Southeastern University
 - Rollins College
 - Stetson University
 - St. Thomas University
 - University of Florida
 - University of South Florida

- University of Tampa
 - University of West Florida
- Master's Degree
 - Florida Agricultural and Mechanical University
 - Florida Atlantic University
 - Florida Gulf Coast University
 - Florida Institute of Technology
 - Florida State University
 - University of Central Florida
 - University of Florida
 - University of South Florida
 - University of West Florida
- Doctor of Philosophy
 - Florida Agricultural and Mechanical University
 - Florida State University
 - University of Central Florida
 - University of Florida
- **Professional Associations**
 - Florida Engineering Society
 - Florida Environmental Health Association
 - Florida Public Health Association
 - National Environmental Health Association
 - National Society of Professional Engineers

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 20, 2017.

19-2041 Environmental Scientists and Specialists, Including Health. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes192041.htm#st>. Accessed February 20, 2017.

Health Educator

- **Description**—Health educators provide information that may prevent diseases and/or promote health to educate the public and targeted populations on optimizing individual and public health. They focus largely on improvement of individual lifestyles and health behaviors, which include nutrition, exercise, avoidance of tobacco use, stress, substance abuse, accidents, pollution, teenage pregnancy, and AIDS.
Health educators begin the educational process with a needs assessment of the individual or community, followed by planning, implementation, dissemination, and evaluation of specific educational programs. Health educators also coordinate health education services, develop educational materials and programs, and do research. The goals of health educators are to help prevent disease and promote health by increasing knowledge, modifying attitudes, and changing behavior. Health educators must like to help people and have patience, tact, organizational skills, along with a strong interest in society and the ability to communicate effectively with target audiences.
- **Areas of Specialization**—Health educators may specialize in the following categories: public or community health (organizing community coalitions to solve public health problems), school and college health (teaching school health education and often counseling students), patient health (working with other health care professionals in hospitals and rehabilitation facilities), and wellness and health promotion (planning and managing health promotion programs for employees in work settings, health fitness centers, and hospitals).
- **Work Environment**—Health educators work in schools and colleges, public health agencies, voluntary health agencies, social service agencies, long term care facilities, community organizations, government agencies, hospitals/clinics, wellness centers, and corporations.
- **Job Outlook**—The number of health educators employed in Florida in 2016 was 3,268. It is projected that by 2024 there will be 3,747, an annual average growth rate of 1.8 percent.
- **Length of Trainings/ Requirements**—Health educators must earn a bachelor's degree in health education. Public health educators and school health educators usually have a master's or doctoral degree. Training programs are available at both undergraduate and graduate levels in Florida. The undergraduate curriculum includes core courses in anatomy and physiology, human growth and development, medical terminology, personal and family health, mental and emotional health, physical fitness, epidemiology and research, community and environmental health, nutrition, substance use and abuse prevention, human sexuality, foundations of health education, health issues in different populations, methods and materials in health education, and a full-time internship. The graduate curriculum includes core courses in philosophies, theories, and principles of health education, epidemiology, advanced methods in health education, organization and

administration of health education programs, research methods, program planning and evaluation procedure in health education, and in internship. On average, it takes two years to complete a master's degree and five years to complete a doctoral degree.

- **Advancement**—Experienced health educators may advance to jobs as directors of supervisors of health education or health promotion departments and other health-related agencies. Those with an advanced degree such as an MHP can be involved in research; and doctoral degree health educators can also teach in universities and be involved in research.
- **Licensure/Certification**—Certification as a school health teacher follows the state teacher certification requirements. If a health education degree is not from a National Council for Accreditation of Teacher Education (NCATE) approved college program, alternative teaching certification programs are available? National certification is voluntary. Graduates of Health education programs are eligible to take a certifying exam offered by the National Commission for Health Education Credentialing, Inc. To be eligible for the certification examination, the candidate must hold a bachelor's master's, or doctoral degree from an accredited institution with a major in health education, or another related field. Undergraduate students who show proof of anticipated graduation within six months are also eligible to sit for the exam. Once the degree is completed and the exam passed, the CHES designation can be used. Certification renewal is required every year along a submission of the continuing education completed that year. Recertification occurs every five years, at which time all of the required continuing education hours are due. State certification is also voluntary. The Florida Association of Professional Health Educators is responsible for registration and certification of health educators at the state level.
- **Salary**—The salary depends on the location and type of health education provided. The hourly mean wage of health educators employed in Florida in 2015 was \$49,680. Health educators with master's or doctoral degrees may earn more depending on the experience and type of employment setting.
- **Educational Programs**
 - Bachelor's Degree
 - Florida Gulf Coast University
 - Florida International University
 - University of Florida
 - University of Miami
 - University of North Florida
 - University of South Florida
 - University of West Florida
 - Master's Degree
 - Florida A&M University
 - Florida International University

- Florida State University
- University of Florida
- University of North Florida
- University of South Florida
- University of West Florida
- Doctor of Philosophy
 - Florida A&M University
- **Professional Associations**
 - American Association for Health Education
 - American Public Health Association
 - American School Health Association

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 20, 2017.

21-1091 Health Educators. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes211091.htm#st>. Accessed February 21, 2017.

Radiology

- The use of radiant energy to diagnose and treat disease is known as radiology. The x-ray that penetrates substances to create an image on film, perhaps of a broken bone, is perhaps the most familiar medical use of radiation. Before the discovery of x-ray in 1895, the only way to see inside the body was through invasive techniques such as surgery. Today, radiation is used not only to produce images of the interior of the body to diagnose illness and injury, but it is also used in the treatment of diseases such as cancer.
- Computer technology has greatly enhanced the field of radiology. X-ray can clearly reveal such dense objects such as bones, but not soft tissue. Now that computerized scanners can work with millions of messages from a single test, it is possible to view soft tissue and organs like the brain or heart. With computer-assisted tomography (CT or CAT), images of particular layers of the body are made from different angles. This is tremendously important in improving the diagnosis of some diseases. Imaging techniques do not always involve radiation. Examples of imaging equipment that do not use x-ray include ultrasound which uses sound waves and the magnetic resonance scanner (MRI) which uses radio waves.
- Careers in radiological science include radiologists, who are physicians (MDs) who specialize in the use of radiation and non-radiation imaging equipment to diagnose and treat injuries and diseases. Others are radiologic technologists, radiologic assistants, nuclear medicine technologists, radiation therapy technologists, radiographers, radiation protection technicians, diagnostic medical sonographers, and dosimetrists.

Nuclear Medicine Technologist

- **Description**—Nuclear medicine technologists (NMTs) use specialized equipment to assist physicians in the diagnosis and treatment of diseases.
In diagnosis, NMTs prepare, measure, and give radiopharmaceuticals (radioactive drugs) to patients either by injection or mouth. Then, by using a radiation-sensitive scintillation cameras, images of the internal organs and the radioactive tracer biorouting through the body can be viewed on a monitor screen. NMTs also perform laboratory analysis of blood or urine samples with radioactive materials to determine previously undetectable drug and hormone levels.
In therapy, NMTs assist in calculating the correct dosage of radiopharmaceuticals and administering it to the patient in order to treat certain diseases, such as hyperthyroidism or thyroid cancer. Other responsibilities of NMTs include assisting in performing necessary first aid during procedures, disposing of radioactive wastes, keeping inventory and control of radiopharmaceuticals, and following safety regulations to limit radiation exposure according to the standards set by the U.S. Nuclear Regulatory Commission. Nuclear medicine technologists must have physical stamina, as they are on their feet most of the day.
- **Work Environment**—Nuclear medicine technologists work in hospitals, diagnostic centers, research facilities, and educational institutions. The potential for radiation exposure is minimized by the use of protective devices and by adherence to strict radiation safety guidelines.
- **Job Outlook**—The number of nuclear medicine technologists employed in Florida in 2016 was 1,747. It is projects that by 2024 there will be 1,875, an annual average growth rate of .9 percent.
- **Length of Trainings/ Requirements**—Nuclear medicine technology programs range from one year to four years in length and lead to a certificate, associate degree, or a bachelor's degree. The curriculum includes nuclear physics, instrumentation and statistics, health physics, radiopharmacology, radiation biology, radionuclide therapy, introduction to computer application, and practicum.
- **Advancement**—With additional education and experience, nuclear medicine technologists can advance to chief technologist in nuclear medicine departments or labs. Other advancement includes becoming administrators, educators, and researchers.
- **Licensure/Certification**—Nuclear medicine technologists must be licensed to work in the state of Florida, which reciprocates with national certification. Applicants must graduate from an approved program and pass either the certification/registration examinations offered by the American Registry of Radiologic Technologists or the Nuclear Medicine Technology Certification Board.

- **Salary**—The 2015 annual mean wage for nuclear medicine technologists employed in Florida was \$72,980.
- **Educational Programs**
 - Certificate
 - Gulf Coast State College
 - Indian River State College
 - University of Miami
 - St. Vincent’s Medical Center
 - Associate Degree
 - Broward Community College
 - Hillsborough Community College
 - Indian River State College
 - Keiser University
 - Miami Dade College
 - Santa Fe College
 - Bachelor’s Degree
 - Adventist University of Health Sciences
 - Barry University
- **Professional Associations**
 - American Society of Radiologic Technologists
 - Society of Nuclear Medicine- Technologist Section

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 21, 2017.

29-2033 Nuclear Medicine Technologists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes292033.htm#st>. Accessed February 21, 2017.

Radiation Therapy Technologist

- **Description**—The Radiation therapy technologist (RTT or Radiation Therapist) treats diseases by exposing specified sites on patients' bodies to ionizing radiation. Daily interaction with very ill individuals provides special challenges in caregiving. RTTs work under the supervision of radiation oncologists (physicians who use radiation to treat cancer) in the management, control, and care of patients receiving radiation therapy. Primary responsibilities of RTTs are:
 - Administering radiation therapy by exposing specific areas of the patients' body to prescribed doses of radiation, and repositioning the patient as needed during the procedure.
 - Monitoring and reporting patients' side effects or adverse reactions such as vomiting and hair loss to physicians
 - Performing quality controls on the equipment
 - Assisting in the treatment planning procedures, including tumor localization on dosimetry (calculation of the radiation dosage that patients are prescribed)
 - Preparing and handling radioactive materials used in the treatment
 - RTTs must maintain radiation safety for patients, clinical personnel, and themselves while carrying out duties
- **Work Environment**—RTTs work in hospitals, cancer treatment centers, and private offices. Radiation hazards exist, but are minimized by adhering to strict procedures and using protective equipment.
- **Job Outlook**—The number of radiation therapists employed in Florida in 2016 was 1,362. It is projected that by 2024 there will be 1,660, an annual average growth rate of 2.7 percent.
- **Length of Trainings/ Requirements**—Two-year degree programs are available for high school graduates. Graduates of accredited programs may pursue approved one-year programs to certify as radiologic technologists and nuclear medicine technologists. Hour-year bachelor's degree programs are also available. The curriculum includes courses in oncologic imaging, clinical dosimetry, practicum.
- **Advancement**—With additional education and experience, radiation therapy technologists can specialize in medical dosimetry.
- **Licensure/Certification**—Radiation therapy technologists must be licensed in the state of Florida. Applicants must graduate from a program approved by the Joint Review Committee on Education in Radiologic Technology and successfully pass the radiation therapy technology examination. Voluntary certification is available through the American Registry of Radiologic Technologists (ARRT). The ARRT registry/certification is valid throughout the United States, but the Radiation Therapy Technologist license is only valid in the state of Florida. Continuing education hours are required every two years for license renewal.

- **Salary**—The annual mean wage for radiation therapists employed in Florida in 2015 was \$92,660.
- **Educational Programs**
 - Certificate
 - Broward College
 - State College of Florida
 - St. Vincent’s Medical Center
 - Associate Degree
 - Broward College
 - Cambridge Institute of Health & Technology
 - College of Central Florida
 - Daytona State College
 - Eastern Florida State College
 - Florida Southwestern State College
 - Florida State college at Jacksonville
 - Gulf Coast State College
 - Keiser University
 - Marion County Community Technical and Adult Education Center
 - Miami Dade College
 - Northwest Florida State College
 - Pasco-Hernando State College
 - Polk State College
 - Saint Johns River State College
 - Santa Fe College
 - St Petersburg College
 - State College of Florida
 - Tallahassee Community College
 - Valencia College
- **Professional Associations**
 - American Society of Radiologic Technologists

Resources

29-1124 Radiation Therapists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291124.htm#st>. Accessed February 22, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 22, 2017.

Radiographer

- **Description**—General radiographers are one type of radiologic technologist (RT) who specializes in the use of x-ray equipment to create images of the internal structures of the body for medical diagnostic purposes only. Radiologic technologist is a term that describes not only radiographers, but also radiation therapists, nuclear medicine technologists, sonographers, and MRI technologists. The field involves operation of advanced computer-aided imaging equipment such as ultrasound, computed tomography (CT scanning), and magnetic resonance imaging (MRI). preparing patients for various diagnostic procedures may include:
 - Administering radio-opaque mixtures to patients so that internal organs may be observed and identified
 - Positioning patients between x-ray source and image receptor
 - Providing patient comfort and protection
 - Tasks involve determination of the proper technical factors for producing radiographs, processing film, maintaining equipment in proper working order, and keeping patient records. All radiological work is done at the request of and under the supervision of a physician; and care to avoid exposure to harmful radiation is a constant necessity.
- **Areas of Specialization**—Large institutions may necessitate specialization in a particular imaging modality, such as trauma radiology, pediatric radiology, computed tomography, magnetic resonance imaging or cardiovascular-interventional radiology. Ultrasound, or sonography, certification is available either as a primary certification through the ARRT or the ARDMS, or ARRT post-primary certification is available as well. Additional certification for CT as a post-primary discipline is available through the ARRT. MRI certification as a primary or post-primary pathway is available through the ARRT.
- **Work Environment**—About 75% of all general radiographers are employed in hospitals. Mobile x-ray equipment allows the radiographer to work in the emergency room, operating rooms, or at the patient's bedside. Some work in specialized imaging centers, urgent care clinics, private physician offices, manufacturing plants, public health service facilities, and research centers. Most work 40-hour weeks and may have on-call hours in the evenings, nights, or on weekends.
- **Job Outlook**—The number of radiologic technologists employed in Florida in 2016 was 13,675. It is projected that by 2024 there will be 15,368, an annual average growth rate of 1.5 percent.
- **Length of Trainings/ Requirements**—Hospital-based certificate programs, approved two-year associate degree programs and four-year bachelor's degree programs are available in Florida. The approved curricula include courses in principles of radiologic exposure, imaging equipment, radiographic film processing, evaluation of radiographs, radiation physics, medical ethics and law, methods of patient care, and clinical practicum.

- **Advancement**—There are opportunities for advancement to administrative and supervisory positions such as chief technologist or technical administrator. With additional education and experience, radiologic technologists may qualify as quality management technologists, instructors, or researchers. Some may advance to sales or service positions in companies that manufacture x-ray equipment.
- **Licensure/Certification**—General radiographers must be licensed by the Florida Department of Health. Applicants must successfully pass the Florida General Radiologic examination administered by the American Registry of Radiologic Technologists. Voluntary registration is offered by the American Registry of Radiologic Technologists. Continuing education hours are required every two years for license renewal.
- **Salary**—The annual mean wage for radiologic technologist employed in Florida in 2015 was \$51,710.

- **Educational Programs**

- Certificate

- HaliFax Health Medical Center
- Hillsborough Community College
- Lakeland Regional Health Medical Center
- Marion Technical College
- Mayo Clinic Jacksonville
- St. Vincent's Medical Center
- UF Health Jacksonville
- West Boca Medical Center
- 21st Century Oncology, Inc. School for Radiation Therapy Technology

- Associate Degree

- Bethesda College of Health Sciences
- Broward College
- Eastern Florida State College
- Florida SouthWestern State College
- Gulf Coast State College
- Hillsborough Community College
- Indian River State College
- Keiser University
- Miami Dade College
- Palm Beach State College
- Pensacola State College
- Polk State College
- Santa Fe College
- South Florida State College
- St. Petersburg College
- State College of Florida

- Tallahassee Community College
- Valencia College
- Bachelor's Degree
- Adventist University of Health Sciences: Adventist University

- **Professional Associations**

- American Society of Radiologic Technologists

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 24, 2017.

29-2034 Radiologic Technologists. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes292034.htm#st>. Accessed February 24, 2017.

Sonographer

- **Description**—Sonographers use ultrasound equipment to direct high frequency sound waves into specific areas of a patient’s body to produce images of the shape, position, or movement of organs, fluid accumulations, masses, or fetuses. These images may be stored on a video, printouts, or digital storage devices. A physician reviews the images to assist in making the patient’s diagnosis. Responsibilities for sonographers could include selection and setup of appropriate equipment, explaining the procedure to patients, assisting patients in assuming the correct physical position, and putting patients at ease. During the procedures, they observe the real-time image being produced on a screen, and make proper adjustments to ensure a clear image.
- **Areas of Specialization**—Sonographers may specialize in examining specific areas of the body. Some examples are neuron-sonography (brain), cardiac sonography (heart), ophthalmic sonography (eyes), obstetrical/gynecological sonography (pregnant and non-pregnant uterus), and vascular sonography (blood vessels).
- **Work Environment**—Most sonographers work 40-hour weeks though part-time positions are available. They may also have evening, weekend, or on-call hours. Places of employment include hospitals, doctors’ offices, and imaging centers. Ultrasounds are performed in emergency rooms, operating rooms, patient’s bedside, and hospital imaging departments.
- **Job Outlook**—The number of diagnostic medical sonographers employed in Florida in 2016 was 5,094. It is projected that by 2024 there will be 6,451. This represents an annual average growth rate of 3.3 percent.
- **Length of Trainings/ Requirements**—There are a variety of educational settings in which to gain ultrasound education including four-year bachelor’s degree, two-year associate degrees, and one-year certificates. Some of the certificate programs are designed for individuals from other health occupations who decide to change fields. Most programs prefer applicants with backgrounds in science, however, those with liberal arts backgrounds or high school graduates with courses in math and science may be considered. The curriculum includes courses in sonography physics, applications of ultrasounds, instrumentation, abdominal sonography, sonographic cross sectional anatomy, patient care, and sonographic clinical practicum, with additional courses in a specialty area (i.e. abdominal sonography, echocardiography).
- **Advancement**—With additional education and experience, sonographers may become educators, researchers, and administrators.
- **Licensure/Certification**—Graduates of accredited programs are eligible to apply for the examination and certification offered by the American Registry of Diagnostic Medical Sonographers. Certification is voluntary; however, many employers prefer hiring certified sonographers. Continuing education hours (30) are required every three years to maintain certification. The American Registry of Radiologic Technologists (ARRT)

offers certification in Diagnostic Sonography as well as either primary pathway or a post-primary certification with a radiology certification.

- **Salary**—According to the Bureau of Labor Statistics, the annual mean wage for diagnostic medical sonographers employed in Florida in 2015 was \$62,160 and the hourly mean wage was \$29.88.
- **Educational Programs**
 - Certificate
 - Palm Beach State College
 - St. Vincents Medical Center
 - Associate Degree
 - Adventist University of Health Sciences
 - American College for Medical Careers
 - Broward College
 - Cambridge College Healthcare & Technology
 - Hillsborough Community College
 - Keiser University
 - Miami Dade College
 - Palm Beach State College
 - Polk State College
 - Santa Fe College
 - Southeastern College
 - Southern Technical College
 - Valencia College
 - Bachelor's Degree
 - Adventist University of Health Sciences
 - American College for Medical Careers
 - Nova Southeastern University
- **Professional Associations**
 - Society of Diagnostic Medical Sonographers

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 28, 2017.

29-2032 Diagnostic Medical Sonographers. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes292032.htm#st>. Accessed February 28, 2017.

Science and Engineering

- Medicine has recently been revolutionized by discoveries in the fields of science and engineering. Groundbreaking research has resulted in and continues to contribute to new technologies, more efficient drugs, innovative methods, and improved equipment, all of which contribute to better prevention and more effective treatment of injury and disease.
- Biomedical engineers combine their knowledge of engineering, the biological sciences, medicine, and computers to develop instruments and devices used to diagnose and treat patients. Biomedical Equipment technicians install and maintain medical equipment used in clinics, laboratories, and hospitals.
- Medical physicists work with radiation therapy or diagnostic radiology imaging machines to improve the treatment or diagnosis of disease. Medical use of ionizing radiation has been a huge benefit to the health of our society. Such Physicists may focus on medical nuclear physics, diagnostic radiological physics, and therapeutic radiological physics.
- Health physicists promote radiation safety, as ionizing radiation as the potential to do significant damage through irradiation and contamination of humans and their environments. They may focus on nuclear power, environmental and waste management, laws and regulations, and medicine.
- Radiation protection technicians are trained to monitor medical, occupational, and natural environments for radiation exposure.

Biomedical Engineer

- **Description**—Biomedical Engineering integrates the engineering sciences with biomedical science and clinical practice. This interdisciplinary approach to physical, chemical, mathematical, and computational sciences and engineering principles promotes more precise understandings of biology, medicine, behavior, and health. Acquiring new knowledge that is based on fundamental concepts and understanding living systems are cornerstones on which rest innovations in biologic materials, processes, implants, and devices, along with informatics approaches for the prevention, diagnosis, and treatment of disease, for patient rehabilitation, and for improving health.
- **Areas of Specialization**—Some well-established specialty areas within the field of biomedical engineering are bioinstrumentation, biomechanics, biomaterials, imaging, systems physiology, clinical engineering, and rehabilitation engineering. Bioinstrumentation is the application of electronics and measurement principles and techniques to the development of devices used in diagnosis and treatment of disease. Biomechanics deals with mechanics as applied to living systems. Biomaterials describe both living tissue and materials used for implantation. Imaging involving a variety of instruments and systems used in both medical diagnosis and therapy. Systems physiology is the term used to describe the aspect of biomedical engineering in which engineering strategies, techniques, and tools are used to gain a comprehensive and integrated understanding of the function of living organisms ranging from bacteria to humans. Clinical engineering is the application of technology for health care in hospitals. Rehabilitation engineering seeks to improve the capabilities of individuals with physical impairments.
- **Work Environment**—Biomedical engineers work in hospitals, government regulatory agencies, and medical, academic, industrial, and government research laboratories. They may serve as technical advisors or in management position.
- **Job Outlook**—The number of biomedical engineers employed in Florida in 2016 was 809. It is projected that by 2024 there will be 1,000, an annual average growth rate of 2.9 percent.
- **Length of Trainings/ Requirements**—The minimum requirement is a four-year bachelor's degree from an engineering program with concentration in biomedical engineering study. Master's and Ph. D. graduate programs are also offered at Florida universities.
- **Advancement**—With experience and a doctorate in engineering, one can do research or teach. Many high-level executives in the industry began their careers as engineers.
- **Licensure/Certification**—Certification is voluntary, and can be obtained through the Association for the Advancement of Medical Instrumentation. If an individual offers his/her services to the public as a biomedical engineer, he/she would have to be registered as a Professional Engineer. Applicants with a degree from an engineering program

approved by the Accreditation Board for Engineering and Technology, Inc., and four years of engineering experience may apply for a professional engineering license from the Board of Professional Engineers. Upon passing the examination offered by the National Council of Engineering Examiners administered by the Board, a professional Engineering License will be issued. Continuing education hours are required every two years for license renewal.

- **Salary**—The annual mean wage of biomedical engineers employed in Florida in 2015 was \$76,900.
- **Educational Programs**
 - Certificate
 - Florida Atlantic University
 - University of Florida
 - Bachelor's Degree
 - Florida Gulf Coast University
 - Florida International University
 - University of Florida
 - University of Miami
 - Master's Degree
 - Florida Agricultural and Mechanical University
 - Florida Atlantic University
 - Florida International University
 - Florida State University
 - University of Florida
 - University of South Florida
 - University of Miami
 - Doctor of Philosophy
 - Florida Agricultural and Mechanical University
 - Florida International University
 - Florida State University
 - University of Florida
 - University of South Florida
 - University of Miami
- **Professional Associations**
 - American Society for Healthcare Engineering
 - Association for the Advancement of Medical Instrumentation
 - Biomedical Engineering Society
 - Florida Engineering Society
 - National Society of Professional Engineers

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 28, 2017.

17-2031 Biomedical Engineers. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes172031.htm#st>. Accessed February 28, 2017.

Biomedical Equipment Technician

- **Description**—Biomedical equipment technicians (BMETs), also known as biomedical engineering technicians, work with biomedical equipment used to help diagnose and treat patients.

Their duties include: Installing equipment and providing instruction on its safe use to physicians, nurses, physical therapists, and others; inspecting and calibrating equipment such as radiation monitors, blood gas analyzers, spectrophotometers, electrocardiographs, and dialysis machines to insure safety and accuracy; troubleshooting of machine malfunction or failure; maintaining an inventory of parts and tools used in their repair work; and perform preventative maintenance and safety checks.

BMETs should have good communication skills, hand-eye coordination, and manual dexterity to work with electronics and machines.

- **Areas of Specialization**—BMETs may specialize in certain types of biomedical equipment used in radiology, nuclear medicine, surgery, dialysis, intensive care, or clinical laboratory.
- **Work Environment**—BMETs work under the supervision of biomedical engineers or report to a supervisor or director of general maintenance services. Many BMETs are employed by hospitals, but some also work for medical instrument manufacturers and companies supplying biomedical equipment and/or services to individual hospitals. BMETs wear protective equipment, such as rubber gloves and goggles, to minimize hazards from electrical shock, radiation, noxious fumes, and infection. They generally work a five-day, 40-hour week.
- **Job Outlook**—The number of “medical equipment repairers”, persons with the necessary skills to be employed as BMETs, in Florida in 2016 was 5,326. It is projected that by 2024 there will be 5,852, an annual average growth rate of 1.2 percent.
- **Length of Trainings/ Requirements**—High school graduates with a background in electronics sometimes may obtain on-the-job training. However, most students choose to obtain formal training in a two-year associate degree program at a community college. Community college credits earned in electronics engineering technology or biomedical equipment engineering technology may articulate toward a bachelor’s degree in engineering at some institutions.
- **Advancement**—With further education, BMETs may become engineers.
- **Licensure/Certification**—Voluntary certification is available for graduates of biomedical equipment technology programs and at least two years of full-time experience or graduates of electronics technology programs and at least three years of experience in the field. Upon passing a written examination offered by the Association for the Advancement of Medical Instrumentation (AAMI), one can become a certified biomedical equipment technician (CBET).

- **Salary**—The annual mean wage for “medical equipment repairers” in Florida in 2015 was \$44,050.
- **Educational Programs**
 - Associate Degree
 - Broward College
 - Florida State College
 - Hillsborough Community College
 - Santa Fe Community College
- **Professional Associations**
 - American Society for Healthcare Engineering
 - Association for the Advancement of Medical Instrumentation

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed February 28, 2017.

49-9062 Medical Equipment Repairers. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes499062.htm#st>. Accessed February 28, 2017.

Physicist

- **Description**—Medical health physics deals with the safe use of x-rays, gamma rays, electron and other charged particle beams, neutrons, radionuclides, and radiation from sealed sources for both diagnostic and therapeutic purposes in beings and the use of equipment required to perform appropriate tests and measurements that do not involve the direct application of radiation to humans for diagnostic or therapeutic procedures.
- **Areas of Specialization**—Health physicists promote the practice of radiation safety. They may specialize in nuclear power, environment and waste management, laws and regulations, and medicine.

Medical physicists work with radiation therapy machines or diagnostic radiology imaging machines to improve the treatment or diagnosis of disease. They may specialize in medical nuclear physics, diagnostic radiological physics, and therapeutic radiological physics.
- **Work Environment**—Health physicists work in nuclear power facilities, regulatory agencies, hospitals, research centers, universities, government agencies, or freestanding radiation oncology centers. Medical physicists focus more on clinical settings or clinical research laboratories.
- **Job Outlook**—The job outlook for medical and health physicists is favorable. Their specialized skills and the expansion of the general field qualify them for various positions.
- **Length of Trainings/ Requirements**—A bachelor's degree is the minimum requirement; many employers prefer advanced degrees. Applicants for graduate programs in health physics/medical physics should have a college degree in physics, biology, chemistry, or engineering. Studies cover courses in radiation biophysics, hazards evaluation, environmental radioactivity, nuclear physics and engineering, and radiobiology.
- **Advancement**—With a graduate degree and experience, one may advance to research and teaching positions, or act as consultants to physicists, biophysicists, chemists, biochemists, biologists, augers, geneticists, and physicians.
- **Licensure/Certification**—Medical physicists must be board certified by the American Boards of Radiology, the American Board of Medical Physics, or the American Boards of Health Physics, depending on the specialty in which the applicant applies to practice. Continuing education hours are required every two years for recertification. Medical physicists are regulated by the Florida Department of Health.
- **Salary**—According to the Health Physics Society, an average annual salary for health physicists in the South was \$115,978 in 2016.
- **Educational Programs**
 - Bachelor's degree
 - University of Florida

- Master's Degree
 - Florida Atlantic University
 - University of Florida
 - University of Miami
- Doctor of Philosophy
 - University of Florida
 - University of Miami
 - University of South Florida

- **Professional Associations**

- American Association of physicists in Medicine
- American Association of Physicists in Medicine-Florida Chapter
- American Nuclear Society
- U.S. Department of Energy

Resources

Bump SL. THE 2016 HPS SALARY SURVEY. Health Physics Society.
http://hps.org/documents/2016_salary_survey.pdf. Accessed February 28, 2017.

Special Technologies and Services

- Recent innovations in medical technology have resulted in revolutionary surgical techniques, drugs, treatments, devices, diagnostic methods, disease prevention methods and health information systems. As a result of this technological explosion, new occupations requiring special technical training and knowledge have been created.
- In this section you will learn about cardiovascular technicians who perform diagnostic examinations on the heart and blood vessels; cardiopulmonary technologists who also perform diagnostic exams of the heart and blood vessels; cardiopulmonary technologists who also perform diagnostic exams of the heart as well as performing pulmonary tests of lung function; electroneurodiagnostic technologists who record the patient's nervous system function including the electrical activity of the brain; electrocardiograph technicians who operate machines which record graphic tracings of electrical impulses transmitted by the heart muscle; perfusionists who are members of the open heart surgical team; surgical technologists who work in the operating room; and emergency medical personnel who are often on the scene in accidents and disasters to provide emergency care and transport the patients. All of these occupations are important and their services are increasing in demand in the delivery of health care.

Cardiovascular/ Cardiopulmonary Technologist

- **Description**—Cardiovascular technologists (CVTs) help doctors to diagnose and care for illnesses or injuries involving the heart or the blood vessels. At the request of a physician, they measure, analyze, and image the heart and circulatory system, performing invasive and non-invasive tests. Physicians depend on the results of these tests to determine the presence and extent of heart disease and as the basis for prescribing therapy if needed. Other duties of the technologist may include reviewing and recording medical histories and maintaining equipment.

Cardiopulmonary technologists (CPTs) are trained to perform the same tests and treatments as cardiovascular technologists but also to perform pulmonary tests. Other responsibilities include preparing patients for examinations, drawing blood samples, and explaining the procedures to patients. During the procedures, CPTs monitor both the patient and the equipment, and respond immediately in a medical emergency.

Cardiovascular technologies must be dependable, reliable, have mechanical aptitude, and be able to follow detailed instructions.

- **Areas of Specialization**—The CVT may specialize in one or more of three specialties: 1) invasive cardiology - assisting the physician with all aspects of cardiac catheterization from cardiovascular diagnosis to interventional procedures such as balloon angioplasty and pacemakers; 2) Echocardiology (Cardiac Ultrasound) - the use of ultrasound to image the valves, chambers, vessels, blood flow and motion of the heart; and 3) Vascular Ultrasound - imaging and evaluating blood flow in the arteries and veins throughout the body, screening for blockages and narrowing.

The CPT also performs pulmonary functions testing, such as spirometry, lung volumes, and blood gas analysis to measure lung function and collect diagnostic data. Other tests include sleep studies (polysomnography), respiratory exercise testing such as the evaluation of lung size, mechanical function and diffusion capabilities, pulmonary stress testing, oxygenation studies, bronchoscopies, cilia function studies, and cystic fibrosis screening tests. They may also become electrocardiographic technicians and perform EKGs, Holter monitoring studies and stress tests.

- **Work Environment**—Cardiovascular and cardiopulmonary technicians and technologists work directly with the physicians in hospitals and medical centers, clinics, physicians' offices, mobile diagnostic units, sales and training, and education. They typically work five day, 40-hour weeks, which may include weekends, evenings, and on-call service.
- **Job Outlook**—The number of Cardiovascular Technologists and Technicians employed in Florida in 2016 was 4,511. It is projected that by 2024 there will be 5,507, an annual average growth rate of 2.8%. This growth is expected as the population ages, because heart and lung conditions tend to develop in the older population and more diagnostic studies are needed.

- **Length of Trainings/ Requirements**—Training programs average two years, although they may be one to four years depending on previous experience and specialty area chosen. The curriculum includes core courses in human physiology, invasive and noninvasive cardiology techniques, vascular studies, clinical practicum and pulmonary functions testing for cardiopulmonary technologists.
- **Advancement**—Opportunities are available for the CVTs and the CPTs to advance into a leadership role within the field or pursue an advanced degree.
- **Licensure/Certification**—State licensure is not required at the present time. Graduates from programs accredited by the Commission on Accreditation of Allied Health Educational Programs (CAAHEP) may be registered in invasive cardiology, cardiac ultrasound and /or vascular ultrasound by Cardiovascular Credentialing International (CCI). The American Registry of Diagnostic Medical Sonographers (ARDMS) offers registry examinations for those graduates of accredited programs in cardiac and vascular ultrasound. The National Board for Respiratory Care (NBRC) offers certification and registry examinations for the Pulmonary Functions Technician and Technologist. Continuing education hours are required to maintain active registry status.
- **Salary**—The annual mean wage of Cardiovascular Technologists and Technicians employed in Florida in 2015 was \$47,410.
- **Educational Programs**
 - Associate Degree
 - Florida Southwestern State College
 - Florida State College at Jacksonville
 - International College of Health Sciences
 - Polk State College
 - Santa Fe College
 - Valencia College
 - Bachelor’s Degree
 - Nova Southeastern University
- **Professional Associations**
 - Alliance of Cardiovascular Professionals

Resources

29-2031 Cardiovascular Technologists and Technicians. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes292031.htm#st>. Accessed March 6, 2017.

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 3, 2017.

Electrocardiogram Technician

- **Description**—Electrocardiograph technicians, commonly called EKG technicians, operate noninvasive equipment which prints graphic tracings of electrical impulses transmitted by the heart.
The graphic tracing is interpreted by the physician to aid in the diagnosis of heart disease, monitor the effect of drug therapy, and analyze changes in the condition of the patient's heart over a period of time. Computerized electrocardiograph equipment has the capability of analyzing the graphic tracing. The EKG technician is responsible for maintaining the equipment and supplies, preparing the patient for the test and monitoring the patient during the procedure. Additional duties may include scheduling of appointments, data entry into computerized machines, typing of physicians' interpretations, and maintaining patient files.
- **Areas of Specialization**—In addition to performing routine diagnostic electrocardiograms, EKG technicians may specialize in continuous ambulatory (Holter) monitoring or cardiac stress testing. Holter monitoring records a patient's cardiac rhythm for a 24 to 48-hour period, while patients pursue their normal routines. Cardiac stress testing monitors and records a patient's cardiac rhythm during a period of prescribed exercise.
- **Work Environment**—EKG technicians work in hospital cardiology departments, physicians' offices, cardiac rehabilitation centers, health maintenance organizations, or clinics. In the hospital setting most EKGs are performed at the patient's bedside, thus EKG technicians will spend a significant amount of time walking and standing. Employees serving as monitor techs may be subjected to long hours of sitting in confined quarters.
- **Job Outlook**—The number of job openings for EKG technicians has declined. Redesign within the healthcare system has resulted in cross-training so that other health care workers have assumed these responsibilities, and EKG technicians have been assigned additional or other responsibilities. Job openings in Florida will vary, but will favor EKG technicians with the advanced training to perform Holter monitoring and stress testing.
- **Length of Trainings/ Requirements**—Health care workers desiring to be cross-trained to perform EKGs can obtain the necessary education at technical centers or private career schools. Cross-training classes are approximately 75 hours in length and prepare the individual to function at the aide level. Programs which prepare individuals as EKG technicians are found at technical centers, community colleges, and private career schools. The usual length of these programs is 465 hours (four months). Program content includes classroom instruction in anatomy and physiology with an emphasis on the cardiac and vascular system, medical terminology, cardiovascular medications, patient care techniques, interpretation of cardiac rhythm, medical ethics, and clinical practicum.

- **Advancement**—With additional education and experience, EKG technicians may perform specialized testing such as ambulatory monitoring and stress testing. Opportunities exist to branch into equipment sales and marketing.
- **Licensure/Certification**—Electrocardiograph technicians are not licensed in the state of Florida. A voluntary national certification is available through an exam offered by the National Health Career Association may be a condition for employment.
- **Salary**—According to the Florida Hospital Association, the average salary for an electrocardiograph technician was \$11.29/hour in 2005.
- **Educational Programs**
 - Certificate
 - Atlantic Technical College
 - Pensacola State College
 - William T McFatter Technical College
 - Diploma
 - Jose Maria Vargas University
 - Yechanlaz Instituto Vocacional
- **Professional Associations**
 - Cardiovascular Credentialing International, Inc.

Emergency Medical Technician/ Paramedic

- **Description**—Emergency medical technicians (EMTs) are emergency responders trained to provide immediate care for sick or injured people and transport them to medical facilities. They usually work in teams of two and may request additional assistance from the police or fire departments. While transporting the patient to the medical facility, the team remains in contact with the health care team at the hospital in order to receive special instructions and allow the hospital to be prepared for their arrival.
At the scene of the emergency the team assesses the individuals to determine the nature and extent of the injuries and illnesses, while also determining if the patients have other preexisting conditions that should be considered during treatment, such as epilepsy or diabetes. All emergency medical technicians may open airways, restore breathing, control bleeding, treat for shock, administer epinephrine, administer oxygen, assist in childbirth, treat heart attack victims using automated external defibrillator, and perform other basic procedures.
After each run, EMTs and paramedics must replace the supplies in the ambulance, check the equipment, and decontaminate the interior of the ambulance if the patient had a contagious disease. EMTs and paramedics should be emotionally stable, have good dexterity, agility, and physical coordination. They should also be able to remain calm and react quickly in life-or-death situations. One of the major distinctions between emergency medical technicians and paramedics is that the paramedic conducts a more in-depth patient assessment.
- **Advancement**—EMT's may take additional training to be EMT-Intermediates (EMT-Is) or EMT-Paramedics (EMT-Ps). EMTIs may also give intravenous fluids, and use advanced airway techniques such as endotracheal intubation, as well as other intensive care procedures. While in the state of Florida neither trains nor recognizes an advanced employment status for EMT-Is, many other states do.
EMT-Paramedics (EMT-Ps) are trained to provide the most extensive pre-hospital care. They may also give oral and intravenous drugs, interpret electrocardiograms (EKGs), and use other complex instruments and tests.
Advancement beyond this point usually includes leaving the field and becoming a supervisor, manager, administrative director, or executive director of emergency services. An EMT or paramedic may become an instructor or a registered nurse, a physician, or another type of health care worker.
- **Work Environment**—EMTs and paramedics work both inside and outside and spend most of their time standing, kneeling, bending, and lifting. They may also be exposed to infectious diseases and violent behavior from drug overdose victims. Although the work is both physically strenuous and stressful, as many of the work days involve life-or-death situations, those in the profession find the work very exciting, challenging, and

rewarding. Most work 50-hour weeks which may include being on-call for extended periods of time.

- **Job Outlook**—The number of Emergency Medical Technicians and Paramedics employed in Florida in 2016 was 10,207. It is projected that by 2024 there will be 11,883, an annual average growth rate of 2.0 percent.
- **Length of Trainings/ Requirements**—The EMT-basic curriculum consists of 200 to 250 hours of classroom instruction, skills practice in a laboratory, hospital emergency room and ambulance experience, and a field internship. The curriculum includes instruction and practice in handling bleeding, fractures, airway obstruction, cardiac arrest, and emergency childbirth. The EMT-Intermediate training consists of an additional 60 to 80 hours of instruction. This program includes further training in patient assessment, the use of esophageal airways, intravenous fluids, and anti-shock garments. Training for EMT-Paramedics includes 1100 to 1500 hours of instruction and experience. The program includes classroom instruction, clinical rotations in hospitals, a field internship aboard an ambulance, and laboratory experience. Upon completion of these programs, students receive certificates. A two-year associate degree in emergency medical services technology is also available. Students must be currently certified as EMTs before entering the paramedic program.
- **Licensure/Certification**—Paramedics and EMTs must pass the state certification examination administered by the Florida Department of Health Bureau of Emergency Medical Services. Graduates of approved programs must certify under oath that they are not addicted to alcohol or any controlled substance, and are free from any physical or mental defect or disease that might impair the ability to perform duties. EMTs must also be currently certified in cardiopulmonary resuscitation (CPR) and paramedics must be currently certified in advanced cardiac life support in order to be eligible for certification. EMTs and paramedics may be voluntarily registered by the National Registry of Emergency Medical Technicians. Continuing education hours are required every two years for certification renewal.
- **Salary**—The annual mean wage for EMTs and Paramedics employed in Florida in 2015 was \$31,080.
- **Educational Programs**
 - Diploma
 - American Medical Academy
 - Broward College
 - Eastern Florida State College
 - Emergency Educational Institute, Inc.
 - Florida Gateway College
 - Florida Panhandle Technical College
 - Health Career Institute
 - Manatee Technical College
 - Medical Career Academy
 - North Florida Community College
 - Palm Beach State College

- Hernando State College
- Pensacola State College
- South Florida State College
- Southeastern College

- Southeastern Medical Academy
- Southwest Florida Public Service Academy
- St. Petersburg College

○ Certificate

- Barry University
- Broward College
- Camsen Career Institute
- Chipola College
- College of Central Florida
- Coral Springs Regional Institute of Public Safety
- Daytona State College
- Eastern Florida State College
- Emergency Educational Institute, Inc.
- Florida Gateway College
- Florida Southwestern State College
- First Coast Technical College
- First Response Training Group, LLC.
- Florida State College at Jacksonville
- Florida State Fire College
- Gulf Coast State College
- George Stone Technical Center
- Hillsborough State College
- Indian River State College
- Lake Technical Center

- Manatee Technical College
- McFatter Technical Center
- Medical Career Academy
- Miami Dade College
- Nature Coast Emergency Medical Foundation
- North Florida Community College
- Northwest Florida State College
- Orange Technical College
- Orlando Medical Institute
- Palm Beach State College
- Hernando State College
- Pensacola State College
- Polk State College
- Santa Fe College
- Seminole State College
- St Johns River State College
- St. Petersburg College
- Suncoast Technical College
- Tallahassee Community College
- Urgent Response Training Institute
- Valencia College

○ Associate Degree

- Broward College
- City College
- College of Central Florida

- Eastern Florida State College
- Florida Gateway College

- Florida Southwestern State College
- Florida State College at Jacksonville
- Health Career Institute
- Hillsborough State College
- Medical Career Institute, LLC
- North Florida Community College
- Northwest Florida State College
- Orlando Medical Institute
- Pensacola State College
- Polk State College
- Santa Fe College
- South Florida State College
- Southeastern College
- St Johns River State College
- St. Petersburg College
- Valencia College

- **Professional Associations**

- National Association of Emergency Medical Technicians

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 3, 2017.

29-2041 Emergency Medical Technicians and Paramedics. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes292041.htm#st>. Accessed March 6, 2017.

Perfusionist

- **Description**—Perfusionists operate extracorporeal circulation equipment during any medical situation where it is necessary to support or temporarily replace a patient's respiratory or circulatory functions, such as in open heart surgery. In conjunction with physicians, they are responsible for the selection of the most appropriate equipment and techniques for administration of blood products, anesthetic agents, and drugs. Perfusionists may also perform administrative duties, such as purchasing equipment and supplies, hiring personnel, department management, and quality improvement. Perfusionists must handle very stressful situations, pay great attention to detail, be very responsible, and be willing to stay on top of new developments in the profession.
- **Areas of Specialization**—Perfusionists specialize in operating heart lung machines during cardiopulmonary bypass. Other areas of interest include ECMO, intra-aortic balloon pump monitoring, ventricular assist device monitoring, isolated limb perfusion and auto transfusion.
- **Work Environment**—Perfusionists usually work in hospitals. They may work on an on-call system including weekend and night duty. Some may be hired by individual surgeons, perfusion corporations, or companies that manufacture perfusion supplies and equipment.
- **Job Outlook**—According to the American Society of Extra-Corporeal Technology, the job openings for perfusionists in the United States are increasing due to the growing number of people age 65 and over who are more likely to develop cardiovascular disease and require open heart surgery. The utilization of coronary stents has impacted the need for perfusionists in smaller hospitals.
- **Length of Trainings/ Requirements**—Barry University offers a bachelor's degree in perfusion. The curriculum consists of courses in perfusion technology, perfusion devices, anatomy, physiology, physiological management of bypass, ethics, pathology, cardiology, research, and theology. Requirements for entry into the program include two years of prerequisites courses, such as English, speech, physics, chemistry, anatomy, physiology, computer science, and philosophy, as well as experience observing at least one cardiac surgical procedure requiring a cardiopulmonary bypass.
- **Advancement**—With additional education and/or experience, perfusionists can become administrators, educators, researchers and developers for product manufacturers, or move into marketing and sales.
- **Licensure/Certification**—Graduates of accredited perfusion programs are eligible to sit for the national certification examination given by the American Board of Cardiovascular Perfusion. This is a two-part examination divided into the basic science written examination and the clinical applications of perfusion examination. There is also a minimum requirement of performing 75 perfusion cases in order to sit for the

examination. Upon successful completion, the graduate is considered a Certified Clinical Perfusionist (CCP). Continuing education hours are required every three years in order to maintain certification and a clinical report is required annually.

- **Salary**—According to the Florida Hospital Association, the average hourly wage of a perfusionist was \$41.65 in 2005.
- **Educational Programs**
 - Bachelor's Degree
 - Barry University
- **Professional Associations**
 - American Academy of Cardiovascular Perfusion
 - American Society of Extra-Corporeal Technology

Prosthetist/ Orthotist

- **Description**—Prosthetists and orthotists are important members of a rehabilitation team that may also include psychiatrists, orthopedic surgeons, and doctors from many disciplines, as well as physical and occupational therapists.
Prosthetists provide care to patients with partial or total loss of a limb. They design, fabricate, and fit the patients with prosthetic devices (artificial limbs).
Orthotists provide care to patients with disabling conditions of the limbs and spine. They design, construct, and fit the patients with orthoses; orthoses are devices such as braces, splints, or arch supports that either stabilize or optimize movement of the limb according to the need.
Both prosthetists and orthotists are responsible for aligning and modifying the devices, evaluating patient progress, keeping accurate patient records, and teaching patients how to care for the prosthetic or orthotic devices. They use a variety of tools such as drills, fabric, lamination, and leather to create comfort, flexibility, and almost 100% mobility with a very life-like appearance. Prosthetists and orthotists must possess a great deal of mechanical ability, manual dexterity, compassion, hand-eye coordination, spatial judgement, and be able to work with little or no supervision.
- **Areas of Specialization**—Prosthetists and orthotists assess, design, fabricate, and fit custom orthopedic braces and artificial limbs to help individuals with disabilities of all ages lead more active, independent lives. Some may choose to focus on pediatrics, sports or other specialty areas.
- **Work Environment**—Prosthetists and orthotists may work in a private practice, hospital, rehabilitation facility, specialty clinic, nursing home, or in home health settings. They typically work 40-hour weeks.
- **Job Outlook**—The number of Orthotists and Prosthetists employed in Florida in 2016 was 409. It is projected that by 2024 there will be 477, an annual average growth rate of 2.1 percent.
- **Length of Trainings/ Requirements**—To become a prosthetist or an orthotist students may 1) complete a four-year bachelor's degree in prosthetics or orthotics and complete a one-year residency program for each discipline or 2) receive a bachelor's degree in another field plus a certificate in prosthetics or orthotics and complete a one-year residency in the discipline. Course work includes biometrics, material science, anatomy, pathomechanics, gait evaluation/normal human locomotion, range of motion/manual muscle testing, measurement, impression taking, fitting and alignment, and lower-limb and upper-limb prostheses and orthoses didactic and function principles.
- **Licensure/Certification**—Licensure is required in Florida. Candidates should hold a bachelor's degree and have completed a one-year residency program. Successful completion of the state-approved examination is required. The current state requirements for examination are the same as the exam required for certification by the American

Board for Certification in Orthotics and Prosthetics. Upon successful completion of the state requirements, the title of Licensed Prosthetist (LP), Licensed Orthotist (LO), or Licensed Prosthetist/Orthotist (LPO) will be awarded. Continuing education hours are required every two years for license renewal. Certification is available through the American Board for Certification in Orthotics and Prosthetics. Only students who have graduated from an accredited program in prosthetics or orthotics and have completed the residency program may sit for the examination. Upon successful completion of the requirements, the title of Certified Prosthetist (CP), Certified Orthotist (CO), or Certified Prosthetist/Orthotist (CPO) will be awarded. Continuing education hours are required every five years for certification renewal.

- **Salary**—The annual mean wage of orthotists and prosthetists employed in Florida in 2015 was \$69,680.
- **Educational Programs**
 - Master's Degree
 - Florida International University
- **Professional Associations**
 - American Academy of Orthotics and Prosthetics
 - American Academy of Orthotics and Prosthetics--Florida Chapter
 - American Board for certification American Orthotic and Prosthetic Association

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 7, 2017.

29-2091 Orthotists and Prosthetists. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes292091.htm#st>. Accessed March 7, 2017.

Surgical Technologist

- **Description**—Surgical technologists work closely with surgeons, anesthesiologists, registered nurses and other surgical personnel to deliver approximate patient care before, during, and after surgery.

They are responsible for preparing the operating room by selecting and opening sterile instruments and assembling, adjusting, and checking non-sterile equipment. They provide physical and emotional support for the patients prior to the surgery. They also help position the patient's, connect and apply the surgical equipment, and prepare the incision site.

During surgery, surgical technologists are responsible for using sterilizers, lights, suction machines, electrosurgical units and diagnostic equipment, and also maintaining the sterile field between the patient and the surgical team. Before, during, and after the surgery they are also responsible for counting the sponges, needles, and instruments to ensure there are still the same number as before the surgery. They label and handle sterile specimens, apply sterile dressings, and help transfer the patients to recovery. Surgical technologists must be able to perform under pressure in stressful and emergency situations. They must also possess stable temperaments, be very responsible, patient, detail oriented, quick, yet accurate, and have a great deal of manual dexterity and physical stamina.

- **Areas of Specialization**—Surgical technologists may specialize in a particular type of surgery such as open heart surgery, neurosurgery, organ transplantation, plastic surgery, and orthopedic surgery.
- **Work Environment**—Surgical technologists work with surgeons, anesthesiologists, and registered nurses in hospitals, physicians' offices, and surgical centers that have operating room, delivery room, or emergency room facilities. The work environment is usually well-lighted and cool. Most surgical technologists work 40-hour weeks. There are part-time schedules available. However, most workplaces require 24-hour coverage or expect on-call assignments for emergencies.
- **Job Outlook**—The number of surgical technologists employed in Florida in 2016 was 7,091. It is projected that by 2024 there will be 8,231, an annual average growth rate of 2 percent.
- **Length of Trainings/ Requirements**—Training programs may vary from eight months to two years. The curriculum may include courses in medical terminology, anatomy and physiology, introduction to surgical technology, surgical specialties, surgical techniques, sterile techniques, pharmacology and anesthesia, psychology, biology, microbiology, computing, medical law, and robotics.
- **Advancement**—With experience and/or further education, surgical technologists may advance to sales positions with surgical supply companies, inventory control management, surgical assistants, and surgical nurses.

- **Licensure/Certification**—No special license is required for surgical technologists; however, most hospitals require certification. Surgical technologists can become Certified Surgical Technologists (CSTs) by completing a CAAHEP-accredited surgical technology program and passing an examination given by the Liaison Council on Certification for the Surgical Technologists (LCC-ST). Surgical technologists must renew their certification every four years. They may participate in continuing education hours or retake the certifying examination.
- **Salary**—The annual mean wage for surgical technologist employed in Florida in 2015 was \$41,040.
- **Educational Programs**
 - Diploma
 - Concorde Career Institute
 - Certificate

<ul style="list-style-type: none"> ■ Cape Coral Institute of Technology ■ College of Central Florida ■ Daytona State College ■ Eastern Florida State College ■ Florida State College at Jacksonville ■ Gulf Coast State College ■ Indian River State College ■ Lindsey Hopkins Education Center ■ Lorenzo Walker Technical College ■ Manatee Technical College 	<ul style="list-style-type: none"> ■ Orange Technical College-Orlando ■ Palm Beach State College ■ Pensacola State College ■ Pinellas Technical College ■ RIVEROAK Technical College ■ Santa Fe College ■ Sheridan Technical College ■ Suncoast Technical College ■ Tallahassee Community College ■ Traviss Career Center
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 - Associate Degree

<ul style="list-style-type: none"> ■ Concorde Career Institute ■ Fortis College ■ Keiser University ■ Southeastern College 	<ul style="list-style-type: none"> ■ Tallahassee Community College ■ Virginia College
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- **Professional Associations**
 - Association of Surgical Technologies

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 7, 2017.

29-2055 Surgical Technologists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes292055.htm#st>. Accessed March 7, 2017.

Therapy

- Therapists use their special knowledge and skills to assist persons who are physically challenged to become as self-sufficient and productive as possible. They evaluate, diagnose, and/or treat people of all ages whose function is impaired by physical illness, injury, emotional disorder, congenital or developmental disability, or the aging process.
- Numerous career choices are available for those interested in becoming therapists. Examples of careers in therapy include occupational, physical, recreational, music, sports, and exercise, respiratory, speech, and hearing. Therapists work in a variety of settings from hospitals and clinics to schools, private offices, clients' homes, outdoors, gyms, or swimming pools. The therapist must be patient with slow progress and attentive to detail, yet flexible and creative. Lack of progress can be frustrating for the client and the therapist, but seeing a client's improvement is very satisfying.
- Alternative healthcare practices such as Reiki, Midwifery, Acupuncture and Traditional Chinese Medicine are sometimes used to complement western allopathic medicine. Many patients feel that their treatment plans benefit from the congruency of their values, beliefs, and philosophical orientations with clinical medical methods via such complementary therapies. Due to the difficulty of verifying standard information about certification requirements, regulating agencies, employment prospects, or salary estimates for such alternative therapists as careers, those therapies are not detailed in the following section.
- Many but not all the careers addressed in the following "Therapy" section require a baccalaureate or graduate degree.

Athletic Trainer

- **Description**—Athletic trainers are part of a complete athletic health care team that helps athletes avoid or recover from injury and to achieve physical fitness. They must be patient, able to work with a team of other health care providers, and be interested in learning about the advancement in their field.
- **Areas of Specialization**—Athletic trainers are trained in prevention of athletic injuries, recognition, evaluation, and immediate care of athletic injuries, rehabilitation and reconditioning of athletic injuries, health care administration, education and counseling.
- **Work Environment**—Most often a certified athletic trainer enters the workforce in an outpatient sports medicine/orthopedic clinic or as a teacher/athletic trainer in a high school. They may also be employed by secondary schools, colleges and universities, professional sports teams, corporate health programs, and hospitals. They work with athletes, coaches, physicians, and other health care providers to combine training, therapy, and teaching.
- **Job Outlook**—The number of athletic trainers employed in Florida in 2016 was 1,239. It is projected that by 2024 there will be 1,459, an annual average growth rate of 2.2 percent.
- **Length of Trainings/ Requirements**—An athletic trainer must be over 21 and have:
 - A baccalaureate degree from an accredited college or university that includes: 3 semester hours of 4 quarter hours from an accredited college or university in: health, human anatomy, kinesiology/biomechanics, human physiology, physiology of exercise, basic athletic training and advanced athletic training.
 - Students must also complete at least 800 hours of athletic training experience under the direct supervision of a certified athletic trainer.
- **Advancement**—Completion of a master's degree or doctoral degree in Sports Medicine, Athletic Training, and Exercise Physiology are required to qualify an athletic trainer for teaching positions at colleges or universities.
- **Licensure/Certification**—Licensure is required by the Florida Department of Health to practice athletic training in Florida. Some requirements are current certification as an athletic trainer certified by the National Athletic Trainers Association Board of Certification (NATABOC) or a comparable national athletic standards organization and proofs of current certification or completion of:
 - Standard first aid and cardiovascular pulmonary resuscitation training from the American Red Cross or the American Health Association;
 - An examination administered or approved by the FL Department of Education
 - A two-hour course on prevention of medical errors
 - A continuing education course on HIV AIDS presented by a qualifying agency
 - Continuing education hours are required every three years for recertification and every two years for license renewal.

- **Salary**—The annual mean wage for athletic trainers employed in Florida in 2015 was \$44,130.
- **Educational Programs**
 - Bachelor's Degree
 - Barry University
 - Florida Gulf Coast University
 - Florida State University
 - Nova Southeastern University
 - University of Central Florida
 - University of Florida
 - University of Miami
 - University of North Florida
 - University of Tampa
 - University of West Florida
 - Master's Degree
 - Florida International University
 - Gannon University
 - University of South Florida
- **Professional Associations**
 - National Athletic Trainers' Association
 - The Athletic Trainers' Association of Florida

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 7, 2017.

29-9091 Athletic Trainers. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes299091.htm#st>. Accessed March 7, 2017.

Audiologist

- **Description**—Audiologists specialize in the diagnosis, prevention, and treatment of patients suffering from hearing and balance disorders. Audiologists determine hearing problems by using special instruments such as an audiometer to measure the range, nature, and degree of hearing ability. They are also involved in the assessment of balance disorders related to mechanisms within the ear.

Once the presence and type of hearing loss are diagnosed, audiologists develop and implement an organized program of treatment for the patients. This may be done in consultation with other health care professionals such as speech-language pathologists, physicians, or psychologists. Treatment may include the dispensing and fitting of hearing aids, providing instruction in speechreading, auditory training, the use of listening devices, such as telephone and television amplifiers, working in conjunction with physicians for provision of cochlear implants, and providing counseling services to those who are hard of hearing and their families. For patients with balance disorders, the audiologist works with physicians and physical therapists for the development of treatment plans.

Audiologists must be able to speak clearly, hear well, see well, have good use of upper extremities, offer encouragement and support, and be compassionate since the patient may be difficulty responding to instructions. Their job requires attention to detail and strong concentration.

- **Areas of Specialization**—Hearing aids, cochlear implants, pediatrics, educational audiology, balance and dizziness are all areas of interest to audiologists.
- **Work Environment**—Audiologists are employed in private practice, speech, language, and hearing centers, hospitals, rehabilitation centers, home health agencies, nursing homes, physicians' offices, private practices, and in public school district. Most work about 40 hours a week. Audiologists spend most of their time in clean, well-lighted, and comfortable surroundings.
- **Job Outlook**—The number of audiologists employed in Florida in 2016 was 620. It is projected that by 2024 there will be 765, an annual average growth rate of 2.9 percent. Hiring of lower-paid ear technicians to perform the functions previously performed by audiologists in doctor's offices to deal with decreased reimbursements may contribute to the downturn. Other factors unknown at this time may be contributory as well. While the overall employment outlook at this time is not vigorous, employment in educational services is expected to increase and retiring workers will need replacements.
- **Length of Trainings/ Requirements**—A doctoral degree is the minimum entry-level requirement. Applicants often have undergraduate work in audiology and speech-language pathology as well as in other fields, such as education, psychology, or other sciences. The audiology program includes courses in anatomy and physiology, hearing

acoustics, instrumentation, pharmacology, geriatrics, hearing conversation, cochlear implants, vestibular evaluation and treatment, and hearing aids.

- **Advancement**—The American Speech-Language-Hearing Association has approved the professional doctoral degree as the appropriate entering degree for the practice of the profession. All auditory programs in Florida now offer the Doctor of Audiology Degree (Au.D.), which is a 4-year post baccalaureate degree. For individuals wishing to become professors and researchers, several universities offer a Ph.D. in addition to the Au.D.
- **Licensure/Certification**—Audiologist in Florida are licensed under the Board of Speech-Language Pathology and Audiology. While completing a doctoral degree, the students must complete the equivalent of one full-time year of supervised clinical practice, and one hour of HIV/AIDS training. Students must also pass the national examination. Those with doctoral degrees may also obtain the Certificate of Clinical Competence (CCC) from the American Speech-Language-Hearing Association or the Fellowship-AAA (F-AAA) offered by the American Academy of Audiology. Continuing education hours are required every two years for license renewal.
- **Salary**—The annual mean wage for audiologists employed in Florida in 2015 was \$74,360.
- **Educational Programs**
 - Doctor of Audiology
 - Nova Southeastern University
 - University of Florida
 - University of South Florida
- **Professional Associations**
 - American Academy of Audiology
 - American Speech-Language-Hearing Association
 - Florida Association of Speech-Language Pathology and Audiology

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 7, 2017.

29-1181 Audiologists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291181.htm#st>. Accessed March 8, 2017.

Exercise Physiologist

- **Description**—Physiologists with a specific interest in the physiology of exercise are called exercise physiologists. Their duties include monitoring and assessing cardiovascular and metabolic effects and mechanisms of exercise, replenishment of fluids during exercise, and exercise for cardiac and musculoskeletal rehabilitation.
- **Areas of Specialization**—They may conduct fitness evaluation, and prescribe exercise programs for overall health maintenance. Or they may focus on specialties such as cardiology, sports medicines, respiratory or physical therapy. This may include risk identification, and rehabilitation in conjunction with other health professionals who provide rehabilitation programs. In educational settings, they may teach courses for students of medicine, physiology, and other health related fields.
- **Work Environment**—Exercise physiologists may be employed in extremely diverse settings, such as community organization venues, or in commercial/industrial facilities, health clubs, recreation centers; and educational institutions. Exercise physiologists may also work in clinical settings prescribing exercise for cardiac, pulmonary, or other types of patients referred by a physician.
- **Job Outlook**—The number of exercise physiologists employed in Florida in 2016 was 1,024. It is projected that by 2024 there will be 1,161, an annual average growth rate of 1.7 percent. The job outlook is good due to the increasing emphasis on prevention of illness and on exercise as a means of promoting good health. Also, there are many opportunities for research on aging, rehabilitation of muscle injuries, and the health benefits of exercise.
- **Length of Trainings/ Requirements**—The education requirements vary depending on the employment settings; usually a master's degree in exercise physiology is the minimum requirement. However, for individuals who plan to hold positions in organizations or commercial settings, an undergraduate degree in physical education, exercise science, health science, and nutrition is helpful. Additional training in physical therapy and kinesiology is valuable for persons seeking positions in health-related settings. For an academic career in research and/or teaching, a Ph.D. is required.
- **Licensure/Certification**—Certification requirements for exercise physiologists in most states are not well established. However, for those interested in employment other than an academic career, the certification for exercise test technologist, exercise specialist, or health/fitness director is available through the American College of Sports Medicine. ACSM's highest certification is program director. Continuing education hours are required every four years for recertification.
- **Salary**—The annual mean wage of exercise physiologist employed in Florida in 2015 was \$48,920.
- **Educational Programs**

- Bachelor's Degree
 - Barry University
 - Florida Atlantic University
 - Florida Gulf Coast University
 - Florida Southern University
 - Florida State University
 - Nova Southeastern University
 - Stetson University
 - University of Florida
 - University of Miami
 - University of South Florida
 - Warner University
 - University of West Florida
- Master's Degree
 - Barry University
 - Florida Atlantic University
 - Florida State University
 - University of Florida
 - University of Miami
 - University of South Florida
 - University of West Florida
- Doctoral Degree
 - Florida State University
 - University of Florida
 - University of Miami

- **Professional Associations**

- American College of Sports Medicine
- American Society of Exercise Physiologists

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 7, 2017.

29-1128 Exercise Physiologists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291128.htm#st>. Accessed March 8, 2017.

Massage Therapist

- **Description**—A licensed massage therapist (LMT) is a professional whose role in the field of health is treatment of soft tissues and body joints primarily by performing therapeutic massage. An LMT may also assist in the assessment for range of motion and muscle strength, and by proposing treatment plans. The goals of therapeutic massage are general wellness, injury recovery, stress management, palliative care, and preventative maintenance.

The basic training covers learning and performing general massage techniques, and assisting patients to learn to stretch and other self-help techniques. The student learns to evaluate a client by a verbal interview, utilizing a health history form and a body reading. The massage therapist may also refer the client to other health care professionals as needed.

An LMT demonstrates an understanding of anatomy and physiology, kinesiology, pathology, indications/contraindications for massage regarding specific conditions, medical terminology, and the importance of developing trust and rapport with the clients.

- **Areas of Specialization**—There are over 150 massage ‘modalities’ advertised nationally, as compiled by the Florida Board of Massage Therapy. Popular areas of specialization include deep tissue massage, neuromuscular therapy, energy therapies, reflexology, sports massage, Thai massage and spa therapies.
- **Work Environment**—Massage therapists may work in health clubs, resorts, beauty salons, spas, rehabilitation centers, stress reduction centers, hospitals, and corporate settings. They may also work with other health care providers, such as physicians, chiropractors, podiatrists, dentists, physical therapists, and psychologists. Many are self-employed and open their own office or contract their massage services to other businesses.
- **Job Outlook**—As healthcare begins to incorporate alternative therapies, such as massage, into conventional health care treatments, the job outlook for massage therapists is very good. The number of massage therapists employed in Florida in 2024 was 14,660. It is projected that by 2024 there will be 17,485, an annual average growth rate of 2.4 percent.
- **Length of Trainings/ Requirements**—The minimum length of training of massage training in Florida is 500 hours. Students may complete educational requirements at either a private or public vocational massage school, as long as the school is approved by the Florida Board of Massage Therapy.
- **Licensure/Certification**—To practice as an LMT, in the state of Florida, one must successfully pass the National Certification Exam for Therapeutic Massage and Bodywork and then also be approved for licensure through an application process with the Florida Board of Massage Therapy. Continuing education hours, including a two-hour

course in the Prevention of Medical Errors and an HIV/AIDS update, and a renewal fee are required every two years for license renewal.

- **Salary**—The annual mean wage for massage therapists employed in Florida in 2015 was \$42,240.
- **Educational Programs**
 - See Florida Board of Massage Therapy for list of approved schools.
 - <http://www.floridasmassagetherapy.gov/forms/mt-approved-schools.pdf>
- **Professional Associations**
 - American Massage Therapy Association
 - Associated Bodywork and Massage Professionals
 - Florida State Massage Therapy Association

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 7, 2017.

31-9011 Massage Therapists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes319011.htm#st>. Accessed March 8, 2017.

Music Therapist

- **Description**—In the medical setting, music therapists plan, organize, and direct medically approved music programs as part of the care and treatment of patients of all ages who suffer from physical, mental, or emotional illnesses.
Music therapists use music along with other techniques such as counseling, behavior modification, and physical activity to achieve therapeutic goals. They build patients' confidence and self-esteem and help patients deal with pain or trauma. They help patients manage stress through relaxing activities and by facilitating expression of feelings in positive and effective ways. Music therapists must be adept at a variety of psychotherapeutic, physical rehabilitation, and teaching techniques. They should be creative, empathetic patient, able to give easy-to-follow instructions, and able to play a variety of musical instruments.
- **Areas of Specialization**—Music therapists may specialize in a particular age group or with patients who suffer from a particular problem.
- **Work Environment**—The music therapist usually works as a team member in the neuroscience, hospital rehabilitation or therapy department with other therapists from such disciplines as speech, physical and occupational therapy. Other employment setting includes mental health centers, physical rehabilitation centers, nursing homes, schools, institutions or private clinics, and correctional institutions.
- **Job Outlook**-- Employment of recreational therapists is projected to grow 7 percent from 2016 to 2026, about as fast as the average for all occupations. As the large baby-boom generation ages, they will need recreational therapists to help treat age-related injuries and illnesses and to help them maintain a healthy, active lifestyle.
- **Length of Trainings/ Requirements**—Following the completion of the undergraduate courses, a six-month clinical internship in an approved mental health, special education, or health care facility is required. In order to enroll in a master's program, the student must hold a baccalaureate degree in music therapy, the equivalency in music therapy, or be working toward fulfilling the degree equivalency requirements.
- **Advancement**—With additional education and experience, the therapist may advance to supervisor of an entire therapy department, faculty administrator, or move into a research or teaching position.
- **Licensure/Certification**—Graduates with a bachelor's degree from an American Music Therapy Association approved program are eligible to take a national certification exam which is administered by the Certification Board for Music Therapists.
- **Salary**—The median annual wage for recreational therapists was \$47,680 in May 2017.
- **Educational Programs**
 - Bachelor's Degree
 - Florida Gulf Coast University
 - Florida State University

- University of Miami
- Master's degree
 - Florida State University
 - University of Miami
- Doctoral Degree
 - Florida State University
 - University of Miami
- **Professional Associations**
 - American Music Therapy Association

Resources

Recreational Therapists. (2018, April 13). Retrieved from <https://www.bls.gov/ooh/healthcare/recreational-therapists.htm>

Occupational Therapist

- **Description**—Occupational therapists help disabled individuals and/or populations work toward maximum health and independence via rehabilitation of lost capabilities for work and/or daily living skills. These abilities may have been disrupted by physical illness or injury, congenital or developmental disability, emotional and/or cognitive disorder, or by the aging process.

Therapists use a variety of approaches to assess each individual's needs and to determine how they can best be met. Standardized and non-standardized evaluation and assessment tools are available. The type of evaluation may depend on the client's age. For example, toys and games may best be used with children. In treating adults, computers, work simulation, leisure activities, or self-care tasks may serve better. The effectiveness of the intervention and progress of the individual are carefully monitored and recorded by occupational therapists. They also work with rehabilitation engineers to design and provide and provide special equipment or develop computer-aided equipment such as wheelchairs, splints, and eating and dressing aids for use in the home, work, or in school. They must be patient in order to gain the individual's trust, and creative to adapt the evaluation and intervention approaches to each person's individual needs.

- **Areas of Specialization**—Therapists may specialize in a particular field of concentration as it relates to the lifespan cycle (pediatrics vs. gerontology) and to the various conditions and diagnoses (neurology vs. mental health). There is ample opportunity for therapists to change their field of concentration through continuing education and/or mentoring by senior therapists.
- **Work Environment**—Occupational therapists may work in hospitals, schools, mental health facilities, nursing homes, job training services, residential care facilities and in private practice, to name a few of the available work settings. The work week may vary from a traditional 40-hour week to a more non-traditional evening/weekend work week. Certain work environments are more physically demanding than others because the therapists often must lift patients and equipment.
- **Job Outlook**—The number of occupational therapists employed in Florida in 2016 was 6,159. It is projected the by 2024 there will be 7,467, an annual average growth rate of 2.6 percent.
- **Length of Trainings/ Requirements**—Currently, the minimal requirement for entry into the field is a master's degree in occupational therapy. In addition of the academic education, an approved supervised clinical training period of six months is required for professional certification. The college preparation for occupational therapy emphasizes health and social science, such as anatomy, physiology, neurology, psychology, and sociology. The students also study occupation, occupational performance, occupational therapy theories, evaluation, intervention, and the use of assistive technology.

- **Advancement**—Within a hospital setting, staff therapists with adequate clinical experience may qualify as senior therapists, whereby they carry out more administrative and/or clinical teaching duties. Experienced therapists may become directors of occupational therapy programs in large hospitals, clinics, or workshops, or set up their own private practice.
- **Licensure/Certification**—To practice as an occupational therapist in Florida, both national certification and state licensure are required. To be eligible for the certification exam the applicant must be a graduate of an accredited OT program. Accreditation is granted by the Accreditation Council for Occupational Therapy Education of the American Occupational Therapy Association. A state license is obtained from the Department of Health Board of Occupational Therapy Practice. Continuing education is required every two years for license renewal.
- **Salary**—The annual mean wage for occupational therapists employed in Florida in 2015 was \$85,520.
- **Educational Programs**
 - Master’s Degree
 - Adventist University of Health Sciences
 - Barry University
 - Florida Agricultural and Mechanical University
 - Florida Gulf Coast University
 - Florida International University
 - Nova Southeastern University
 - University of Florida
 - University of St. Augustine for Health Sciences
 - Doctor of Occupational Therapy
 - Nova Southeastern University
- **Professional Associations**
 - American Occupational Therapy Association, Inc.
 - Florida Occupational Therapy Association

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 14, 2017.

29-1122 Occupational Therapists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291122.htm#st>. Accessed March 14, 2017.

Occupational Therapy Assistant

- **Description**—Occupational therapy assistants (OTAs) assist occupational therapists in providing rehabilitative treatment and exercises to people suffering from physical, mental, emotional, or developmental illnesses or disabilities. The goal of the collaboratively developed treatment plan is to help the patients overcome limitations to improve quality of life. Activities may include teaching the proper movement from bed to wheelchair, or the best way to stretch and limber the muscles of the hand. OTAs provide monitoring and encouragement to ensure that patients perform and practice these activities correctly and safely.
In accordance with Florida’s laws, OTAs may assist in developing treatment plans, carrying out routine functions, directing activity programs, and documenting the progress of treatments in detail. The work is essentially the same as that of an occupational therapist except for the evaluations. Occupational Therapy Assistants also maintain equipment used in therapy, order supplies, and perform other clerical tasks.
- **Areas of Specialization**—Occupational therapy assistants may specialize in a particular field of concentration as it relates to the lifespan cycle (pediatrics vs. gerontology) and to the various conditions and diagnoses (neurology vs. mental health). There is ample opportunity for therapists to change their field of concentration through continuing education and/or mentoring by senior therapists.
- **Work Environment**—Assistants usually work 40-hour weeks, although some weekend hours may be required. They are part of a multi-disciplinary medical team working in hospitals, rehabilitation centers, nursing homes, and home health care. They are also found in schools, community health programs, and adult day care centers.
- **Job Outlook**—The number of occupational therapy assistants employed in Florida in 2016 was 1,740. It is projected that by 2024 there will be 2,266, an annual average growth rate of 3.8 percent.
- **Length of Trainings/ Requirements**—Most training programs last two years; successful completion results in an associate of science degree from a community college. The intense curriculum covers courses in medical sciences such as anatomy and physiology, human growth and development, medical diseases, and specialty courses such as daily living skills, therapeutic media, and adaptive equipment. Applicants can improve their chances of acceptance by volunteering in occupational therapy departments. This professional must possess people skills and enjoy working and motivating the sick and disabled.
- **Advancement**—In large hospitals and clinics, occupational therapy assistants may become supervisors.
- **Licensure/Certification**—To practice as an occupational therapy assistant in Florida, both national certification and state licensure are required. To be eligible for the certification exam the applicant must be a graduate of an accredited OTA program.

Accreditation is granted by the Accreditation Council for Occupational Therapy Education of the American Occupational Therapy Association. A state license is obtained from the Department of Health Board of Occupational Therapy Practice. Continuing education is required every two years for license renewal.

- **Salary**—The annual mean wage for occupational therapy assistants employed in Florida in 2015 was \$62,240
- **Educational Programs**
 - Associate Degree
 - Adventist University of Health Sciences
 - Concorde Career Institute
 - Daytona State College
 - Florida State College at Jacksonville
 - Keiser University
 - Polk State College
 - Remington College
 - South University
 - State College of Florida
 - The Praxis Institute
- **Professional Associations**
 - American Occupational Therapy Association, Inc.
 - Florida Occupational Therapy Association

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 14, 2017.

31-2011 Occupational Therapy Assistants. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes312011.htm#st>. Accessed March 14, 2017.

Physical Therapist

- **Description**—The physical therapist provides services aimed at preventing the onset and/or slowing of the progression of conditions resulting from injury, disease, and other causes. The physical therapist provides these services to people of all ages who have functional conditions resulting from back and neck injuries, sprains/strains and fractures, arthritis, burns, amputations, stroke, multiple sclerosis, birth defects such as cerebral palsy and spina bifida, injuries related to work and sports, and others.
- **Areas of Specialization**—Physical therapists may specialize in areas such as pediatrics, geriatrics, orthopedics, sports medicine, neurology, and cardiopulmonary physical therapy.
- **Work Environment**—Most physical therapists work 40 hours each week. Although many physical therapists practice in hospitals, nearly 80% practice in:
 - Outpatient clinics or offices
 - Inpatient rehabilitation facilities
 - Skilled nursing, extended care, or sub-acute facilities
 - Homes Education or research centers
 - Schools Hospices Industrial, workplace, or other occupational environments
 - Fitness centers and sports training facilities
- **Job Outlook**—The number of physical therapists employed in Florida in 2016 was 12,872. It is projected that by 2024 there will be 16,021, an annual average growth rate of 3.1 percent.
- **Length of Trainings/ Requirements**—The minimum educational requirement is a post-baccalaureate degree as a physical therapist from an institution that has been approved for the training of physical therapists by the Commission on Accreditation for Physical Therapy Education (CAPTE). Currently, all of the approved programs reward a Doctor of Physical Therapy degree.
- **Advancement**—With experience, therapists can become supervisors or directors of departments. With a doctoral degree, physical therapists can also move into research or teaching positions.
- **Licensure/Certification**—In Florida, state licensure for physical therapists is required. The licensure examination is administered by the State Board of Physical Therapy, upon completion of an accredited education program. Specialty certification of physical therapists is not a requirement for employment; however, it may increase the opportunity for employment and lead to a higher salary scale. Physical therapists are required to complete continuing education hours every two years for license renewal.
- **Salary**—The annual mean wage for physical therapists employed in Florida in 2015 was \$85,110.
- **Educational Programs**
 - Doctor of Physical Therapy

- Florida Agricultural and Mechanical University
- Florida Gulf Coast University
- Florida International University
- Nova Southeastern University
- University of Central Florida
- University of Florida
- University of Miami
- University of North Florida
- University of South Florida
- University of St Augustine for Health Sciences

- **Professional Associations**

- American Physical Therapy Association
- Florida Physical Therapy Association

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 14, 2017.

29-1123 Physical Therapists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291123.htm#st>. Accessed March 14, 2017.

Physical Therapist Assistant

- **Description**—The physical therapist assistant (PTA) is a technically educated health provider who assists the physical therapists in the provision of physical therapy and may perform physical therapy interventions selected by the supervising physical therapist the physical therapist assistant works under the direction and supervision of the physical therapist, helping manage conditions such as back and neck injuries, sprains/strains and fractures, arthritis, burns, amputations, stroke, multiple sclerosis, birth defects, injuries related to work and sports, and others.
- **Work Environment**—Physical therapist assistants work in a broad range of settings, including the following:
 - Hospitals Outpatient clinics or offices
 - Rehabilitation facilities
 - Skilled nursing, extended care, or sub-acute facilities
 - Homes Education or research centers
 - Schools Hospices Industrial, workplace, or other occupational environments
 - Fitness centers and sports training facilities
- **Job Outlook**—The number of physical therapist assistants employed in Florida in 2016 was 4,604. It is projected that by 2024 there will be 5,973, an annual average growth rate of 3.7 percent.
- **Length of Trainings/ Requirements**—Physical therapist assistants must complete a two- year training program leading to an associate in science (A.S.) degree or associate in applied science (A.A.S.) degree, offered through community colleges and private colleges. The curriculum may include core courses in principles of physical therapy, introduction to basic patient care, functional anatomy and kinesiology, and clinical practicum. They must also have certifications in CPR and first aid. Graduates from accredited programs are eligible to take the state licensure examination.
- **Licensure/Certification**—In Florida, licensure for physical therapist assistants is required. The licensure examination is administered by the Federation of State Boards of Physical Therapy. The student must have an A.S. or an A.A.S. degree in physical therapist assisting to take the exam. Twenty-four continuing education hours are required every two years for license renewal.
- **Salary**—The annual mean wage for physical therapist assistants employed in Florida in 2015 was \$61,610.
- **Educational Programs**
 - Associate of Science or Associate in Applied Science Degree
 - Broward College
 - College of Central Florida
 - Concorde Career Institute
 - Daytona State College
 - Florida Gateway College
 - Florida National University
 - Florida State College at Jacksonville

- Gulf Coast State College
- Herzing University
- Hodges University
- Indian River State College
- Keiser University
- Miami Dade College
- Pensacola State College
- Polk State College
- SABER College
- Seminole State College of Florida
- South University
- St Petersburg College
- State College of Florida
- Taylor College
- The Praxis Institute

- **Professional Associations**

- American Physical Therapy Association
- Florida Physical Therapy Association

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 15, 2017.

31-2021 Physical Therapist Assistants. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes312021.htm#st>. Accessed March 15, 2017.

Recreational Therapist

- **Description**—Recreational therapists plan, organize, direct, and counsel medically approved therapeutic recreation programs for patients with physical, mental, or emotional disabilities. Their duties may include assessment of a patient condition and recommendation of appropriate recreational activity.
Recreational therapists employ leisure activities as a form of treatment similar to other health practitioners who use surgery, drugs, or exercise to improve patients' abilities to cope with their daily functions. Therapists utilize activities in areas such as sports, trips, gardening, arts and crafts, social interaction, nature study, games, aquatics, and expressive arts to meet patients' needs, capabilities, and interests. They also observe and report on patients' physical, mental, and social progress to their doctors, psychiatrists, social workers, physical therapists, and other professionals as part of the treatment team for planning future therapies. Recreational therapists should be comfortable working with people who have disabilities.
- **Work Environment**—Recreational therapists work in institutions such as hospitals, physical rehabilitation centers, substance abuse rehabilitation and treatment facilities, mental health centers, and adult long term care or correctional facilities. They may also be employed by adult day care programs, school systems, community parks, and recreation departments. Most recreational therapists work 40-hour weeks, which may include some evenings, weekends, and holidays. They participate in a wide variety of active and passive activities with the patients and participants.
- **Job Outlook**—The number of recreational therapists employed in Florida in 2016 was 714. It is projected that by 2024 there will be 795, an annual average growth rate of 1.4 percent.
- **Length of Trainings/ Requirements**—Approved training programs are offered at state universities leading to bachelor's and master's degrees in recreation with an option in therapeutic recreation. The curriculum usually includes core courses in foundations of therapeutic recreation, leisure education and counseling, program planning, principles and practices of therapeutic recreation, electives in human services, and an internship. Prerequisites for admission to the bachelor's degree program include the general education courses and anatomy and physiology, medical terminology, and human growth and development. Prerequisites for the master's program include a bachelor's degree in any field. Those with degrees out of the field are required to complete some core course work prior to beginning the program.
- **Advancement**—With a graduate degree, they may become independent consultants, advance to executive positions in administration, or do research.
- **Licensure/Certification**—Most employers prefer to hire certified therapists; however, certification is voluntary in Florida. Certification may be obtained from the National Council for Therapeutic Recreation Certification. Students are required to complete

course requirements, an approved internship, and pass a national exam to become certified.

- **Salary**—The annual mean wage for recreational therapists employed in Florida in 2015 was \$51,430.
- **Educational Programs**
 - Bachelor's Degree
 - Florida International University
 - Nova Southeastern University
 - Master's Degree
 - Florida International University
- **Professional Associations**
 - National Therapeutic Recreation Society

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 15, 2017.

29-1125 Recreational Therapists. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes291125.htm#st>. Accessed March 15, 2017.

Rehabilitation Counselor

- **Description**—Rehabilitation counselors provide counseling, guidance and case management services to persons with disabilities to assist them in achieving their psychological, personal, social, and vocational goals. Rehabilitation counselors determine the impact of disability on goal attainment; evaluate vocational interests, aptitudes, and skills of clients; and provide appropriate services to maximize career options and quality of life. After conferring with the client’s physicians, psychologists, occupational therapists, and the employer, a rehabilitation program is initiated. The rehabilitation program may include mental health or adjustment counseling services; independent living assistance; locating and coordinating services in physical and mental restoration, academic or vocational training, and government services; job analysis or modification; and other services targeted to the individual needs of the individual with a disability. The rehabilitation program may range from a week to several years depending on the nature of the problem and the needs of the client.
- **Areas of Specialization**—Physical Rehabilitation, Mental Health Counseling, Substance Abuse Counseling, Insurance Case Management, Disability Management, Corrections, Vocational Evaluation, Forensic Rehabilitation, Pediatric Rehabilitation, Geriatric Rehabilitation
- **Work Environment**—Rehabilitation counselors are employed at state and federal vocational rehabilitation agencies, rehabilitation centers, mental health programs, employee assistance programs, insurance companies, correctional facilities, private industry, and private practice. The number of counselors switching to private sector practice is increasing.
- **Job Outlook**—The number of rehabilitation counselors employed in Florida in 2016 was 2,864. It is projected that by 2024 there will be 3,129, an annual average growth rate of 1.2 percent. Although this this annual average growth rate of 1.2 percent is lower than Florida’s average for all occupations, the number of people who need rehabilitation services will continue to rise as advances in medical technology continue to save lives and extend lives. Individuals are living longer and new developments in assistive technology increase the possibilities of more innovative rehabilitation strategies.
- **Length of Trainings/ Requirements**—A master’s degree in rehabilitation counseling is required for certification as a rehabilitation counselor. The graduate curriculum covers all aspects of the rehabilitation process, including a counseling practicum and internship. Graduates with a 60-hour master’s degree including specified coursework are also prepared to initiate the process of becoming licensed mental health counselors in Florida.
- **Advancement**—With further experience, rehabilitation counselors can become supervisors or administrators of their agencies. Some enter consultation, research, or college teaching.

- **Licensure/Certification**—Voluntary certification is offered through the Commission on Rehabilitation Counselor Certification (CRCC). Candidates must pass the certification examination and possess at least a master’s degree. Interested candidates should contact the CRCC for further information. Many rehabilitation counselors choose to become licensed mental health counselors in the state of Florida.
- **Salary**—The annual mean wage for rehabilitation counselors employed in Florida in 2015 was \$36,450.
- **Educational Programs**
 - Master’s Degree
 - Barry University
 - Florida Atlantic University
 - Florida International University
 - Florida State University
 - University of Florida
 - University of South Florida
 - Doctoral Degree
 - Florida State University
 - University of Florida
- **Professional Associations**
 - American Rehabilitation Counseling Association
 - International Association of Rehabilitation Professions
 - National Rehabilitation Counseling Association

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 15, 2017.

21-1015 Rehabilitation Counselors. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes211015.htm#st>. Accessed March 15, 2017.

Respiratory Care

- **Description**—Respiratory therapists evaluate, treat and care for patients who have breathing disorders.

Respiratory therapists work under the supervision of physicians to administer prescribed respiratory therapy to patients with chronic illnesses such as asthma or emphysema. They also assist in emergencies such as heart failure, drowning, or shock with life-support treatment is needed.

Respiratory therapists set up, operate, and monitor devices that provide oxygen to medicine in the form of a mist or gas to patients. They use and maintain equipment such as mechanical ventilators, therapeutic gas administration apparatus, and aerosol generators. Respiratory therapists are also responsible for teaching patients about breathing exercises, monitoring patients' physiological responses to therapy, and maintaining natural and artificial airways. They maintain patient records, and may also be responsible for supervision of Respiratory Care Technicians.

Respiratory care personnel must be able to see and hear well, to be on their feet most of the day, and have mechanical ability and manual dexterity to work with machines.

- **Areas of Specialization**—Respiratory therapists can learn additional skills in order to specialize in respiratory care for neonatal pediatric, adult, and geriatric patients. They may also specialize in pulmonary function, education, rehabilitation, home care, asthma education, emergency care, research, or management.
- **Work Environment**—About 90% of respiratory therapists work in hospitals with the department of respiratory care, anesthesiology, emergency medicine or pulmonary medicine. Therapists may assist physicians in clinical settings or operating rooms. Others work in diagnostic centers, extended care facilities, home health agencies, ambulance/transport services, and oxygen and medical equipment rental companies.
- **Job Outlook**—The number of respiratory therapists employed in Florida in 2016 was 8,217. It is projected that by 2024 there will be 9,236, an annual average growth rate of 1.5 percent.
- **Length of Trainings/ Requirements**—The two primary educational pathways are either a two-year associate degree program or four years in a university leading to the baccalaureate degree. The curriculum usually includes core courses in fundamentals of respiratory therapy, anatomy and physiology, cardiopulmonary pathology, pediatric and neonatal respiratory therapy, pharmacology, physiologic monitoring, introduction to psychology, and clinical practicum. Baccalaureate degree programs may grant specific certificates of completion allowing students to apply for the entry level and/or advanced practitioner credentialing exams after completion of the coursework commensurate with the requirements for an associate degree in Florida.
- **Advancement**—With additional education or experience, therapists may advance to supervisory positions, managerial positions, or become academic instructors.

- **Licensure/Certification**—In order to be eligible for a state license, a graduate must earn the Certified Respiratory Therapist title (CRT) from the National Board for Respiratory Care. All graduates from accredited programs are eligible to take the certification exam. Most programs are designed to allow graduates to take the Registered Respiratory Therapist (RRT) exam after passing the CRT exam. Specialty credentials may be earned in Neonatal/Pediatric, Pulmonary Function and Asthma Education. Continuing education hours are required every two years to maintain licensure.
- **Salary**-- The annual mean wage for respiratory therapists employed in Florida in 2015 was \$54,700.
- **Educational Programs**
 - Associate Degree
 - American College for Medical Careers
 - Broward College
 - Concorde Career Institute
 - Daytona State College
 - Eastern Florida State College
 - Florida National University
 - Florida Southwestern State College
 - Florida State College at Jacksonville
 - Gulf Coast State College
 - Hillsborough Community College
 - Indian River State College
 - Keiser University
 - Miami Dade College
 - Palm Beach State College
 - Polk State College
 - Santa Fe College
 - Seminole State College
 - St. Petersburg College
 - St. Johns River State College
 - Tallahassee Community College
 - Valencia College
 - Bachelor's Degree
 - Florida National University
- **Professional Associations**
 - American Association for Respiratory Care
 - Florida Society for Respiratory Care

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 15, 2017.

29-1126 Respiratory Therapists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291126.htm#st>. Accessed March 15, 2017.

Speech-Language Pathologist

- **Description**—Speech-language pathologists identify, evaluate, treat, and counsel persons suffering from speech, language, vocal, and fluency disorders. They may also work with people suffering from oral motor problems which result in problems with eating and swallowing. These disorders may be caused by total or partial hearing loss, brain injury, cerebral palsy, cleft palate, intellectual disability, faulty learning, emotional problems, developmental delay, or language disorders. They can also assist individuals in ameliorating the pronunciation differences related to regional accent or foreign dialect. Since speech and hearing are so interrelated, it is common that patients with these conditions require both speech-language pathologists and audiologists to help them regain their speaking ability.

Speech-language pathologists can use a variety of equipment to diagnose and treat various speech, voice, and swallowing difficulties, such as computers with related software and transducers to analyze speech and breathing irregularities and videostroboscopy to visualize voice and swallowing difficulties. They plan treatment programs according to their diagnosis and consultation with the patient's physician. Other duties include selecting and teaching patients to communicate via devices and techniques, such as gestures, communication boards, voice output communication aids, and sign language. A speech-language pathologist is a counselor, a teacher, and a friend to the client. The work may be tedious and repetitive. Speech-language pathologists should be patient, compassionate, objective, able to use precise listening skills, and keep accurate records of a patient's initial evaluation and progress. Specialized allied health skills are required in many nursing homes, rehabilitation centers, and hospitals.

- **Areas of Specialization**—Speech-language pathologists may specialize in a particular age group, in a certain speech or language disorder, or in feeding and swallowing disorders. Learning to work on an interdisciplinary team is an important specialization skill.
- **Work Environment**—Many speech-language pathologists work in public schools. They may also work in speech, language, and hearing centers, hospitals, rehabilitation centers, home health agencies, nursing homes, universities, and private practice.
- **Job Outlook**—The number of speech-language pathologist employed in Florida in 2016 was 8,026. It is projected that by 2024 there will be 9,676, an annual average growth rate of 2.6 percent.
- **Length of Trainings/ Requirements**—The master's degree program, including 375 hours of clinical practice in speech-language pathology, is the minimum entry-level requirement. The curriculum includes core courses in diagnostic and treatment practices in articulation disorders, fluency, voice/resonance, receptive and expressive language, cognitive and social aspects of communication, hearing, dysphagia, and communication

modalities. All courses examine these topics across the lifespan and with consideration of linguistic and cultural differences.

- **Advancement**—There are doctoral programs for those wishing to go beyond the master’s degree to become teachers and researchers. With additional experience, a speech-language pathologist can become a supervisor to work as a consultant for corporations and health-related or education-related agencies.
- **Licensure/Certification**—Speech-language pathologists in Florida are licensed by the Board of Speech-Language Pathology and Audiology. While completing a master’s degree, the students must complete a least 375 hours of supervised clinical practice, nine-months of professional employment, and one hour of HIV/AIDS education. The student must also pass the national examination. Those with master’s degrees or doctoral degrees may also obtain the Certificate of Clinical Competence (CCC) from the American Speech-Language-Hearing Association or the Fellowship-AAA (F-AAA) offered by the American Academy of Audiology by meeting the licensing requirements and passing a written examination. Continuing education hours are required every two years for license renewal.
- **Salary**—The annual mean wage for speech-language pathologists employed in Florida in 2016 was \$78,790.
- **Educational Programs**
 - Bachelor’s Degree
 - Florida State University
 - Jacksonville University
 - Nova Southeastern University
 - University of Central Florida
 - University of South Florida
 - Master’s Degree
 - Florida Atlantic University
 - Florida International University
 - Florida State University
 - Jacksonville University
 - Nova Southeastern University
 - University of Central Florida
 - University of South Florida
 - Doctor of Philosophy
 - Florida State University
 - University of Central Florida
 - University of Florida
 - University of South Florida
- **Professional Associations**
 - American Speech-Language-Hearing Association

○ Florida Association of Speech-Language Pathology and Audiology

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 15, 2017.

29-1127 Speech-Language Pathologists. U.S. Bureau of Labor Statistics.

<https://www.bls.gov/oes/current/oes291127.htm#st>. Accessed March 15, 2017.

Vision Care

- The importance of vision in our lives is difficult to overestimate- in work, in play, in learning, and perhaps more crucially in the requirements of self-care and daily living. A clear view of our physical surroundings is a powerful asset in every sense. Yet sight is often taken for granted until it becomes obviously impaired. Vision care personnel have assumed a major role in the diagnosis, management, and prevention of eye injury and disease.
- The realization that good vision is essential to our lives is creating more opportunities for vision care professionals. Several fields of study in vision care are available for interested students. Ophthalmologists are physicians who specialize in the diagnosis and treatment of eye injuries and vision disorders. Ophthalmologists may be assisted by ophthalmic technicians or technologists. Optometrists are primary eye care providers who examine eyes, treat eye problems and prescribe medications and corrective devices. They are assisted by optometric assistants and technicians. Opticians fill prescriptions for corrective lenses to the patient's face and eyes.

Ophthalmic Assistant/ Technician/ Technologist

- **Description**—There are three levels of technical personnel in ophthalmology—ophthalmic assistants, ophthalmic technicians, and ophthalmic technologists. They work under the supervision and direction of an ophthalmologist to perform ophthalmic clinical duties.

They are trained to take medical histories, administer eye medications, instruct the patient in care and use of corrective lenses, perform all the ophthalmologic tests necessary for preliminary and highly specific eye exams, assist in ophthalmic surgery, and maintain ophthalmic and surgical instruments, as well as office equipment.

Ophthalmic technologists are trained for additional duties, such as taking ophthalmic photographs, using ultrasound, as well as providing instruction and supervision to other ophthalmic personnel. Ophthalmic technologists are expected to perform at a higher level of expertise than ophthalmic technicians and to exercise considerable clinical technical judgement.
- **Areas of Specialization**—With additional training, an ophthalmic technologist may become an orthoptist specializing in the evaluation and treatment of patients with crossed eyes and related muscle imbalances of the eye. Some programs offer this special emphasis during the second year of the ophthalmic technology training.
- **Work Environment**—Ophthalmic assistants/technicians/technologists are employed primarily by ophthalmologists and may be involved with patients in any setting for which the ophthalmologist is responsible. They may work in medical institutions or private offices.
- **Job Outlook**—An aging population and technological advances in vision care should keep demand steady in Florida.
- **Length of Trainings/ Requirements**—Training is generally six months to one year for ophthalmic assistants, one to two years in length for ophthalmic technicians, and two years for technologists. The curriculum includes courses in anatomy and physiology, history taking, ocular anatomy and physiology, ophthalmic pharmacology, ocular motility and diseases of the eye, diagnostic and treatment procedures, care and maintenance of ophthalmic equipment, ophthalmic surgery procedures, and clinical practicum.
- **Licensure/Certification**—Graduates of accredited programs are eligible to take the national certifying examination at the approved levels. Certification as an ophthalmic assistant/technician/technologist is voluntary and may be obtained from the Joint Commission on Allied Health Personnel in Ophthalmology. Ophthalmic technologists with special orthoptic training qualify for the national certifying exam given by the American Orthoptic Council (AOC). Continuing education hours are required every three years for recertification.
- **Salary**—The annual mean wage for ophthalmic medical technicians employed in Florida in 2015 was \$37,230.

- **Educational Programs**

- Certificate

- Hillsborough Community College

- McFatter Technical College

- Associate in Science

- Florida State College at Jacksonville

- Palm Beach State College

- **Professional Associations**

- American Academy of Ophthalmology

- Association of Technical Personnel in Ophthalmology

- Joint Commission on Allied Health Personnel in Ophthalmology

Resources

29-2057 Ophthalmic Medical Technicians. U.S. Bureau of Labor Statistics.
<https://www.bls.gov/oes/current/oes292057.htm>. Accessed March 21, 2017.

Optician

- **Description**—Opticians make prescription eyeglasses and contact lenses according to the specifications of optometrists or ophthalmologists. There are two kinds of opticians, dispensing opticians and optical laboratory technicians.
- **Areas of Specialization**—Dispensing opticians help patients select the size, color, and shape of their frames then measure the patient’s faces to decide exactly where the lenses should be placed. After the eyeglasses have been made, the dispensing optician measures and adjusts the glasses for proper fit.
Optical laboratory technicians generally work in laboratories that fill orders from dispensing opticians. In general, they grind, polish, measure. Surface, finish, inspect, and mount the lenses into frames, and make sure that the lenses and frames fit properly. An optical laboratory technician is not required to be a licensed optician.
- **Work Environment**—Most dispensing opticians work in stores that sell eyeglasses, while optical laboratory technicians work in laboratories and have limited contact with the public. Retail stores that have laboratories on their premises employ both kinds of opticians. Opticians also work for optometrists or ophthalmologists. Most opticians work 40-hour weeks which may include evenings and weekends.
- **Job Outlook**—The number of dispensing opticians employed in Florida in 2016 was 5,678. It is projected that by 2024 there will be 6,893, an annual average growth rate of 2.7 percent. The number of ophthalmic laboratory technicians employed in Florida in 2016 was 3,155. It is projected that by 2024 there will be 3,574, an annual average growth rate of 1.7 percent.
- **Length of Trainings/ Requirements**—High school graduates can apply to a two-year program at community colleges leading to an associate degree or a one-year certificate program. However, you cannot become a licensed optician through a one-year certificate program. The curriculum may include physical and geometrical optics, anatomy, and physiology of the eye, contact lenses, ophthalmic dispensing procedures, ophthalmic management policy and procedures, introduction to retailing, and clinical practicum. Opticians may also become licensed through an apprenticeship program which consists of 6,240 hours completed within a five-year period.
- **Advancement**—With expertise, dispensing opticians can become managers or open up their own businesses. The optical laboratory technician may advance to a supervisory level.
- **Licensure/Certification**—Opticians must pass the licensure examination administered by the Board of Opticianry before practicing in Florida. Successful completion of the American Board of Opticianry Examiners examination (ABO) and the National Contact Lens Examination (NCLE) is a prerequisite to sitting for the Florida State opticianry licensure examination. Continuing education hours are required every two years for license renewal.

- **Salary**
- The annual mean wage for dispensing opticians employed in Florida in 2015 was \$39,760. The annual mean wage for ophthalmic laboratory technicians employed in Florida in 2015 was \$30,140.
- **Educational Programs**
 - Associate of Science Degree
 - Broward College
 - Hillsborough Community College
 - Miami Dade College
- **Professional Associations**
 - Optical Society of America
 - Opticians Association of America

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 21, 2017.

29-2081 Opticians, Dispensing. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes292081.htm#st>. Accessed March 21, 2017.

51-9083 Ophthalmic Laboratory Technicians. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes519083.htm>. Accessed March 21, 2017.

Optometric Assistant/ Technician

- **Description**—Optometric assistants and optometric technicians perform a variety of tasks to allow the optometric technicians to perform a variety of tasks to allow the optometrists more time to devote to patient care. They often prepare patients for tests. Assistants and technicians may put drops in the patient’s eyes and/or seat the patient at the eye testing machines. They administer eye exercises and treatments to patients under the supervision of the optometrists. In some offices, optometric assistants/technicians help people choose frames for their glasses and adjust them for proper fit. They also do clerical work such as bookkeeping, scheduling appointments, filing, and maintaining medical records.
- **Work Environment**—Most optometric assistants/technicians work in modern, well-lighted offices and laboratories. Some work in health clinics or for government agencies. Still others may be employed by optical instrument companies. Work hours vary, but are usually about 40 hours a week including some evening and Saturday work.
- **Job Outlook**—The employment outlook is excellent, as more optometrists are using assistants/technicians and the demand for eye care is growing.
- **Length of Trainings/ Requirements**—Optometric assistants may be trained on -the-job by optometrists. Formal training programs are one-year certificate programs for both assistants and technicians. Training generally includes visual testing, dispensing, front office skills, lens fabrication, contact lens modification, anatomy and physiology.
- **Advancement**—An assistant technician may learn a specialty by training with an optometrist who specializes in a field of study, such as contact lenses or vision therapy.
- **Licensure/Certification**—Optometric assistants/technicians may take the registration examination offered by the National Paraoptometric Registry. Upon successful completion of the exam, assistants will be granted the title of Registered Optometric Assistants (Opt. A., R.). Technicians will be given the title of Registered Optometric Technician (Opt. T.,R.).
- **Salary**—The average hourly wage of vision care technicians ranged from \$12-\$20 in 2005.
- **Educational Programs**
 - Certificate
 - Hillsborough Community College
 - Manatee Technical Institute
 - Miami Dade
 - William T McFatter Technical Center
 - Associate Degree
 - Hillsborough Community College
 - Miami Dade
- **Professional Associations**

- American Optometric Association
- Florida Optometric Association

Optometrist

- **Description**—Doctors of Optometry (ODs) are independent primary health care providers who examine, diagnose, treat, and manage diseases and disorders of the visual system, the eye and associated structures. They often diagnose related systemic conditions as well.

The optometrist can use drugs and prescribe drugs for diagnosis and treatment of eye diseases in all fifty states and in some foreign countries. Optometrists traditionally prescribe eyeglasses, contact lenses, vision therapy, and low-vision aids for the correction of visual disorders. They employ special tests and instruments to identify and evaluate eye problems and defects in vision, and to identify systemic diseases with eye manifestations or diseases which are life- or sight-threatening severity. An optometrist must have manual dexterity and pay attention to detail.

- **Areas of Specialization**—Most doctors of optometry provide vision care to the general community. Optometrists may specialize in the treatment of children, elderly, or partially-sighted people who must use microscopic or telescopic lenses. Others may concentrate on contact lenses or vision therapy. Some optometrists also do research, teach, or consult.
- **Work Environment**—Most optometrists work in their own offices either alone or in a group practice. However, some may also hold positions at vision care centers or clinics in addition to their private practices. Opportunities for employment also exist in VA hospitals, HMOs (Health maintenance organizations), or in association with retail optical stores. Many work 40 to 50 hours a week and may remain open in the evenings and on Saturdays to accommodate their patients' needs. The work is usually in comfortable surroundings and is not physically demanding. Optometrists who serve in the military or public health service are commissioned as the equivalent of a captain or higher.
- **Job Outlook**—The number of optometrists employed in Florida in 2016 was 2,689. It is projected that by 2024 there will be 3,294, an annual average growth rate of 2.8 percent.
- **Length of Trainings/ Requirements**—The Doctor of Optometry degree requires completion of a four-year professional degree program preceded by at least three years of pre-optometric study at an accelerated college or university. Nova Southeastern University offers a Dual BS/OD degree (see academic advisor). The required classes include English, mathematics, physics, chemistry, and biology. All applicants must also take the Optometry Admissions Test (OAT) and complete an interview to be considered for admission.
- **Advancement**—Optometrists wishing to teach or do research may study for a master's or Ph.D. degree in a related field. Postgraduate clinical residency programs are available for those wishing to specialize in a particular area of eye care.
- **Licensure/Certification**—To practice in Florida, a graduate of an accredited school of optometry must pass the written and clinical exams given by the State Board of

Optometry. Passing parts 1 and 2 of the National Board of Examiners in Optometry is required in order to sit for the Florida state board. Continuing education hours are required annually for license renewal.

- **Salary**—The Bureau of Labor Statistics sites that the annual mean wage of optometrists in Florida in 2015 was \$109,880.
- **Educational Programs**
 - Doctor of Optometry
 - Nova Southeastern University
- **Professional Associations**
 - American Academy of Optometry
 - American Optometric Association
 - Florida Optometric Association

Resources

Employment Projections. EP Employment Projections to 2024 - FloridaJobs.org. <http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>. Accessed March 21, 2017.

29-1041 Optometrists. U.S. Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes291041.htm>. Accessed January 11, 2017.

