

# INFORMATION PACKET

Mills-Peninsula Medical Center  
School of Diagnostic Imaging  
1501 Trousdale Drive  
Burlingame, CA 94010

Dear Applicant,

Thank you for your interest in the Mills-Peninsula Medical Center School of Diagnostic Imaging. Your decision to pursue this educational path can lead to a rewarding career in the field of diagnostic medical imaging. The radiologic technologist is a vital member of the health care team. The successful radiographer has excellent communication skills, is adaptive in challenging situations, sees value in helping others and demonstrates an aptitude for critical thinking.

The Mills-Peninsula Medical Center School of Diagnostic Imaging is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), which is recognized by the U.S. Department of Education and an approved school by the state of California, Department of Public Health, The American Society of Radiologic Technology (ASRT), and the American Registry of Radiologic Technologists (ARRT).

Our school of radiologic technology requires an Associate degree (or higher) and 4 pre-requisite courses in order to apply. Applicants must also have hospital volunteering/shadowing experience. The 24-month hospital-based program is equivalent to the community college based Associate Science degree. We adhere to the guidelines that have been set by our accrediting body. While a typical community college based radiologic program has to cover more generalized AS degree requirements, this program provides a personalized, in-depth and diversified radiologic specific academic training. Instructors are working technologists with extensive experience. Likewise, the required clinical training is more intense, including weekend/evening rotations, as well as surgery, fluoroscopy, trauma, and CT experience. Students completing the Mills-Peninsula Medical Center School of Diagnostic Imaging meet the same qualifications as community college graduates. Students are given a certificate of completion and are eligible to take the ARRT Radiography Examination and the California Fluoroscopy Permit Examination.

Application to the Radiology Program is from January 1 to April 1 each year. The start date for the program is in July. The program accepts six students a year. Our program does not offer a paid internship. All clinical hours are part of the school's curriculum. However, unlike college-based programs, we do not, at this time, charge tuition. Students must pay for their textbooks, uniforms, transportation, and parking.

Our program is structured differently from those offered through the community colleges. The program begins in July — 5 days a week, 8 hours a day. Clinical rotations include weekends and evenings. Students attend classes twelve hours a week and spend twenty-eight hours a week in the clinical setting. Our program is a rigorous, demanding, full-time program which makes outside employment very difficult if not impossible. We strongly discourage students to work but rather concentrate on their studies. Because we are a hospital-based program and not a college-based program, there are no grants, federal assistance, or other types of financial aid available.

I look forward to reserving your spot at our Information Session in February. Please check the website for updates.

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## **Mills-Peninsula Medical Center School of Diagnostic Imaging**

### **Program Description**

The Mills-Peninsula Medical Center School of Diagnostic Imaging is a hospital-based, 24-month (4 Semesters) continuous program that provides didactic and clinical education in Radiography. The program is accredited by the Joint Review Committee on Education in Radiologic Technology\* and approved by the California Department of Public Health, Radiologic Health Branch\*\*.

All clinical and academic education takes place during a forty (40) hours / week schedule for twenty-four (24) months duration. Upon the successful completion of the program, a certificate is awarded by the Mills-Peninsula Medical Center School of Diagnostic Imaging allowing graduates eligibility for the ARRT Radiography Examination and the California Fluoroscopy Permit Examination.

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Chicago, IL 60606-3182  
Phone: (312) 704-5300  
Web: <http://www.jrcert.org>

\*\*California Department of Public Health  
Radiologic Health Branch, MS 7610  
Sacramento, CA 95899-7414  
Phone: (916) 327-5106  
Web: <http://www.dhs.ca.gov/rhb/>

Clinical rotations take place at Peninsula Medical Center Burlingame Campus, an acute inpatient facility and Mills-Peninsula Medical Center San Mateo Campus, an outpatient facility that provides a wide range of services, including surgery, rehabilitation and diagnostics.

### **The Role of the Radiographer**

The radiologic technologist (radiographer) plays an extremely important role working closely with the Radiologist (physician) to produce high-quality images that are crucial to proper diagnosis and treatment. Obtaining high-quality diagnostic images requires conscientious selection of exposure factors, accurate positioning of anatomy and diligent application of safety measures to protect the patient and others in close proximity from the potentially harmful effects of ionizing radiation.

The field of radiologic technology offers a number of employment opportunities including hospitals, education, administration, physician's offices, imaging centers and commercial representatives.

Graduates can also work in more than a dozen subspecialties such as computed tomography (CT), cardiac catheterization, and mammography. With additional education and training, graduates can work in areas like magnetic resonance imaging (MRI), ultrasound, nuclear medicine, and radiation therapy.

### **Mission Statement**

The mission of the Mills-Peninsula Medical Center School of Diagnostic Imaging is to provide the community with competent and qualified imaging practitioners, who through an outstanding quality education in the Radiologic Sciences will possess

high ethical standards and will deliver excellent service and care with compassion and respect.

### **Program Goals and Student Learning Outcomes**

#### **1. Students will be clinically competent.**

This goal is attained through comprehensive clinical and didactic curricula that prepare the student to successfully perform all diagnostic, fluoroscopic and mobile/surgical procedures.

##### **Student learning outcomes:**

- Students will master entry-level skills in positioning.
- Students employ safe radiation practices on patients, self and others.
- Students select appropriate technical factors for radiographic exams.

#### **2. Students will demonstrate effective communication skills.**

This goal is attained through coursework and clinical rotations including diagnostic, mobile, surgical, and CT imaging that is designed to provide the student with skills necessary to perform in all types of clinical settings.

##### **Student learning outcomes:**

- Students will communicate using professional language with patients, visitors, physicians and staff.
- Students will listen without judgment to patients, visitors, physicians and staff.
- Students will accurately obtain patient histories.

#### **3. Students will develop critical thinking skills.**

This goal is attained through coursework and clinical rotations including diagnostic, mobile, surgical, and CT imaging that is designed to provide the student with skills necessary to perform in all types of clinical settings.

##### **Student learning outcomes:**

- Students will modify standard procedures for non-routine exams.
- Students will adapt patient care skills for the injured or critically ill patient.
- Students will adjust technical factors for pathology and non-routine procedures.

#### **4. Students will model professionalism.**

This goal is attained with the guidance of staff radiographers, clinical instructors, radiologists, and other members of the health care team, who motivate and encourage our students.

##### **Student learning goals:**

- Students will maintain calm composure at all times.
- Students will treat patients, visitors, physicians, and staff with kindness and respect.

- Students will stay compliant with all mandatory health and safety training.

### **Application Overview**

Application to the Mills-Peninsula Medical School of Diagnostic Imaging is from January 1 through April 1 each year.

### **Prerequisite Requirements**

In January 1, 2015, ARRT began requiring all candidates eligible for ARRT certification in radiologic technology, must have a minimum of an associate degree. To be in compliance with the educational standards established by the American Society of Radiologic Technologists (ASRT), **all applicants to the Mills-Peninsula Medical Center School of Diagnostic Imaging must have an Associate Degree or higher.** The degree need not be in the radiologic sciences. The idea is that the general education courses in an associate degree curriculum – with their emphasis on communication skills, quantitative skills, general technology, and human behavior – provide the background radiologic technologists need in the rapidly changing workplace.

Many colleges differ in terminology regarding course name and number; however, course descriptions and curriculum share similar components. The following information is provided to assist applicants in selecting college level courses that will fulfill our prerequisite courses.

**Prerequisite Courses**- all pre-requisites must be completed within the past 7 years and if repeated, must be completed prior to application submission.

**Human Anatomy & Physiology** To fulfill the Mills-Peninsula Medical Center School of Diagnostic Imaging prerequisite, Anatomy and Physiology must cover **all** major body systems. Anatomy & Physiology may be taken as separate courses with labs or as a combined course. Colleges may offer combined Anatomy & Physiology courses in two or three continuous semesters or quarters. All courses must be completed to fulfill the requirement.

**\*\*Intermediate Algebra**, however, higher level math courses are accepted. Intermediate Algebra must include the following mathematical components: the real numbering system, solving and graphing linear equations and inequalities, polynomials, exponents and radicals, quadratic equations; second-degree equations and inequalities, functions, conic sections, systems of equations, and exponential and logarithmic functions.

**Introduction to Computers and Information Science or an Equivalent** This course is an introduction to computer systems and software applications. It covers **computer terminology, hardware and software**, networks, common operating systems, data representation, telecommunications, Internet access and security issues, computer ethics, and beginning programming. The course may also cover topics motivated by current issues and events; examines such issues as privacy, intellectual property, and copyright infringements.

**General Physics** This course focuses on the areas of mechanics, heat and sound, electricity, magnetism, and optics. Some colleges offer several physics courses. We will accept a basic conceptual almost non-mathematical introduction to physics (Conceptual Physics). Topics covered include the following: mechanics; properties of matter; thermodynamics; vibrations and waves; electricity and magnetism and modern physics.

**An overall grade point average (GPA) of 2.5 is required in all prerequisite courses.** Patterns of withdrawal, repetition of prerequisite courses, academic probation, etc., will be considered in assigning admission priority. Grades lower than "C" are not acceptable. An overall grade point average (GPA) of 2.0 is required of all other college courses.

Students who have completed courses with a recency of longer than 7-years, or who have work-experience with extensive use/knowledge in the mathematics and/or computers, may take a Math Test-Out Exam or a Computers Test-Out Exam in-lieu of the pre-requisite course. The percentage grade of the Test-Out exam will be factored into the prerequisite GPA. The student may only take the Test-Out exam once. Email the program director at [Cynthia.Payne@sutterhealth.org](mailto:Cynthia.Payne@sutterhealth.org) to inquire about the Test-Out.

### **Volunteer Requirement**

**Note: Volunteer requirements may be waived if regulatory and or public health issues restrict or limit entry to health care facilities.**

In addition to the above courses, applicants must have completed at least 80-hours of officially documented volunteer service or possess previous work experience in a **health care facility**. The purpose of the 80-hour volunteer requirement is to expose the prospective applicant to the duties, tasks, skill requirements, and expectations of an allied health care worker. The experience should be completed in a continuous 6 month period, no more than 7 years prior to applying, and all applicants must complete and submit the official forms contained in this packet or form provided by the facility. It is the philosophy of Mills-Peninsula Medical Center School of Diagnostic Imaging Program Director, Clinical Instructors, Faculty Members, and Advisory Committee that the applicants who complete this requirement will be better prepared to complete the Radiography Program as well as obtain a meaningful career upon graduation from the program.

In order for the volunteer requirement experience to be meaningful, the following guidelines are recommended:

- The experience must provide the prospective applicant contact with both patients and health care workers. Volunteer activities may include observing / assisting in a health care institution in the fields of nursing, radiology, and physical therapy.
- The experience must total a minimum of 80-hours.

- The volunteer experience may take place at a variety of health care facilities including: hospitals, clinics, convalescent hospital, and home health care.
- The experience should be completed in a continuous 6 month period, no more than 7 years prior to applying.

The prospective applicant should contact the Volunteer Services department of a facility of their choice that is convenient to them. The Mills-Peninsula Medical Center School of Diagnostic Imaging is not responsible for placing prospective applicants at their respective sites to fulfill this requirement. It is the applicant's responsibility to contact the site, schedule the hours and complete the requirement.

### **Admission Policy**

In order to be considered for admission to the program, an applicant must:

- Possess an Associate's Degree or higher
- Complete the following by the established deadline:
  - Program application form
  - Submit official college transcripts (no copies will be accepted). Transcripts may be sent directly to the Program Director or included (in a sealed envelope) along with the Program application
  - Two letters of recommendation
  - Letter of intent (written by the applicant).

Mills-Peninsula Medical Center School of Diagnostic Imaging has neither the resources nor the expertise to evaluate academic transcripts for students who have attended academic institutions outside the United States. All foreign transcripts and degrees must be evaluated and translated (English) into equivalent college hours of credit including grade point average (GPA). This evaluation must be attached in a sealed envelope. The prospective student should contact one of the credential evaluation services listed on either website, [www.ACIE.com](http://www.ACIE.com) or [www.NACES.com](http://www.NACES.com) to have their international degree evaluated.

The letters of recommendation should describe your positive personal attributes and relevant work history. Ideally, these letters should be written by a supervisor or an individual who can describe your personal strengths and talents. These letters should not be written by close personal friends, but rather an individual who can attest to your work ethics, leadership qualities, sense of responsibility, reliability, and ability to adapt to new situations. Letters of recommendation must be current (within the last 6 months) signed and dated. Copies will not be accepted.

Letter of Intent (written essay) is mandatory. Applicants are asked to submit an essay (no more than 2 typed pages) detailing:

- Reasons for applying to the program
- Personal attributes that would contribute to the applicant's success in the program
- Pertinent work or volunteer experience

- Explain all patterns of withdrawals, course repeats or failures on your transcripts.

Any application on file that has not been completed by the established deadline will not be considered. Application instructions must be followed carefully in order for your application to be considered.

The American Registry of Radiologic Technologists (ARRT) requires disclosure of all misdemeanor and felony convictions for all certification applicants. Persons considering enrollment in the Radiology Program may contact the ARRT in advance of considering these programs to learn whether a previous conviction will prevent certification to practice radiology. Please refer to the ARRT website: [www.arrt.org](http://www.arrt.org).

Completing the application correctly, obtaining supporting documents and assuring their arrival by the deadline date are the responsibilities of the applicant.

Completion of the Admission Requirements does not guarantee admission into this highly competitive program. Selection is based upon courses and grades in the applicant's transcripts, letter of intent, and reference letters. An interview process for the top candidates will be conducted.

Following the deadline, all applications are reviewed by the Admissions Committee of the program, which consists of the Program Director, Assistant to the Program Director, Clinical Coordinator, and 2 Clinical Instructors. Those applicants who meet published admission standards are evaluated in terms of academic potential. The committee selects the top fifteen qualified applicants for an interview based on selective admission criteria. Six candidates are offered admission into the Program. The interview is conducted to evaluate motivation, realistic orientation to the discipline, the ability to work cooperatively with others and to learn from supervised experiences. Selected applicants are interviewed and evaluated on the following criteria: appearance, professional behavior, communications skills, interest, attitude, and overall impression.

Applicants selected for an interview will be contacted by email. Making it to the interview process does not guarantee admission into the program.

Applicants who have been selected as students are notified in writing by May 31. A physical examination is required for each student after selection for the program. Final acceptance is contingent upon successful completion of the physical examination, background check, proof of medical insurance and meeting the ARRT Standards of Ethics requirements.

### **Application Checklist**

Before mailing the application packet, please ensure that all of the following are enclosed:

- Current, signed, and dated application. All fields should be completed.
- Two current letters of recommendation signed and dated within **6 months** of the application date.
- Letter of intent

- Official, sealed transcripts. **Note: All prerequisite courses must be completed prior to submitting an application.**

Applications may be sent by mail or hand delivered to the Radiology Department at Peninsula Medical Center. Applications will not be accepted after the April 1 deadline. If April 1 should fall on a Saturday or Sunday, the deadline shall be extended to the Monday following the weekend.

### **Student Services**

The following amenities are provided to students at no charge:

- Background check
- Pre-enrollment physical exam
- Annual TB testing
- Annual flu shots
- Hepatitis B vaccination
- Varicella vaccination
- Respirator mask fit testing
- Liability insurance
- Lockers for personal belongings
- Access to the hospital Medical Library
- Internet access within the classroom for educational purposes
- Internet portal allowing access to course syllabi, assignments and grades
- Parking at Peninsula Medical Center
- Free shuttle service to the San Mateo Campus
- 1<sup>st</sup> set of student radiographic markers
- Inclusion in hospital-wide events

### **Health Insurance**

The student is responsible for their own personal health coverage, and must provide proof while in the Program. The Program shall have no obligation to furnish medical or surgical care to any student. Students will be financially responsible for all such care rendered in the same manner as any other patient. If a student is injured while in school, the Program will provide medical treatment for the injury or exposure.

### **Housing**

Mills-Peninsula Medical Center offers no housing facilities for students attending any of the programs sponsored by or affiliated with the hospital.

### **Outside Employment**

Employment outside the school is permitted as long as school scheduling takes priority. The school will not alter students' schedules to accommodate outside work schedules. Students are expected to regard their education as top priority and to be present for assigned schedules regardless of outside employment.

### **Financial Aid**

Mills-Peninsula Medical Center School of Diagnostic Imaging does not sponsor financial assistance programs. Arrangements for financial assistance are solely the responsibility of the student. Students are encouraged to apply for various

scholarships while enrolled in the Program, including, but not limited to: ASRT scholarships, and CSRT scholarships.

### **Transfer and Advanced Placement Policy**

The School of Diagnostic Imaging does not accept transfer, part-time, or advanced placement students.

### **Tuition and Fees**

At this time there is no tuition for the radiology program. Tuition and fees are reviewed each year and are subject to change for the following class. Students are responsible for certain fees, to include uniforms, textbooks, clinical fees, etc. A more comprehensive list of fees will be provided during the interview process. Students are required to purchase certain textbooks directly from the publisher in order for the School to retain publisher materials. In addition, students will travel to the MPMC San Mateo Campus and must pay for parking.

### **Nondiscrimination Policy**

The leadership of Mills-Peninsula Medical Center is committed to equal employment and educational opportunities. No person, on the basis of race, color, creed, religion, marital status, sex, sexual orientation, gender identity, ancestry, national origin, age, medical condition, disability or status as a veteran or disabled veteran unrelated to program performance requirements will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination in the administration of any educational program or activity, including admission thereto. Similarly, this institution does not discriminate in employment on the basis of color, race, creed, religion, marital status, sex, sexual orientation, gender identity, ancestry, national origin, age, medical condition, disability or status as a veteran or a disabled veteran unrelated to job performance, and it complies with the Age Discrimination in Employment Act of 1967, as amended, and with the Vietnam Era Veterans' Readjustment Act of 1984. The commitment to equal opportunity applies to all aspects of recruitment, employment and education of individuals at all levels throughout the institution.

### **Essential Functions**

In accordance with the Americans with Disabilities ACT (ADA), the Mills-Peninsula Medical Center School of Diagnostic Imaging makes every effort to make reasonable accommodations to any qualified individual with a disability. The program will not discriminate against any individual because of race, color, creed, religion, marital status, sex, sexual orientation, gender identity, ancestry, national origin, age, medical condition, disability or status as a veteran or a disabled veteran.

### **Physical Requirements**

In order to ensure the safety and welfare of students and patients, the Radiologic Technology student must be able to:

- Stand and/or walk in an erect posture for up to eight hours per day.
- Lift a minimum of 35 pounds from floor level to waist level and lift a minimum of 10 pounds from waist level to shoulder level.
- Carry a minimum of 20 pounds directly on arms or hands while walking a distance of 100 feet.

- Bend or flex the upper trunk forward up to 45 degrees and flex the lower torso into a squatting position.
- Rotate the upper trunk, up to 30 degrees to the right or left, from the neutral position, while standing or sitting.
- Reach a maximum of 72" above floor level and/or a full arm's reach.
- Push and/or pull objects and equipment weighing up to 250 pounds.
- Manipulate radiographic and medical equipment and accessories.
- Utilize the sense of hearing and/or lip reading to effectively communicate with the patient or health care team.
- Utilize the sense of vision in all levels of the radiology department or hospital lighting, which varies from low-levels of illumination to bright light levels.

### **Non-Physical Demands**

- Respond quickly and appropriately to emergency situations using the English language.
- Communicate with patients and staff at all times using the English language.
- Tolerate strong, unpleasant odors.
- Handle stressful situations related to technical and procedural standards and patient care situations.
- Provide physical and emotional support to the patients during radiographic procedures.
- May be exposed to infectious and contagious diseases, subject to electrical and radiant energy hazards and may come in contact with patient body fluids or wastes.

### **Didactic Curriculum** – Approximately 879 hours

Didactic courses are taught by a staff of qualified instructors including the program director, assistant program director, clinical instructors, certified radiologic technologists, radiology nurses, and a variety of guest speakers. Refer to the didactic syllabi for course titles, hours, instructors and course descriptions for additional information.

First year students attend lecture classes Tuesday, Wednesday and Thursday mornings. Second year students attend lecture classes Tuesday, Wednesday and Thursday afternoons.

The initial weeks of the program are designed to orient new student radiographers to the field of radiologic technology. This orientation also includes the hospital environment as a whole, medical ethics including patient care techniques, confidentiality, and medical terminology.

The curriculum is designed to coordinate the didactic and clinical portions of education in a manner that delivers optimum instruction to student radiographers. In this manner, the classroom instruction supports and coincides with the clinical progression of students.

The program operates on a Semester system with completion of the program after four (4) consecutive Semesters.

Semester I	July 5	-	December 31
Semester II	January 1	-	June 30
Semester III	July 1	-	December 31
Semester IV	January 1	-	June 30

Course objectives and outlines are handed out at the beginning of each course and are included in the Didactic Course Description portion of the Student Handbook.

### **Didactic Course Descriptions for First-Year Courses**

#### **Introduction to Radiologic Technology and Lab**

The first two-weeks of the program are designed to introduce the new student to the field of radiologic technology including the hospital and radiology departments.

Topics will include:

- Hospital policies and organization
- Cultural diversity
- Interpersonal communications
- Medical ethics and professionalism
- Introduction to patient care
- Medicolegal considerations
- Organization and operation of the radiology department
- Radiation safety and protective measures
- Allied health professions
- Certification and licensing
- The American Registry of Radiologic Technologists
- The Joint Review Committee on Education in Radiologic Technology
- Professional development and career advancement
- Introduction to medical terminology
- Introduction to radiographic procedures
- Introduction to infection control
- Critical thinking skills
- Introduction to imaging equipment
- Introduction to radiographic positioning
- MPHS Standards of Care

#### **Medical Terminology**

This course is designed to give students a basic background in medical terminology and pathological terms related to specific body systems. The prefixes, roots, and suffixes of commonly used medical words are presented. The course uses lectures, discussions, demonstrations, student presentations, and independent study to

develop knowledge and understanding of the professional language of medicine to communicate effectively with other members of the medical profession.

### **Patient Care and Lab (Part 1)**

The primary purpose of this course is to introduce the student radiographer to the patient care techniques used in the general care of the patient with the emphasis on the role of the radiographer. Incorporated in the course, the student will become familiar with the following subjects:

- Communication skills
- Body mechanics
- Evaluation of patient needs
- Infection control
- Medical/surgical asepsis
- Emergency medications
- Contrast media reactions
- Patient preparation for radiographic examinations

### **Patient Care (Part 2) Pediatric and Geriatric Radiology and Lab**

This course involves the psychological, physical and emotional aspects of pediatric and geriatric radiography. The course is designed to familiarize the student with age specific characteristics from the neonate to the geriatric patient. In part one, Pediatrics, topics that are covered include:

- The Bill of Rights for Children and Teens
- Approaching patients with special needs
- Suspected child abuse

The student is familiarized with the newborn nursery with instruction by the course instructor and nursery staff to aid in performing portable examinations. Course emphasis is placed on the following topics:

- Equipment
- Immobilization techniques
- Surgical aspects of pediatrics
- Technical factors
- Radiation protection
- Specialized studies unique to the pediatric patient.

In part two, Geriatrics, the student is familiarized with the specific problems of the aging. Topics that are covered include:

- Demographics and social effects of aging
- Physical, cognitive, and psychological effect of aging
- Patient care of the elderly.

### **Anatomy I**

This course is designed to present a basic review of the different body systems and the basic principles associated with the structure and function of the human body to include pathologic presentation on imaging.

### **Radiographic Science I: Image Production and Evaluation and Lab**

This course is designed to establish a basic knowledge of atomic structure and terminology. Also presented are the nature and characteristics of ionizing radiation, x-ray production and the fundamentals of photon interactions with matter. It is also designed to establish a knowledge base in factors that govern and influence the production and recording of radiologic images. Digital imaging with related accessories will be emphasized. Class demonstrations and labs are used to demonstrate application of theory.

### **Fluoroscopic and Genitourinary Procedures and Lab**

The primary objective of this course is to teach the student routine diagnostic fluoroscopic procedures and special fluoroscopic procedures performed in the Radiology Department as well as the theories, concepts, and factors that influence the employment of fluoroscopic examinations and the equipment utilized. Specific radiographic positioning, aspects of patient care and nursing skills essential to these procedures will be discussed. Additional topics covered will include contrast materials, radiation protection, image intensification, fluoroscopic imaging and recording devices. The course incorporates lectures, demonstrations, and positioning practicums to meet the objectives of the course.

### **Radiographic Physics and Lab**

The student is introduced to the fundamentals of electrical and radiation physics and the basic principles underlying the operation of x-ray equipment including:

- Structure of matter
- Electrodynamics
- Generators/motors
- Physical concepts of energy
- Static electricity
- Electromagnetism / Magnetism
- X-ray tubes and circuits

Lectures, demonstrations, lab experiments, and a field trip are used to teach these principles. In addition, the student will prepare a 5–6 page independently researched paper on a principle of physics that was observed during the field trip and describe how that principle relates to x-ray physics.

### **Radiation Biology / Radiation Protection**

Content is designed to provide an overview of the principles of the interaction of ionizing radiation with living systems and the effect of it on the body (molecules, cells, tissues and organs). Factors affecting biological response are presented including acute and chronic effects of ionizing radiation. In addition, an overview of the principles of radiation protection including the responsibilities of the radiographer for patients, self and the general public will be covered. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies, and health care organizations are incorporated. Lecture, demonstrations, and student presentations will be utilized in the course.

### **Radiographic Procedures I: Skeletal Positioning and Lab**

This course is designed to introduce the student to radiographic positioning, primarily of the skeletal system. Course time will incorporate lectures, demonstrations, image analysis as well as positioning practicums where the student will have the opportunity to demonstrate necessary positioning skills, equipment manipulation, radiation protection, and selection of technical factors. These skills are important in preparing the student in achieving didactic and clinical competency.

## **Didactic Course Descriptions for Second-Year Courses**

### **Radiographic Science II: Image Production and Evaluation and Lab**

With the knowledge the student has gained from the first segment of the course (Radiographic Science I), the student will continue sequencing the topics from the production of x-rays through to the final radiographic image. Part I of this course will focus on Digital Radiography/PACS. Content is designed to impart an understanding of the components, principles and operation of digital imaging systems found in diagnostic radiology. Factors that impact image acquisition, display, archiving and retrieval are discussed. Guidelines for selecting exposure factors and evaluating images within a digital system assist students in the application of knowledge. Principles of digital system quality assurance and maintenance are presented. Lecture, laboratory assignments, and discussions will be the methods used for instruction.

### **Anatomy II**

#### **Section I: Neuroanatomy**

This course is designed to provide the student with an advanced understanding of the bony calvarium, central nervous system, peripheral nervous system and the sensory organs. Lecture and reading assignments will be used as methods of instruction.

#### **Section II: Cross-Sectional Anatomy**

This course is designed to familiarize the student with the sectional anatomy and pathology as seen with multiple imaging modalities. The student will be able to utilize this information and apply it to imaging modalities such as CT and MRI. Lecture, image analysis, and reading assignments will be included as methods of instruction.

### **Principles of Computed Tomography**

This course begins with an introduction to computer literacy, digital imaging, computers in radiology, and the historical developments of computed tomography. The student is instructed on the theory, operation and application of computed tomography. Examination protocols, radiation dosimetry, contrast media preparation, image manipulation, image storage and archiving, and patient care procedures will be discussed.

### **Radiographic Procedures II: Positioning of the Spinal Column and Headwork and Lab**

In Part One, Positioning of the Spinal Column, students are instructed in the anatomy and pathology of the spinal column. This course also covers trauma and routine radiographic examinations of the spinal column. In Part Two, Headwork, students are instructed in the anatomy and positioning of the cranium and facial

bones. This course covers trauma and routine radiographic examinations of the facial bones and cranium and how to perform them. Topics that will be covered include: positioning, technical factor selection, anatomy, and care of trauma patients. Lectures, demonstrations, image analysis, and laboratory practicums will be the methods of instruction used.

### **Radiation Protection and Fluoroscopy Review**

This course is designed to teach the student the principles of image intensification, recording devices, appropriate radiation protection, state regulations pertaining to the conduct of fluoroscopic examinations, anatomy and physiology of the eye, illumination and photometry, quality control and assurance testing of equipment, and biological effects of ionizing radiation. Lecture and laboratory experiments will be used as methods of instruction.

### **Venipuncture**

Course content is designed to meet the requirements of California Health and Safety Code Section 106985 for the radiologic technologist in venipuncture and administration of contrast materials in the upper extremity. The course consists of 10 hours of instruction in the following areas:

- Anatomy and physiology of venipuncture sites.
- Venipuncture instruments, intravenous solutions, and related equipment.
- Puncture techniques.
- Techniques of intravenous line establishment.
- Hazards and complications of venipuncture.
- Post-puncture care.
- Composition and purpose of antianaphylaxis tray.
- First aid and basic cardiopulmonary resuscitation.
- Types of contrast media
- Allergic reactions
- Patient care
- Informed consent

Students must perform 2 supervised venipuncture sticks during the 10-hour course with the completion of a total of 10 venipunctures. All venipunctures must be done with direct supervision by either a radiologist or a radiology nurse. Upon completion of 10 supervised venipuncture sticks, students will be awarded a certificate of completion.

### **Registry Seminars & Independent Study**

This course enables the student to direct study efforts toward exam related material prior to taking the registry examination. The following coursework will be reviewed: Patient Care, Safety, Image Production, and Procedures.

Discussion, review and mock examinations will be used to help prepare the student for the registry examination.

The independent study assignment is designed to develop the critical thinking skills of the student radiographer—the ability to perceive, gather, organize, analyze, and present information in a well-written, concise research paper. The student will select a topic relating to the field of radiology and medical imaging.

### **Clinical Course Description – (Approximately 2688 hours)**

Student radiographers spend 8 hours Monday and Friday and 4 hours Tuesday, Wednesday, and Thursday in a clinical rotation. Each clinical rotation lasts for a period of 2 weeks. There are several different clinical rotations. As a student finishes one 2-week rotation, they move on to the next rotation until the cycle begins again. Occasional weekend rotations are assigned for first and second year students.

#### **First year clinical rotations include the following:**

Diagnostic radiography

Fluoroscopic radiography

Mobile and surgical radiography (2<sup>nd</sup> semester)

This course is designed to familiarize the student with the various mobile (portable) radiographic units that are used. The use of each unit involving positioning and technical skills required for bedside and surgical radiography is taught. Students will be introduced to the many different types of tubes/catheters that are used for treatment and their proper placement in the body. Also included in this course is the use of digital fluoroscopic C-arm units including set-up, recording the image, image manipulation, and photography. The student will also be instructed on the use of the automatic contrast injector. The student will learn proper surgical attire, sterile technique, and sterile fields. Direct demonstration and practice by the student will be used.

#### **Second year clinical rotations include the following:**

Diagnostic radiography

Fluoroscopic radiography

Mobile and surgical radiography

Special procedures (vascular / interventional radiography)

CT scanning

Clinical objectives are included in the Clinical Course Description portion of the Student Handbook.

### **Methods of Evaluation**

Periodically a student's academic and clinical performance must be evaluated to determine if the student is performing satisfactorily. A combination of the following evaluation tools may be used to measure a student's performance:

Oral and written examinations

Clinical practicums

Clinical competency evaluations

Clinical rotation evaluations

End of Semester performance evaluation (done by the Clinical Preceptors)

End of Semester evaluation—didactic and clinical (done by the Program Director and Clinical Coordinator)

Evaluations are reviewed and recorded and become a part of the student's portfolio.

### **Introduction to Clinical Education**

The overall guideline for all clinical education rules is that the student is expected to conduct himself/herself in a professional and ethical manner at all times. These rules simply indicate the exact elements of professional behavior and conduct for the Mills-Peninsula Medical Center Radiography Student.

During the two (2) years of the program, the student experiences two major clinical rotations locations: Mills-Peninsula Medical Center Burlingame Campus and the San Mateo Campus. Clinical and classroom schedules are as follows:

Clinical – 28 hours / week  
Didactic – 12 hours / week

Semester I	July 5	-	December 31
Semester II	January 1	-	June 30
Semester III	July 1	-	December 31
Semester IV	January 1	-	June 30

### **Evening and Weekend Clinical Rotations**

To provide a complete course of study in the field of Radiologic Technology, the student's clinical schedule includes clinical rotation during the evening and every sixth weekend. Clinical hours for the evening rotation are 10:30 a.m. – 7:00 p.m. (second year). The clinical rotation hours for weekends are 7:30 a.m. - 4:00 p.m. and 08:45a.m. – 5:15 p.m. The radiographer in charge will be responsible for the supervision of the student. The purposes of weekend and evening rotations are to:

- Give the student the opportunity to observe and participate in emergency and trauma examinations that do not routinely occur during normal weekday rotations.
- Demonstrate the differences in technical responsibilities between daytime, weekend and evenings.
- Allow the student to perform general radiographic procedures under indirect supervision in order to utilize critical thinking skills, thereby encouraging the student to make technical and positioning judgments, especially in non-routine situations.
- Provide the additional skeletal, surgical, and mobile examinations that are necessary to meet the program's competency requirements.

Students' total weekend and evening clinical clock hours shall not exceed 25% of the total clinical hours. Example: Total clinical education hours are approximately **2688**. Currently students spend less than **260** hours of their total clinical education in evening and weekend clinical assignments.

### **Vacation and Holiday Policies**

#### **Spring vacation (Didactic Break)**

Students are not scheduled for academic classes during the 1<sup>st</sup> week of October. Students are still scheduled for clinical rotations during this time.

**Winter vacation (Didactic and Clinical Break)**

Students are not scheduled for academic classes or clinical rotations from the last day of the Fall Semester until the start of the Spring semester.

**Spring vacation (Didactic Break)**

Students are not scheduled for academic classes during the last week of March. Students are still scheduled for clinical rotations during this time.

**Holidays**

Students are given holidays throughout their education. Students are not scheduled for academic classes or clinical rotations on holidays. The current list of holidays includes:

- |                               |                  |
|-------------------------------|------------------|
| New Year’s Day                | Independence Day |
| Martin Luther King’s Birthday | Labor Day        |
| Presidents’ Day               | Thanksgiving Day |
| Memorial Day                  | Christmas Day    |

Students are given 5 sick/personal days a year. Unused days are not carried over to the next year. Any additional clinical time off is to be made-up after graduation.

**Criteria for Successful Program Completion**

All students will complete the didactic courses in the curriculum set forth by the program in sequence and with final course grades of 75% or higher.

**Scoring Rubric for Interview Selection of Qualified Applicants**

The first step in the selection process is determining who will be interviewed. The criteria in the table below objectively ranks the top 15 students selected for an interview. Being selected for an interview does not guarantee acceptance into the program.

<b>Scoring Rubric</b>	<b>Points Assigned</b>	<b>Applicant #1</b>	<b>Applicant #2</b>
Prerequisite GPA	<i>(Actual GPA) x 2</i>	3.8 x 2	3.5 x 2
Associate Degree (required)	1	1	1
Withdrawal or F grades	<i>Actual # (0, -1, -2, etc.)</i>	0	-1
80 Volunteer Hours	1	1	0
Over 100 Volunteer Hours	1.5	0	1.5
Actual Work Experience (Priority given to patient-care work experience and work longevity)	1-3	1	3
Sutter Employee (any affiliate)	1	0	1
1 <sup>st</sup> time qualified applicant	0	0	0
2 <sup>nd</sup> time qualified applicant	1	0	0
3 <sup>rd</sup> time qualified applicant	2	0	2

<b>OVERALL TOTAL SCORE</b>		<b>10.6</b>	<b>14.5</b>
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\*The applicant may include an explanation for multiple withdrawals/F grades on transcripts if there was a significant life event.

As you can see by comparing the two applicants, the overall total score varies based on GPA, withdrawals and/or F grades, volunteer hours vs. work experience, and number of times applying to the program. These scores are used to rank applicants to determine who will be selected for an interview.

The interview portion of the selection process is very similar to the interview process for a job interview. The interview committee is comprised of the program director, clinical coordinator and three other instructors for the program. All applicants are asked the same questions by an interview committee. The letter of intent and letters of recommendation are reviewed during this process. The committee evaluates each applicant's response to the following eight questions. A 10-point Likert score is utilized to rank responses from weak (1), acceptable (5), strong (7), to outstanding to exceed expectations (10).

- Motivation – programs applied to, research done
- Past Experiences – clinical and work experience
- Understanding of the Position – commitment required, support network (family, friends, etc.), and rigorous didactic curriculum
- Strengths & Weaknesses
- Partnerships/Relationships – ability to work with diverse staff
- Influencing/Execution Skills – patient care, extremely ill patients, resolving conflict
- Personal Fit/Style – poise, professionalism, and manner
- Future Plan – long term goals if not accepted, etc.