



UCSF Cardiac Sonography Program

**Catalog & Student Handbook
2026-2027**

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The Catalog and Student Handbook for the UCSF Cardiac Sonography program is current as of the publication date on the cover. It may be necessary to make changes to this document due to the requirements and standards of the program's accrediting body, state agencies, or the U.S. Department of Education. UCSF Cardiac Sonography program reserves the right to make changes at any time to any provision of this document, including the amount of tuition and fees, academic programs and courses, school policies and procedures, faculty and administrative staff, the school calendar and other dates, and other provisions.

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About the UCSF Cardiac Sonography Program

A Message from the UCSF Cardiac Sonography Program Medical Director, Dr. Theodore (“Ted”) Abraham



“With great pleasure, I welcome you as a student to the UCSF Cardiac Sonography program. The field of cardiology is growing exponentially, so we developed this hospital-based program to serve the needs of our hospital system and, most importantly, the community. We are pleased you have chosen our program to further your career and look forward to providing you with an outstanding educational experience.”

Theodore Abraham, MD, FACC, FASE
Medical Director, UCSF Cardiac Sonography Program
Co-director, UCSF HCM Center of Excellence
Director, UCSF Adult Cardiac Echocardiography Laboratory

Mission Statement

The UCSF Cardiac Sonography Program is a provider of quality, competency-based instruction. We are committed to the education of the total professional, using hands-on curriculum in a student-centered environment to prepare learners to become successful in a competitive world. The program upholds and maintains the vision to provide the best health care services and adheres to the PRIDE values of professionalism, respect, integrity, diversity and excellence in alignment with UCSF Health.

Program Description

The Cardiac Sonography program is a *non-degree granting, certificate-level* program. The program begins in the fall and is three semesters long - the curriculum consists of a sequence of didactic, hands-on laboratory, and clinical practicum.

Program Goals & Objectives

The goals and objectives of the Cardiac Sonography program are “To prepare competent entry-level cardiac sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains for the Adult Echocardiography profession.” The student should have developed the minimum knowledge and competencies to sit for registry exams in their respective field of study. In addition, the student will have the opportunity to learn to work effectively with other allied healthcare professionals, patients, and families to promote patient safety, diagnosis, and recovery.

Professionalism

An important goal of the UCSF Cardiac Sonography program is to assist each student in preparing themselves to be successful in the work environment on a personal and professional level. The program expects all students, staff and faculty to behave in a professional and appropriate manner that supports an environment that more fully simulates the workplace.

Administration & Faculty



Theodore Abraham, MD, FACC, FASE
Medical Director, UCSF Cardiac Sonography Program



Amanda Brown, NP, MBA
Dean and Chief Academic Officer, Cardiac Sonography Program
Email: cardiacsonography@ucsf.edu



Nadia Francisco, MSc, ACS, RCCS, RDCS, FASE
Program Director, Cardiac Sonography Program
Email: cardiacsonography@ucsf.edu

Accreditation and Affiliations

Institutional Accreditation

UCSF Medical center is accredited by the Joint commission.
1 Renaissance Blvd
Oakbrook Terrace, IL 60181

Programmatic Accreditation

Programmatic accreditation is a voluntary process that allied health education programs may undertake to demonstrate compliance with standards designed to indicate a minimum level of education competency.

The UCSF Cardiac Sonography program is currently programmatically accredited.

Commission on Accreditation of Allied Health Education Programs (CAAHEP)

9355 - 113th St. N, #7709
Seminole, FL 33775
Phone: (772) 210-2350
Email: mail@caahep.org
Website: www.caahep.org

Council for Higher Education Accreditation (CHEA)

One Dupont Circle NW, Suite 510
Washington, DC 20036
Phone: (202) 955-6126
Email: chea@chea.org
Website: <https://www.chea.org/>

Joint Review Committee on Education in Cardiovascular Technology (JRCCVT)

1449 Hill Street
Whitinsville, MA 01588-1032
Phone: (978) 456-5594
E-mail: office@jrccvt.org
Website: <https://www.jrccvt.org/>

Affiliations

The UCSF Cardiac Sonography program is affiliated with UCSF Health.

Admissions Information

Non-Discrimination

The school admits students without regard to race, gender, sexual orientation, religion, creed, color, national origin, ancestry, marital status, age, disability, or any other factor prohibited by law.

Admissions Policy

Admission to the UCSF Cardiac Sonography program is open to all applicants who are 18 years of age or older. The program has a limited student body, with a maximum of 6 students selected yearly. The program reserves the right to reject applicants or rescind eligibility for an applicant to begin classes if all general and admissions requirements are not completed at the program's start date.

Background Check and Drug Screening

Many states, employers, and agencies impose restrictions on healthcare workers' employment, registration, licensure, or certification with certain criminal convictions. Additionally, institutions that accept students for clinical practicum and potential employment often require a criminal background check. As a result, students applying to any program must successfully pass a criminal background check to be eligible to begin classes. The program will provide a criminal background check free of charge before starting the program. Convictions, guilty pleas, or nolo contendere pleas for specific drug-related, fraud-based, or serious crimes will automatically disqualify prospective students from eligibility for these programs.

If a potential applicant is denied entry into the program but believes that the background check results are incorrect, the institution will provide the student with the contact information to appeal the decision. However, the application process will not move forward until the appeal is complete, and the student may need to re-apply for a future program if the appeal is accepted. Healthcare institutions that accept our students for clinical practicum and potential employment may require an additional criminal background check. They may reject a student based on criteria different than those applied to the student during the program's enrollment process. Employment decisions are outside the control of the program. Applicants who have questions about how these issues may affect their clinical/externship placement or potential future employment should discuss this matter with a school official before applying to the program.

In addition, if you have a criminal background, it may be a barrier to taking the national credentialing exam. The credentialing rules indicate that they may act against an applicant, candidate, or registrant in the case of conviction, a plea of guilty or plea of nolo contendere to any crime. Suppose you are presently charged with or have been convicted or found guilty of or plead nolo contendere to any crime (felony or misdemeanor) other than a speeding or parking violation. In that case, you may have questions concerning this rule. You may seek clarification from the credentialing body as to how it pertains to your circumstances and your eligibility to sit for a national credentialing exam. More information can be obtained at the websites below.

Cardiovascular Credentialing International (CCI)

<http://www.cci-online.org/>

American Registry of Diagnostic Medical Sonographers® (ARDMS®)

<http://www.ardms.org/>

To ensure the safety of patients and those providing testing on them, often, drug screening is required for employment in the healthcare industry. A urine drug screening will be required before the start of the program. The screening is offered through UCSF Health. Accepted students out of state can have the drug screening performed at an approved testing center. *The UCSF Cardiac Sonography program is not responsible for the cost of the screening.* See the Tuition section for fees.

Interview Criteria and Evaluation Policy

Applicants are evaluated using a multi-factor scoring rubric with a maximum possible score of **24 points**. Only the top-scoring applicants will be invited for an interview. All components are reviewed by the Program Director and/or admissions committee.

Category/points:

- UCSF staff/affiliation: 2 points
- GPA ranking: 0-4 points (GPA scores will be ranked annually based on the distribution of GPAs among all applicants. Points awarded based on percentile ranking within the pool)
- Highest Degree Earned: 0-4 points
- Anatomy & Physiology Grades: 0-4 points
- Essay: 1-3 points
- Letter of reference: 1-3points
- Resume evaluation: 0-3 points

Admissions Requirements

The following items must be completed and submitted as part of the application:

- ***A minimum of an Associate's degree is required.***
- Electronic application at cardiacsonography.ucsf.edu that will direct to \$50 application fee (non-refundable) payable online
- Educational transcripts (must be official and sealed – recommend use of Parchment; digital copies to be sent to cardiacsonography@ucsf.edu).
- Pre-requisites:
 - Must have successfully completed with a grade of C or better:
 - Medical Terminology (at least 2 College credits)
 - Anatomy & Physiology I and II (total 8 College Credits) **or** Anatomy (5 credits) and Physiology (5 credits)
- Resume and Personal essay (see essay guidelines below)
- Two letters of reference (No family allowed)
 - 1 professional
 - 1 personal

Essay Guidelines

Your completed application must include an essay about your history and future goals in the field of cardiac sonography.

Essay Format: Include a title page with name. The body of the essay must not be more than 2 pages, double-spaced. The following questions are provided to help you formulate your ideas and answers.

1. How did your interest in cardiac sonography develop?
2. What is the role of the cardiac sonographer?
3. How has your prior training prepared you for a career in cardiac sonography?
4. What specific experiences have you had that influenced your career choice?
5. What personal characteristics would be the most helpful to a person who chooses a career in cardiac sonography?

Additional Admissions Documentation

Immunizations and other documentation are required to start the program:

- Proof of Health Insurance
- Tetanus-Diphtheria Booster
- Hepatitis B Vaccine, or Signed Waiver
- Physical Exam Within the Past 12 Months
- Flu Vaccine (only applicable during flu season)
- Tuberculosis/ Purified Protein Derivative (PPD) Test
- Immunization Records, Measles Mumps Rubella (MMR)
- Proof of Positive Varicella (chicken pox) Titer or Two Varicella Vaccinations

Admissions Procedure

- Applicants will receive a submission confirmation via email from the program.
- If eligible, an in-person interview will occur at UCSF and run approximately one hour.
- Applicants, whether granted an interview, will be notified in writing if they have been accepted into the program.
- If accepted, the applicant must confirm or decline by the date stated in their acceptance letter.
- Accepted applicants not wishing to attend the program should notify the Program Director immediately.
- If accepted into the program, you will receive an email from the Program Director and UCSF HR for enrollment.
- A maximum of six (6) students will be selected for the program yearly.
- Submit your application online at cardiacsonography.ucsf.edu and send all requested documentation through the program's website: cardiacsonography@ucsf.edu
- Mail-in applications will not be accepted. Incomplete applications will not be processed.

Foreign Transcripts

Coursework taken at a foreign institution (excluding secondary school documents that are in English and are recognized by the USNEI U.S. Department of Education) must be evaluated for equivalence to coursework taken at a United States institution. The UCSF Cardiac Sonography program accepts the evaluations of foreign coursework from certain agencies. A listing of approved agencies can be found at: www.naces.org, www.aice-eval.org.

English Proficiency

The UCSF Cardiac Sonography program does not provide English as a second language instruction. Students are required to speak English in classes that are taught in English. A student whose native language is not English and are enrolling in programs taught in English are required to provide proof of English proficiency by one of the following:

- Test of English as a Foreign Language (TOEFL) with an Internet-Based Test (iBT) score of 61 or higher, Paper-Based Test score of 500 or higher, or Computer-Based Test (CBT) score of 173;
- Advanced Placement International English Language (APIEL) with a score of 173 or higher;
- International English Language Testing System (IELTS) with a level of 6 or higher;
- Successful completion (i.e. grade of PASS or 'C' or Better) of accredited high school or accredited college coursework taught in English; or,
- Completion of an interview with the Program Director or his/her designee.

Re-Entering or Withdrawal

Students who have previously attended the UCSF Cardiac Sonography program, but did not graduate, or voluntarily withdraw from the program, will not be allowed to re-enter the program during the academic school year. The academic school year is defined as the first day of class through the last day of class. The student may re-apply to the program as a new applicant the follow year. There is no guarantee the student will be accepted into the program.

Termination Policy

A student may be terminated for noncompliance with school policies published in the Catalog & Student Handbook. This includes, but is not limited to, unprofessional conduct, non-payment, insufficient academic progress, attendance, and failure to comply with school rules and regulations. The policies outlined in the Catalog & Student Handbook explains the program's expectation of the student and disciplinary action for noncompliance. Students that are terminated for valid reasons will not receive a refund.

Pregnancy Policy

Any student who becomes pregnant during the academic school year should notify the Program Director immediately. The student can complete the program but will be held to the same number of benefit days as listed under the benefit day/attendance policy. If the student elects to withdraw from the program due to the pregnancy, arrangements will be made to hold a position for her during the next enrollment

Financial Aid Information

Financial Assistance

The UCSF Cardiac Sonography program does not offer conventional Federal Financial Aid or any form of tuition assistance. Below is a list of financial lenders and students being welcome to use any lender they choose.

- Sallie Mae <https://www.salliemae.com/student-loans/>

Program Charges, Tuition & Payment Schedule

Program Charges

The total cost of the program is \$15,095.00, which includes a \$50.00 application fee, \$45.00 State of California student tuition recovery fund (STRF), and \$15,000.00 tuition. Additional fees paid by the applicant include the cost of a criminal background check and urine drug screening, estimated at \$500.00.

The Program charges are as follows:

Application Fee	\$50.00	Must accompany application
Tuition	\$15,000.00	Must be paid in accordance with the schedule below
STRF Fee	\$45.00	Must be paid on or before the first day of class (nonrefundable) and is due upon enrollment

Payment Schedule

The payment of tuition and fees is due and must be paid as follows:

First Payment	\$3,500.00	Must be paid on or before the first day of class
Second Payment	\$3,500.00	Payable on or before the beginning of the fifth (5 th) month of class
Third Payment	\$8,045.00	Payable on or before the beginning of the tenth (10 th) month of class
TOTAL	\$15,045.00	

No Penalty Charges

Your failure to pay pursuant to the Payment Schedule (including your credit card issuer not approving the charges for any reason) will result in the payment being declared late. You will receive late payment notifications, which may be by email, text message or by phone. Late payments may be subject to interest at a rate of 12% per annum (or the highest rate permitted by applicable law (if lower)). If payment is not received within thirty (30) days following its due date, you will be immediately disenrolled and there will be no penalty charges assessed against you.

Refund Policy

State of California Student Tuition Recovery Fund (STRF)

It is a state requirement that a student who is a resident of California, who pays his or her own tuition, either directly or through a loan, pay a state-imposed fee for the Student Recovery Fund. Although it is based on the actual amount of total tuition cost (regardless of the portion that is prepaid), it is charged on a calendar year basis. Please refer to the Schedule of Tuition and Fees set forth above. If you are not a resident of California, you are not eligible for protection under or recovery from the Student Tuition Recovery Fund. Participation is mandatory for California residents.

It is important that enrollees keep a copy of any enrollment agreement, contract, or application to document enrollment, tuition receipts or canceled checks to document the total amount of tuition paid. Such information may substantiate a claim for reimbursement from the STRF, which must be filed within one year of the Bureau's notice to the student of their rights under the STRF, or if no notice of rights is served to the student, within four years of institution's closure. For further information or instructions contact the Bureau for Private Postsecondary and Vocational Education, 400 R. Street, Suite 5000, Sacramento, CA 95814, (916) 445-3427.

California Resident Student Refund Policy

If the student wishes to withdraw from the Program they shall provide written notice to the program director of their intent to cancel the Agreement or to withdraw from the institution and obtain a refund. The following procedure will apply to obtain a refund of tuition:

A student who withdraws from the UCSF Cardiac Sonography program will receive a refund of tuition, if one is due, within 30 days following the student's withdrawal. In the event that a student does not begin classes, all monies paid for tuition and fees, with the exception of the \$50 application fee, are refundable. In addition, the student may withdraw from the program after instruction has started, and may be entitled to a refund if the student has completed 60% or less of the term of instruction. The following formula will be used to determine the amount of refund to the student: $(\text{term tuition divided by term hours}) \times \text{term hours attended} = \text{the amount owed by the student}$. The refund will be the amount in excess paid by the student.

If the student has received federal student financial aid funds, the student is entitled to a refund of monies not paid from federal student financial aid program funds. Fees will be refunded according to the refund percentage. An administrative fee of \$100 will be assessed to any student who withdraws or goes on leave from the institution on or after the first day of the semester. Refunds are made within 30 days of the withdrawal date.

Academic Information

Contact Hour Policy

A lecture period of 50-60 minutes or a lab period of 110 to 220 minutes per week, extending over one semester, constitutes one academic contact hour. For each lecture hour, students are expected to spend a minimum of two hours outside class preparing for the course.

Transfer of Credit to/from Other Schools

The UCSF Cardiac Sonography program awards a professional certificate and does award college credits. Transfer of credits to or from other schools is not applicable.

Advanced Placement

There is no advanced placement or credit given for prior academic or clinical experience.

Attendance Policy

Attendance may affect the quality of a student's academic performance. Therefore, prompt and regular attendance in lectures and lab sessions is expected of all students. The students participate in actual patient scanning at their clinical site. To perform such procedures safely, the students must receive appropriate academic instruction and lab practice before beginning their clinical. A student's absence from class or labs could affect clinical competence and compromise patient safety. For these reasons, full attendance is the goal for all classes and clinical education. Five or more absences from class will result in the student's final average being dropped by one letter grade. Ten or more absences from class or ten or more from clinical may result in dismissal from the program. Excused absences are granted for health-related reasons but must include a signed letter from a medical doctor.

Academic Honesty Policy

Students who plagiarize coursework or falsify attendance documents may be dismissed from the program.

Student Code of Conduct Policy

UCSF Health is an academic community committed to its students' educational and personal growth. Students finding satisfaction in their studies and helping patients will develop a sensitive and tenacious attitude and seek the best results for their patients. Behavior that infringes upon rights, safety, or privileges, or impedes the educational process, is unacceptable and may lead to sanctions up to and including expulsion from the program.

- Students should exhibit a strong intellectual curiosity to apply the theories of Echocardiography in diagnosing heart and vascular disease.
- They must be willing to spend dedicated untold hours studying the profession of Echocardiography.
- They should be interested in developing good psychomotor skills, working with their hands, equipment coordination, and constantly learning new skills.

- Physical, as well as mental health should be maintained. Handling stressful situations regarding patients and fellow healthcare professionals in a working environment should be developed.
- Effective communication, listening, working effectively with medical personnel, and working as part of a team are skills that must be developed and maintained.
- Good phone etiquette should always be practiced.
- The student should have a positive attitude about their training and not publicly speak negatively about any aspect of their training.

Personal Day Policy

A personal day excuses the student from the program for sickness or personal leave.

- A maximum of five (5) personal days are allowed while enrolled in the program.
- The Program Director must approve the time off.
- The student is required to provide two weeks' notice for all time off requests.
- Personal days cannot be used with program breaks and holidays.
- Personal days cannot be used consecutively (i.e., a Friday or Monday for five weeks in a row).
- Personal days can only be taken as a whole or half day.
- If time is requested for any reason other than illness during the clinical rotation, it must be prearranged and approved by the lab supervisor.
- All students will fill out a form requesting and explaining the use of time off.
- The student will sacrifice a full personal day if dismissed from the clinical setting for any reason (e.g., being out of uniform, reporting late, incomplete records, or inappropriate behavior).

Make-Up Time

If any days from the clinical education are missed over and above the allotted number of personal days, the student must make up the time within 30 days.

- Time worked, as make-up time, must be agreeable to the clinical site supervisor and program faculty.
- The Clinical Coordinator determines what are acceptable as make-up days.
- If the student cannot work the days requested, they will be required to make up the days at the end of their clinical education.
- Only make-up time is allowed if adequate supervision is provided. Students will not be allowed to make up time in other than four or eight-hour blocks.
- Students may participate up to ten (10) hours in any 24 or 50 hours in any one week of combined classroom and clinical assignments.

Excused Absence

Make-up time or forfeit of personal days will not be required for students who have permission to attend local, state, or national educational meetings directly related to Echocardiography. However, students must submit a certificate of attendance from their meeting. Excused absences for other than an approved educational function must be made-up before course completion. Excused absence (other than personal days) from clinical education will be allowed only if the student has permission from the Program Director.

Observed Holidays

The UCSF Cardiac Sonography Program will observe the following holidays:

Veteran's Day
Thanksgiving
Martin Luther King Jr. Day
Presidents Day
Memorial Day
Juneteenth Day
Independence Day

Note that additional holidays will occur during the program recess.

Weather Policy

The student should make every attempt to report to the clinical site in inclement weather. Due to the vast geographical area that the sites cover, the Program Director will determine days off for the outlying areas. Official days may be used as make-up time. In addition, you are required to contact your Program Director to confirm if class or if your clinical site is cancelled for the day. All information will be communicated through email and or the student portal.

Notification of Clinical Site Absence

If the student must be late or absent during clinical practicum, they must contact their clinical supervisor before the scheduled arrival time. Lack of notification or chronic tardiness may result in disciplinary action.

Employment Disclosure

The UCSF Cardiac Sonography program does not guarantee or promise of employment.

Student Housing

Once enrolled, students can seek UCSF housing at a staff rate.

Grading System

Students must maintain a grade of $\geq 77\%$ in all coursework for their progress to be considered satisfactory. Progress reports of each student's current grades and academic performance will be generated at least once per semester after mid-term testing for the entirety of the program. The Program Director conducts individual student meetings. Corrective actions for improved or continuing academic or professional success will be advised, and this feedback will be documented and placed in the student's permanent school record. Students will also have an opportunity to enter their comments on the record.

Grading Scale

A	100-93	C+	79-77*
A-	92-90	C	76-73
B+	89-87	C-	72-70
B	86-83	D	69-60
B-	82-80	F	< 60

**A minimum passing grade in all coursework is $\geq 77\%$, which is a C+.*

Program Standards

The following standards, demands, and skills are the cornerstone of the healthcare environment. Standards are not conditions for admission to the program, but they indicate the abilities and characteristics necessary to complete the requirements of the UCSF Cardiac Sonography Program.

Behavioral Standards

With or without reasonable accommodations, the student must be able to accomplish the following safely, efficiently and competently:

- Demonstrate appropriate responses to situations involving the critically ill, medical emergencies and death.
- Prioritize and manage multiple tasks simultaneously.
- Understand and apply clinical instruction from department personnel.
- Interact effectively with patients, families, supervisors and co-workers of the same and diverse cultures by demonstrating such qualities as respect, politeness, collaboration, teamwork and discretion.

Physical, Interpersonal, Communication, Mobility, Tactical, Hearing and Visual Demands

- Reaching to position and/or roll patients to side to side when necessary.
- Lift or transfer patients out of a wheelchair, stretcher and other devices.
- Pushing, pulling heavy equipment including ultrasound machines.
- Visual monitoring of patient in dim light.
- Visually view monitor to accurately acquire images of patient's anatomy at appropriate level within level of training.
- Differentiate among subtle shades of color and greyscale used in ultrasound imaging
- Verbally explain visual examination to groups for critique and conference.
- Interpretation of patient chart and ultrasound requests.
- Correlate data for the purpose of performing an ultrasound examination according to protocol.
- Accurately perform scanning procedure.
- Manipulate mechanical and patient care equipment. i.e., keyboards, dials, switches, push buttons, plug in devices and blood pressure equipment.
- Utilize hard copy devices such as laser printers and digital retrieval devices.

- Respond appropriately to equipment signals such as sound and lights.
- Perform for a prolonged period of time without breaks.
- Use hospital lab equipment (ultrasound systems) in a back and forth manner, requiring fine motor skills.
- Maintain physical balance while performing examinations on patients of varying body habitus.
- Standing or sitting for an extended period of time.

Student Work Policy

Students are not to be substituted for regular staff during their clinical practicum. However, they may be permitted to undertake certain defined activities under appropriate supervision and direction after demonstrating competency. Students may be employed in a clinical setting outside regular educational hours, provided the work does not interfere with everyday clinical responsibilities. The work must be non-compulsory, paid, and subject to standard employee policies. The time is not to be counted toward clinical hours. If this occurs, the student may be terminated from the program.

Exposure to Blood-Borne Pathogens and Communicable Diseases

The UCSF Cardiac Sonography program follows all active policies and procedures of UCSF Health, including universal precautions for blood-borne pathogens and infectious diseases. Students will be provided the education, and all required personal protective equipment to protect them from these infectious diseases that may be encountered in the clinical setting.

Professional Appearance & Ethics

As a student and representative of the UCSF Cardiac Sonography program, you will be working with the public and hospital professional personnel. Your appearance, professionalism and communication are critical for your success as a healthcare provider.

Appearance and Personal Grooming

- Dress Code: Business casual, scrubs, and lab coats are to be neat, clean, and professional looking. Each student will receive a nametag from the UCSF Cardiac Sonography program, which is to be worn during class and clinical rotation.
- Shoes: Comfortable shoes or clean sneakers may be worn. No open-toe shoes are allowed.
- Fingernails: Fingernails are to be kept neat and trimmed. Long fingernails are not permitted due to the potential to transmit disease.
- Perfumes & Colognes: Personal hygiene is paramount since you will be working in close contact with patients that may be affected by heavy odors. Perfume or cologne are prohibited and cannot be used to camouflage body odors.
- All students will follow all UCSF hospital policies regarding personal grooming.

Ethics and Professionalism

Students performing under the direction of physicians, share the ethical obligations that physicians must maintain. They are to protect and to promote the best interests of the patient. Working together, students must acknowledge patient values and beliefs and avoid interfering with their expression and personal beliefs.

Confidentiality

Information concerning patients received directly or indirectly, is never to be given out to other than authorized personnel in or out of the hospital. Students are to conduct themselves both on and off duty in a manner, which will not discredit the hospital, program, themselves or the respective profession. Unprofessional behavior will lead to disciplinary action such as loss of a benefit day, verbal/written warnings, suspension from the program, or termination from the program.

Sexual Harassment Policy

Sexual harassment is a form of sexual discrimination. The UCSF Cardiac Sonography program does not tolerate sexual harassment of its employees and students. The UCSF Cardiac Sonography program has a procedure to respond quickly and responsibly to complaints of sexual harassment. If a student has a complaint, they should report it directly to the Program Director. If the Program Director is the source of the harassment, the report should be made to the Program Director's authority, the program's Medical Director. Any faculty member who receives a notice of sexual harassment must report the allegations to UCSF Health and Human Resources. Suppose a student feels uncomfortable reporting sexual harassment through their supervisory chain of command. In that case, the report should be made directly to the Division Director of Human Resources or their designee. Any student determined to have engaged in any harassment may be subject to discipline up to and including termination of employment.

Communication

The student must consider carefully what to say to the patients and how to deliver the information. Keeping in mind that patients often need help understanding what is said, or they may misunderstand or take statements out of context, the student should communicate clearly—work toward preparing patients psychologically for their examinations by explaining the procedure and establishing realistic expectations. Keeping an open line of communication with patients will allow the student to perform better at the highest level. Patients arrive for their test with apparent expectations of the person conducting their examinations and respond according to the treatment they receive. For instance, some patients may refuse to submit to a procedure by a “student” simply because they perceive a student as someone who is not yet fully trained or competent. Observing student interaction with their co-workers and other health professionals can also influence a patient's perceptions of professionalism. Patients have little confidence in students who exhibit overly casual immature behavior. Students will act professionally and respectfully at all times.

Patient Modesty

By observing the rules of draping and covering the patient to the greatest extent possible during an examination, the student can reduce patient anxiety. For ultrasound students, at the end of a study, be sure that the patient is fully covered or completely dressed before you open the door and walk out. Before entering a room with the door closed, knock first and wait to be allowed into the room. If the student needs assistance or feels uncomfortable with a situation, they are to seek the guidance of a

hospital staff employee. Students are expected to determine the appropriate manner to deal with a patient. They should communicate their interests in the patient at all times and assure at the end of the examination that they have given their best services.

Disciplinary Action

Due to the various circumstances involved in appearance, attitude, and conduct, no one disciplinary standard can apply to these areas. The type and degree of disciplinary action will depend upon the type of infraction and how many other previous warnings the student has received. The severity of the corrective action may range from being sent home and required to make time to possible termination from the program. The Program Director will determine the outcome. A copy of each warning that a student receives will be on the permanent record and sent to the Medical Director.

Complaints & Inquires

If there is a complaint and or inquiry regarding the program's operation, the student should first contact the Program Director. If the inquire is not resolve the Medical Director should be contacted. If the inquire is still not resolved, the student should contact the CA Department of Education.

CA Department of Education

Tel: 916-319-0800.

Website: <https://www.cde.ca.gov/re/cp/>

Program Requirements and Clinical Expectations

Credentialing Exams

Students are required to sit for the CCI or ARDMS registry exam prior to graduation. Successful passing of the exam is required to graduate from the program. The student has up to five months from the commencement date to pass the registry exam to graduate from the program. Students that do not pass the registry exam will not graduate from the program. Upon successful completion of the registry exam, the student will earn one of the following credentials:

CCI Echocardiography Credential:

Registered Cardiac Sonographer (RCS)

ARDMS Echocardiography Credential:

Registered Diagnostic Cardiac Sonographer (RDMS) (Adult Echocardiography (AE))

Graduation Requirements

- Complete all coursework
- Complete the required hours of the program
- Maintain a passing grade $\geq 77\%$ for all coursework
- Pass a registry exam in Cardiac Sonography

A student needs to receive a passing grade in their coursework to be able to continue the program. If not, the student will be dismissed from the program and receive a letter documenting the total hours (both clinical and didactic) that they have completed for their records.

Clinical Practicum Guidelines

The student should adhere to the following guidelines to ensure safety and success during their clinical practicum:

- Carry a small pocket notebook/tablet for recording questions and techniques pertaining to various procedures that you have been associated with.
- Familiarize yourself with the operation of the different pieces of equipment that you will work with.
- Ask your supervisor whenever you are in doubt about a procedure or patient care technique.
- Know when and to whom to report significant patient symptoms.
- Acquaint yourself with your department and how it functions: hours, duties, supplies, resources, and interdepartmental conduct.
- Know about your institution's emergency, fire and disaster regulation and procedures. Observe and participate in as many procedures performed in your assigned area.
- Maintain all records as required by the UCSF.
- Learn and develop proper professional attitude and ethics needed when working in the clinical environment.
- Supply your own transportation to and from the clinical site.
- Maintain high ethical and professional standards at all times.
- Develop proficiency in the all aspects of the clinical environment.
- To successfully complete the clinical aspect of training, each student must complete the required knowledge, skills, and objectives listed in the Clinical Site Records Keeping (see below).

Clinical Site Record Keeping

In order to meet accreditation requirements and to ensure that each student receives experience in a variety of clinical procedures, it is imperative that each student submits flawless records of their clinical experience. In completing these records, the student must conform to the program's standards both in terms of accuracy and completing them in a timely manner. If the records are not accurate when the Clinical Coordinator examines them, the student will face disciplinary action. Falsification of records may result in loss of Benefit Days and/or dismissal from program. The student will utilize the Trajecsys reporting system, an online clinical site program, to document time and procedures. More information can be found at: <https://www.trajecsys.com/aboutus.htm>

Professional Conduct

You are entering an allied health profession and will be expected to conduct yourself appropriately. Students are expected to present themselves in a professional manner at all times while in the clinical settings. A student may be dismissed from clinical for any of the following reasons:

- Failure to comply with the attendance policy.
- Breach of hospital confidentiality regulations.

- Violation of the Code of Ethics or Technical Standards.
- Critical errors that are deemed potentially harmful to patients.
- Erratic or abnormal behavior that is related to alcohol consumption or drug usage.
- Failure to comply with hospital policies and procedures, state or federal laws, rules, and regulations.
- Disrespectful or insubordinate behavior towards a clinical preceptor or any healthcare team member.

If a student is dismissed from the clinical site for any of the above reasons, a contact form will be filled out, and the day will count as a clinical absence, regardless of the time of the incident. Serious infractions or repeated incidences will be reviewed by the Program Director and the Medical Director and could result in a recommendation for dismissal from the program. The UCSF Cardiac Sonography program may suspend a student with a pending investigation.

Course Information

Required Textbooks and Course Materials

All education material is provided in the tuition of the program.

- Anderson B. A Sonographer's Guide to the Assessment of Heart Disease. 2016. Echotext Pty. Ltd. ISBN-13: [9780992322205](#)
- Palma R. The Echocardiographer's Pocket Reference (5th ed.) 2020. Phoenix AZ: Arizona Heart Foundation. ISBN-13: [9780578687179](#)
- ASE Guidelines and Standards @ [ASE Guidelines and Standards Link](#)
- Pegasus Lectures <https://www.pegasuslectures.com/college.php>
- Supplemental materials available online through UCSF Health Library

Courses & Contact Hours

SEMESTER I

Course	Title	Didactic - Lab - Clinical		
AE-100	Adult Echocardiography I	64	-	-
UP-100	Ultrasound Physics and Instrumentation I	48	-	-
AE-101L	Adult Echocardiography Lab I	-	160	-
Hours = 272				

SEMESTER II

Course	Title	Didactic - Lab - Clinical		
AE-200	Adult Echocardiography II	32	-	-
UP-200	Ultrasound Physics and Instrumentation II	24	-	-
AE-201L	Adult Echocardiography Lab II	-	80	-
EC-100C	Adult Echocardiography Clinical Practicum I	-	-	224
Hours = 360				

SEMESTER III

Course	Title	Didactic	Lab	Clinical
AE-300	Adult Echocardiography III	32	-	-
UP-300	Ultrasound Physics and Instrumentation III	24	-	-
EC-200C	Adult Echocardiography Clinical Practicum II	-	-	448

Hours = 504

Total Contact Hours = 1136

Course Descriptions**SEMESTER I****Adult Echocardiography I (AE-100)**

This course will cover cardiovascular anatomy and principles of the cardiovascular system. Students will learn the cardiac cycle focusing on event timing, basic cardiovascular pharmacology, and electrocardiography. Also included in this course is an introduction to the 2-dimensional ultrasound appearance of cardiac anatomy, including abnormalities seen in echocardiography.

Prerequisite: Admission to the program

Co-requisites: UP-100, AE-101L

Contact Hours: 64

Days: Tues, Thurs

Semester: I

Ultrasound Physics and Instrumentation I (UP-100)

Students will apply the principles of ultrasound, sound propagation, pulsed-echo instrumentation, image formation, transducers, and system operation for interpretation of sonographic information and image methodology. Integrating these theories and abstract principles with their practice clinical applications will be emphasized.

Prerequisite: Admission to the program

Co-requisite: AE-100

Contact Hours: 48

Days: Wed, Fri

Semester: I

Adult Echocardiography Lab I (AE-101L)

This course provides hands-on learning in the echocardiography laboratory. The student familiarizes with ultrasound imaging equipment, system controls, transducer position, and scanning techniques.

Prerequisite: Admission to the program

Co-requisite: UP-100

Contact Hours: 160

Days: Tues, Wed, Thur, Fri

Semester: I

SEMESTER II**Adult Echocardiography II (AE-200)**

This course includes an in-depth review of the pathophysiology of heart disease and the role of ultrasound diagnosis and treatment. Topics include measurements of cardiac chamber size, calculations of valve area, hemodynamics, estimation of regurgitation, evaluation of native valve disease, evaluation of pericardial disease, prosthetic valves, aortic disease, cardiomyopathies, evaluation of cardiac tumors, and hypertensive heart disease.

Prerequisite: AE-100

Co-requisite: UP-200

Contact Hours: 32

Day: Tues

Semester: II

Ultrasound Physics and Instrumentation II (UP-200)

This course continues exploring the theoretical and abstract principles that form the technological basis of diagnostic medical sonography. Topics will include, Doppler physics and instrumentation, artifacts, quality assurance, and hemodynamics. Physics applications and collaborative learning will be highly emphasized.

Prerequisite: UP-100

Co-requisite: AE-200

Contact Hours: 24

Day: Wed

Semester: II

Adult Echocardiography II Lab (AE-201L)

The student will continue to build on the skills learned in AE-200L. Content includes the development of a full transthoracic echocardiography scanning protocol. In addition, the students will learn the required measurements to determine the severity of the cardiovascular disease process. This Lab is structured to increase the complexity and difficulty as the student progresses through the program.

Prerequisite: AE-101

Co-requisite: UP 200

Contact Hours: 80

Days: Tues, Wed

Semester: II

Adult Echocardiography Clinical Practicum I (EC-100C)

This course provides a supervised clinical practicum that prepares the student to develop the cognitive, psychomotor, and affective learning domains for Adult Echocardiography. The student will demonstrate increasing proficiency in the required echocardiography imaging modalities that will allow them to achieve clinical competency.

Prerequisite: AE-200

Co-requisite: AE-201L

Contact Hours: 224

Days: Thur, Fri

Semester: II

SEMESTER III**Adult Echocardiography III (AE-300)**

This course includes an in-depth review of the pathophysiology of heart disease. The role of ultrasound enhancement agents and exercise echocardiography will be discussed. In addition, quantitative echocardiography, including regurgitation assessment, myocardial strain, 3D imaging, and transesophageal echocardiography, will be addressed. Critical thinking skills to diagnose cardiovascular disease by echocardiography will be applied. Critique and analysis will include image identification, orientation, production and quality, and necessary reasoning skills in preparation for the credentialing examinations.

Prerequisite: AE-200

Co-requisite: UP-300

Contact Hours: 32

Day: Tues

Semester: III

Ultrasound Physics and Instrumentation III (UP-300)

This course is the cumulative preparation for the national credentialing board examinations in ultrasound physics and instrumentation. It involves real-world applications of physics, artifact recognition and rectification, and instrumentation of ultrasound equipment. Students will participate in interactive mock examinations in preparation for the credentialing examinations.

Prerequisite: UP-200

Co-requisite: AE-300

Contact Hours: 24

Day: Tues

Semester: III

Adult Echocardiography Clinical Practicum II (EC-200C)

This course provides a continued supervised clinical practicum that prepares the student to develop the cognitive, psychomotor, and affective learning domains for Adult Echocardiography. The student will demonstrate increasing proficiency in the required echocardiography imaging modalities in advanced cardiovascular disease. The final goal is to achieve a competency level of an entry-level cardiac sonographer.

Prerequisite: EC-100C

Co-requisite: AE-300

Contact Hours: 448

Days: Mon, Wed, Thur, Fri

Semester: III

General Information

Student Grievance Policy

Many student complaints can be resolved through discussion with the appropriate instructor or staff member, and we encourage students to make contact at the first indication of a problem or concern. This section describes the steps the student should follow so that a problem can be fully and fairly investigated and addressed. Any resolution will only bind the student if they agree to accept it. Importantly, the student must pursue their claim through this grievance procedure first.

This grievance procedure is intended for problems concerning a student's recruitment, enrollment, attendance, education, educational process, or other program matters. It does not apply to student complaints or grievances regarding grades or sexual harassment, addressed in different sections of this Catalog & Student Handbook.

The program will receive all information submitted by the student concerning a grievance in strict confidence, and the school and the student agree to maintain confidentiality in the grievance procedures. No reprisals of any kind will be taken by any party of interest or member of the UCSF administration against any party involved. The school will investigate all complaints or grievances fully and promptly.

Step 1: Grievances or complaints involving an individual instructor or staff member should first be discussed with the individual involved. Grievances or complaints involving a policy or class should first be discussed with the individual enforcing that policy, the class instructor, or the Program Director.

Step 2: If the matter is not resolved to the student's satisfaction in Step 1, the student may submit a written, dated and signed statement of the grievance or complaint and a description of the actions that have taken place thus far to the next level of authority directly or through the program's Medical Director.

Student Grievance Procedure

This grievance procedure is designed to address problems promptly and without undue delay. To achieve that, the student must initiate Step 1 within ten (10) business days of the incident or circumstance(s) giving rise to the complaint and must initiate Step 2 within ten (10) business days after receiving a response, or if more than twenty (20) business days have passed with no response. Suppose the student fails to take steps in this procedure within the required timeframes. In that case, the student will be deemed to have accepted the resolution last proposed by the UCSF Cardiac Sonography program. Suppose the UCSF Cardiac Sonography program fails to act within the timeframes described in this procedure. In that case, the student may follow the posted State of CA Department of Education and may contact them directly to resolve the grievance at:

CA Department of Education

Tel: 916-319-0800.

Website: <https://www.cde.ca.gov/re/cp/>

Hours of Operation

The UCSF Cardiac Sonography program operates from 8:00 am – 5:00 pm. Monday – Friday. All visitors are by appointment only.

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Non-Student Lab Volunteer Consent

American Institute of Ultrasound in Medicine Official Statement on Safety Training and Research (March, 1988):

Diagnostic ultrasound has been in use since the late 1950's. No confirmed adverse biological effects on patients resulting from this usage have been reported. Although no hazard has been identified that would preclude the prudent and conservative use of diagnostic practice may or may not be relevant to the extended exposure condition. It is therefore considered appropriate to make the following recommendation:

In those special situations in which examinations are to be carried out for purposes other than direct medical benefit to the individual being examined, the subject should be informed of the anticipated exposure conditions, and how these compare with conditions for normal practice.

The following individual volunteered as a sonographic subject for the Cardiac Sonography students' educational experience at the UCSF Cardiac Sonography program. The volunteer understands that this is conducted in a teaching situation and in no way constitutes a diagnostic ultrasound examination.

The volunteer agrees that UCSF Cardiac Sonography students and faculty will not be held legally liable for information gained or missed because of this procedure, whether or not that information is accurate or inaccurate.

The volunteer has read and understands this statement and signifies so by their signature.

Name: _____ (Print Name)

Signature: _____ Date: _____

Required Student Signatures

Student Laboratory Consent

American Institute of Ultrasound in Medicine Official Statement on Safety Training and Research (March, 1988):

Diagnostic ultrasound has been in use since the late 1950's. No confirmed adverse biological effects on patients resulting from this usage have been reported. Although no hazard has been identified that would preclude the prudent and conservative use of diagnostic practice may or may not be relevant to the extended exposure condition. It is therefore considered appropriate to make the following recommendation:

In those special situations in which examinations are to be carried out for purposes other than direct medical benefit to the individual being examined, the subject should be informed of the anticipated exposure conditions, and how these compare with conditions for normal practice.

The equipment used in the UCSF Cardiac Sonography program is standard diagnostic sonography equipment and has not been modified. The sonography student understands that they do not have to be scanned during a lab course and is strictly voluntary.

_____ I wish to be a volunteer. I understand that this is conducted in a teaching situation and in no way constitutes a diagnostic examination. I agree that will not be held legally liable for information gained or missed as a result of this scanning in the lab.

_____ I do not wish to be a volunteer.

Student Name (Print Name): _____

Student Signature: _____ Date: _____

Anti-Discrimination Policy

This Anti-Discrimination Policy (“Policy”) applies to all University of California (“University”) employees as well as undergraduate, graduate, and professional students (“students”), and third parties. The Policy applies at all University campuses, the Lawrence Berkeley National Laboratory, Medical Centers, the Office of the President, Agriculture and Natural Resources, and to all University programs and activities. The Policy is available for review in UCSF Care Links.

I have acknowledged this policy as a student of the UCSF Cardiac Sonography Program.

Student Name (Print Name): _____

Student Signature: _____ Date: _____

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Catalog & Student Handbook Acknowledgement

I have reviewed in detail and fully understand the policies below and all additional policies and requirements included in the UCSF Cardiac Sonography program catalog and student handbook.

- Refund Policy
- Termination Policy
- Pregnancy Policy
- Contact Hour Policy
- Attendance Policy
- Personal Day Policy
- Sexual Harassment Policy
- Student Work Policy

Student Name (Print Name): _____

Student Signature: _____ Date: _____

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This Catalog & Student Handbook is the property of the UCSF Cardiac Sonography program, and no portion of this work may be copied, reproduced, or shared in a physical or digital format without the written consent of the Program Director. The information contained in this catalog is true and correct to the best of my knowledge.

_____ Date: _____
Program Director Signature

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