

# **AMERICAN MEDICAL SCIENCES CENTER**

## **2012 CATALOG**

### **APPROVED TO OPERATE BY; "BPPE"**

The **B**ureau for **P**rivate **P**ostsecondary **E**ducation  
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Sacramento, CA 95834-1924  
(916) 574-7720  
[www.bppve.ca.gov](http://www.bppve.ca.gov)

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Falls Church, Virginia 22043  
(703) 917-9503  
[www.abhes.org](http://www.abhes.org)

### **CERTIFIED BY:**

The **U.S.** **D**epartment of **E**ducation  
As an eligible participant in  
The federal student financial aid (SFA) programs  
Federal Student Aid Information Center  
P.O. Box 84  
Washington, DC 20044-0084  
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The **S**tudent and **E**xchange **V**isitor **P**rogram  
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 **WELCOME TO**  
**AMERICAN MEDICAL SCIENCES CENTER**

It is our pleasure to introduce you to American Medical Sciences Center. Our goal is to focus on career training for an applicant's successful professional and academic future. We will always strive to present the most up-to-date learning materials in order to give our graduates the necessary tools for placement in the workforce.

 **STATEMENT OF OWNERSHIP**

American Medical Sciences Center, a California corporation, was acquired in March 1996. Institutional approval from the Bureau for Private Postsecondary and Vocational Education pursuant to California educational Code 94915 was granted in May 1997. Mr. Vardan Karagezian owns the American Medical Sciences Center. The owner possesses a Master's Degree in Electronic Technology and Medical Cybernetics. Mr. Karagezian Registered Diagnostic Medical Sonographer and has more than 20 years of experience in the field of Sonography and ultrasound.

 **MISSION STATEMENT**

The Mission of American Medical Sciences Center is to provide innovative, quality programs that are sound in concept, implemented by a highly skilled faculty and designed to serve the needs of students to achieve their educational, professional and personal goals. The final goal of the AMSC College is to empower its students to succeed in obtaining an entry to mid-level positions and to advance within the healthcare Industry by maintaining strong long-term employment.

 **OBJECTIVES**

Education and training at American Medical Sciences Center are directed toward preparing students to:

- Develop technical skills, knowledge and understanding of their application;
- Develop professional attitudes and behaviors related to study and work habits;
- Develop interpersonal communication skills, self-discipline and confidence;
- Utilize modern equipment;
- Provide the most reliable job placement assistance to our graduates;
- Render continuous active participation in national, state, and legal professional organizations;
- Continue to develop courses to meet the changes in the modern technology.

## APPROVALS, ACCREDITATION

The **American Medical Sciences Center** was granted institutional approval from the Bureau for Private Postsecondary and Vocational Education pursuant to California Educational Code 94915 IN 1996. The Bureau's approval means that the institution and its operation meet the standards established under the law for occupational instruction by private postsecondary educational institutions. Students who successfully complete a course of study are awarded an appropriate diploma or certificate of completion. Any questions a student may have regarding this catalog that have not been satisfactorily answered by the institution may be directed to:

The **Bureau for Private Postsecondary Education**  
2535 Capital Oaks Drive, Ste. 400  
Sacramento, CA 95833  
(916) 574-7720  
(916) 263-1897  
[www.bppve.ca.gov](http://www.bppve.ca.gov)

The **American Medical Sciences Center** is institutionally accredited by the Accrediting Bureau of Health Education Schools. This school voluntarily undergoes periodic accrediting evaluations by teams of qualified examiners including subject experts and specialists in occupational education and private school administration.

The **Accrediting Bureau of Health Education Schools**  
7777 Leesburg Pike Suite #314 N.  
Falls Church, Virginia 22043  
(703) 917-9503  
[www.abhes.org](http://www.abhes.org)

The **American Medical Sciences Center**, is approved by

The **Student and Exchange Visitor Program**  
Department of Homeland Security and Department of State.  
(202)305-2346  
[www.ice.gov](http://www.ice.gov)

## STATEMENT OF NON-DISCRIMINATION

**AMSC** does not discriminate on the basis of sex, age, physical handicap, race, or religion in its admissions to or treatment in its programs including training, placement and employment. The school owner/director is the coordinator of Title IX, the Educational Amendments Act of 1972, which prohibit discrimination on the basis of sex in any education program or activity receiving Student financial assistance.

## VOCATIONAL PROGRAMS OFFERED

### DIAGNOSTIC MEDICAL SONOGRAPHY

1980 HOUR / 78 WEEKS  
SEMESTER CREDIT HOURS 78.5

### GENERAL ABDOMINAL SONOGRAPHY

810 HOURS / 36 WEEKS  
SEMESTER CREDIT HOURS 35.5

### ECHOVASCULAR TECHNOLOGY

720 HOURS / 30 WEEKS  
SEMESTER CREDIT HOURS 28.5

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## **INSTRUCTIONAL FACILITIES**

**American Medical Sciences Center is located at 225 West Broadway, Suite 115, Glendale, CA. It is near the 134 freeway and easily accessible by several surface streets. More than 3,390 square feet of classroom, laboratory and office space is available. Each classroom and laboratory contains sufficient equipment and supplies to meet the needs of each curriculum and student. The building is equipped with heating and air conditioning systems. Entrances and exits are conveniently located so that the building can be cleared quickly and safely in an emergency.**

**AMSC physical library is co-located with examination preparation room between the emergency exit and two laboratories. Also, AMSC is a part of virtual library called LIRN. All new students must see admissions department for more information on how to access LIRN.**

**AMSC does not provide any housing accommodations to its students.**

## **EQUIPMENT**

**DIAGNOSTIC MEDICAL SONOGRAPHY-The Diagnostic Medical Sonography Program has lecture classrooms and laboratory rooms equipped with ultrasound machines - “TOSHIBA SONOLAYER 270A”, “ACUSON” with multi-frequency probes, Ultrasound VCR(s), IBM compatible computers with appropriate 3D software, TV, VCR, video tapes, books, anatomical charts, white board, chairs and tables.**

**GENERAL ABDOMINAL SONOGRAPHY-The General Abdominal Sonography Program has lecture classrooms and laboratory rooms with ultrasound machines and equipment - “TOSHIBA SONOLAYER 270A” with multi frequency probes Ultrasound VCR(s), “ALOKA 633”, IBM compatible computers with appropriate software, TV, VCR, video tapes, books, anatomical charts, white board, chairs and tables.**

**ECHOVASCULAR TECHNOLOGY - The Echovascular Technology Program has lecture classrooms and laboratory rooms with an Ultrasound Machine “ACUSON” with multi frequency probes, 3D software IBM compatible computers, test preparation programs, TV, VCR, video tapes, books, anatomical charts, white board, chairs and tables.**

**AMSC DOES NOT OFFER DISTANCE EDUCATION**

## **LEGAL CONTROL**

American Medical Sciences Center is a private postsecondary school. It is organized and operated as a California corporation known as the American Medical Sciences Center. The College is in compliance with all local, state, and federal laws and regulations.

## **REGULATIONS**

Each student receives a catalog upon enrollment. Students are responsible for knowing all of the school's rules and regulations; i.e. student conduct, dress code, attendance, make-up hours, etc. Students should be aware that criteria for admission and/or graduation might differ depending upon the individual program.

## **FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT**

The practices and procedures employed by the American Medical Sciences Center comply with the confidentiality and record availability laws of the Family Educational Rights and Privacy Act of 1974 and the Buckley Amendment. Students, parents of minors and guardians of "tax dependent" students have the right to inspect and challenge the information contained within the records for these students. Confidentiality of student and staff records is strictly protected. The school complies with Title IX of the 1972 Education Amendments, Equal Opportunity Act of 1972 (Title VII of the Civil Rights Act of 1964), Section 504, Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1993. Student information is not available to anyone without (a) a written request or release from the student, (b) a court order or appropriate government agency requirements.

## **STUDENT SERVICES**

The College assists students by providing them with access to programs outside the classroom. Academic advising is available to all students at the college by the instructors. Students are also referred to community professionals for personal, non-academic counseling.

## **COPYRIGHT POLICY**

American Medical Sciences Center will respect all copyright rights including:

- The rights of owners of third party material used in teaching,
- The rights of students in all material they create in and for school,
- The rights instructors have in material they created prior to being employed at the school and in material created while employed at the school.

The school will comply with United States copyright law (title 17, U.S. Code) including sections relating to educational and library use.

## **PROGRAM DELIVERY**

Residential only

## **HANDICAPPED FACILITIES**

The American Medical Sciences Center does provide access and accommodations for the disabled.

## **HOURS OF OPERATION**

Time Schedule

Monday through Friday 9:00am-9:00pm

Saturdays 9:00am-3:00pm

## GENERAL RULES AND REGULATIONS

General rules and regulations for **AMSC** concerning attendance, which are applicable to all students of the school, can be found in this Catalog. Students are responsible for familiarizing themselves with all rules and regulations.

## ADMISSIONS REQUIREMENTS

The general provisions for admission to the American Medical Sciences Center are as follows:

- I. Applicants must have a high school diploma or the equivalent.
- II. Take and pass the standardized test; and
- III. Must take part in mandatory school orientation.

All applicants are required to complete an application form, take and pass the school's test which attempts to measure the applicant's aptitude to successfully complete the educational program for which she/he has applied and have complete an oral interview with the admission representative of the school. **AMSC** does not discriminate towards an applicant based on sex, religion, race, ethnic origin, age, natural origin or handicap. A handicapped applicant will be assessed according to his or ability to perform the essential functions required of a graduate of any particular program of study, with or without reasonable accommodations. **AMSC** reserves the right to refuse admission to any applicant who does not meet the school's established criteria for admission.

## ADMISSIONS PROCEDURES

The following procedures are established for admission to **A M S C**

- ① The applicant will make an appointment with an Admissions Representative.
- ② The prospective student will be given a copy of this catalog.
- ③ Prior to meeting with the admission representative, the applicant will;
  - a) Complete an admissions application.
  - b) Take the admissions entrance **SLE** test.
  - c) If passing score is achieved **29** or better, the student will be scheduled for a personal interview. The interview will include disclosure of the completion and placement rates, tour of the facility, and discussion of tuition payment plans and the applicant's professional, educational and personal goals. The applicant will be asked to submit a high school diploma, a high school equivalency certificate, a transcript or other necessary documentation.

## SCHOLASTIC LEVEL EXAM POLICY

The American Medical Sciences Center administers the **Scholastic Level Exam (SLE)** test to all its students. The test is designed to measure the student's ability to be successfully trained to perform the tasks associated with the occupations to which the program of instruction is represented to lead. All students must take and pass this test. If a prospective student fails a test, a retest will be given in seven days (only two attempts are permitted within six months). The test is administered in accordance with the test's instructions, rules and time limits. A copy of the test will be maintained in the student's file for five years as per the Bureau's requirements.

## VISA PROCEDURES

AMSC is approved by the Student and Exchange Visitor Program(SEVP) authorized under Department of Homeland Security(DHS) and Department of State as a institution of higher learning for non-immigrant M-1 visa students. Students attending another institution in the United States on an M-1 visa may enroll in AMSC by completing the admissions process filing a Form I-539. It is also possible for prospective students in the United States on some other type of visa to apply to the Immigration and Naturalization Service for change to an M-1 visa. Most classes of nonimmigrants can begin studying while their application is pending. The exceptions are currently in B-1, B-2, or F-2 status. These nonimmigrants cannot begin a program of study prior to approval of their change of status. Before international students may be considered for admission, they must:

- a) Complete the application form; enclose a \$75.00 processing fee.
- b) Provide evidence of completion of high school or equivalent diploma.
- c) Take the admissions entrance SLE test with a score of least 29

Applicants not currently in the U.S. may demonstrate proficiency reading, writing, and speaking English in several ways and should include the documentation with their application.

- a) a TOFEL score of at least 450 or
- b) High school or college transcripts documenting English language skills or
- c) Completion of an appropriate English as a Second Language (ESL) course or
- d) Other equivalent verification of communication skills.

## I-20 CERTIFICATION

After the application process has been completed and all relevant materials have been submitted, the file is reviewed by the admissions committee. If the student fully meets the criteria for admission and has adequate funds to meet the expenses of the program of study, the school obtains specific biographical and financial information about the student which will be necessary to issue a Form I-20, "Certificate of Eligibility for Nonimmigrant Student." Applicants will be notified in a timely manner and will be mailed a Certificate of Eligibility (I-20) along with further information regarding registration and helpful visa information.

## APPLYING FOR A STUDENT M-1 VISA

Prospective nonimmigrant students who are not in the U.S. must apply to the local U.S. consulate for an M-1 visa. This requires a visa interview. The student must bring several items to the interview. The consular officer will need to verify the student's I-20 record electronically in order to process the student visa application. The potential student must pay a SEVIS I-901 fee to the Department of Homeland Security prior to applying for a visa and may prove payment of the fee through the internet at <http://www.fmjfee.com> with a credit card and printed receipt as a evidence that the fee has been paid. For this case you need the information from your I-20 form to fill out the Form I-901. All applicants should be prepared to provide:

- a) Form I-20, signed by the Designated School Official (DSO);
- b) Receipt as a evidence that the fee for Form I-901 has been paid;
- c) Diploma of completion of high school or the equivalent;
- d) Scores from standardized SLE test and documentation of English language skills;
- e) Program Outline with starting and ending date
- f) Financial evidence that shows the student or parents who are sponsoring have sufficient funds;
- g) Completed Form(s) for the Application for Nonimmigrant Visa;
- h) Valid Passport for travel and admission to the United States with a validity date at least six months beyond the applicant's intended period of stay in the United States;

## **TRANSFERRING STUDENTS**

**FROM ONE PROGRAM TO ANOTHER** Should a student wish to transfer from one program to another, she/he must notify the administration with a written notice. There are no charges for a transfer based on the program of study. Transferring Students must take a test prior to any credit transfer. A score of 70% or better is required for each such exam in order to receive credit for that particular course or module. The student's training period will be reduced proportionately but not to exceed 30% of the course content. Students who are granted such credit may have their tuition reduced on a pro rata basis.

**FROM OTHER COLLEGES OR SCHOOLS** Students transferring from other colleges or schools must take a test prior to any credit transfer. A score of 70% or better is required for each such exam in order to receive credit for that particular course or module. The student's training period will be reduced proportionately but not to exceed 30% of the course content. Tuition will be prorated based on the number of credits accepted due to the transfer. Students who are granted such credit may have their tuition reduced on a pro rata basis. If the diploma earned at AMSC is not accepted at this institution to which the student wishes to transfer, he/she may be required to repeat some or all coursework at that institution.

**CREDIT FOR PREVIOUS EDUCATION/WORK** The institution publishes and follows a policy for transfer of credit that requires consideration of credit from other institutions accredited by an agency recognized by the United States Department of Education (USDE) or the Council for Higher Education Accreditation (CHEA). AMSC does not allow credit for advanced placement or experiential learners.

**TRANSFERABLE CREDIT** Because each school makes its own determination as to transferable credit, AMSC has no articulation or transfer agreement with any other college and does not guaranty that any or all other schools and/or colleges will accept its credits.

## **STATE OF CALIFORNIA STUDENT TUITION RECOVERY FUND**

California law requires each institution be assessed a fee relative to the cost of tuition (Education Code Section 94982) upon each enrollment. These fees support the Student Tuition Recovery Fund (STRF), a special fund established by the California Legislation to reimburse students who might otherwise experience a financial loss as a result of

- ① The institution closing,
- ② The institution's breach of its own enrollment agreement for the course of institution,
- ③ The institution declining to pay a court judgment.

This Fund protects only California students. Students who hold a student visa are not considered a California resident. Institutional participation in the STRF fund is mandatory. It is important that enrollees keep a copy of the enrollment agreement, contract, and/or application in order to document enrollment and tuition receipts and 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 notification from the Bureau to the student apprising them of their rights under the STRF, or if no notice of rights is served to the student, within four years of an institution's closure. For further information or instructions contact:

### **BUREAU FOR PRIVATE POSTSECONDARY EDUCATION**

2535 Capital Oaks Drive, Ste. 400

Sacramento, CA 95833

(916) 574-7720

(916) 263-1897

[www.bppve.ca.gov](http://www.bppve.ca.gov)

## **STUDENT RIGHTS/GRIEVANCE PROCEDURE**

All student complaints must be submitted in writing and discussed with the instructors first. If discussion of the problem with the designated faculty member does not produce a satisfactory result, the school administrator, i.e. the Director, will respond to the complaint. A student or any member of the public may file a complaint about the institution with the BPPE at the number below or by completing a complaint form which can be obtained on the bureau's website address below:

The **B**ureau for **P**rivate **P**ostsecondary **E**ducation  
2535 Capital Oaks Drive, Ste. 400  
Sacramento, CA 95833  
(916) 574-7720  
(916) 263-1897  
www.bppve.ca.gov

The **A**ccrediting **B**ureau of **H**ealth **E**ducation  
**S**chools  
7777 Leesburg Pike Suite #314 N.  
Falls Church, Virginia 22043  
(703) 917-9503 Fax (703) 917-4109  
www.abhes.org

## **CONDUCT POLICY**

AMSC is a professional career training school. It is expected that students will groom, attire and behave in a professional manner consistent with standards of the workplace. This includes cleanliness in dress and personal hygiene.

**DRESS CODE AND BEHAVIOR** AMSC does not permit tank tops, blouses or shirts that expose the midsection, shorts, sandals, torn jeans, and any clothing that is generally considered unsuitable in the workplace. All students are expected to adhere to the general rules with regards to dress code, and any specific dress code regulation that a certain department may have as a result of type of training offered. All uncertain questions with in regards to the dress code, as to what is appropriate must be addressed to the President. If the student so chooses to not adhere to the rules, he/she can follow the complaint procedure set forth by the school. All faculty members are responsible to enforce the AMSC dress code policy and send home any student who does not comply with the dress code regulations.

**ILLEGAL DRUGS** The use or sale of non-prescription drugs, including but not limited to marijuana, cocaine, any stimulants and or depressants will not be tolerated on the school campus or at any school-sponsored functions off the premises. Any student believed to be under the influence or in possession of a non-prescribed drug will be dismissed from attending classes pending investigation of the matter. If this happens at a school-sponsored event, the students will be asked to leave the premises immediately. Should it be determined, that the student was under the influence, in possession, or involved in the purchase and/or sale of controlled substances while on or at the premises of an AMSC-sponsored event, that student will be dismissed from school. The findings of the administration will become documentation in the student's file, thus affecting a positive recommendation to future employers. All students receive and sign the AMSC "Drug Information Supplement" and are responsible to abide by the material written in it. There is no excuse for noncompliance with this issue. Later, should it be proven that the student was not involved in the above mentioned activity, he or she will be reinstated and class time will be added to the normal course of completion with the student's consent and understanding. Students are responsible for the use of prescribed drugs. The same academic and social behavior is expected of all students regardless of condition of health as long as they remain in school.

**SMOKING** AMSC maintains a smoke-free environment. Smoking is only permitted in the designated areas outside the school premises. No smoking is permitted in front of the main entrance to the school.

**FOOD AND DRINKS** No food and drinks (with the exception of water) are allowed in the classroom unless so designated by the Administration.

**PERSONAL CALLS AND VISITS** Students are not allowed to use the school phones for personal use. The front desk will only take messages for the student to whom a call is made and such message will be delivered to the student at break time unless it is an emergency. Visitors are also welcome only if a prior arrangement has been made and that the visit will not interfere with class time. In addition, since childcare services are not provided on AMSC premises, students, staff and guests are discouraged from bringing young children into the facility.

**HARASSMENT** The study environment at AMSC will not be impeded or intimidated by hostile or offensive verbal or physical actions based upon race, sex, age, color, religion, physical limitation, ethnic background, national origin or the like.

**SEXUAL HARASSMENT** The American Medical Sciences Center will not tolerate any sexual harassment by students or staff. The school defines sexual harassment as sexual advances made either verbal or physical. The school will not tolerate any hostile or intimidating conduct that interferes with a healthy educational environment or work performance.

**EMERGENCY PROCEDURES** An emergency is to be reported to any staff member or the front desk immediately. No student is to assist in any medical emergency even though s/he has the training to do so. In the case of a fire, all students are to evacuate the building as calmly and orderly as possible since this will be the fastest way to get out of the building. In case of an earthquake, all students and staff are to take shelter under a desk or a table until it is safe to exit the building. Each student must complete an emergency information form notifying the school of his or her physician or contact person in case of illness or injury. A student with a chronic condition should state so on the emergency form. If a student does not wish to receive medical care in case of an emergency, he or she should state so on the emergency information form.

**GROUND FOR DISCIPLINARY ACTION** Unsatisfactory academic or attendance performance, frequent tardiness or early leaving, unprofessional behavior and/or conduct that disrupts the learning process are grounds for disciplinary action.

**DISCIPLINARY PROCEDURES** All disciplinary matters are reviewed by the Administration. The Administrative reviews may include written statements from students and staff and interviews with the parties involved. Decisions by the Administration may result in dismissal, probation, or other appropriate action.

**DISMISSAL** After thorough investigation and discussion with regard to academic or conduct issues, AMSC reserves the right to dismiss any student for whom the continuation of his or her attendance would be a detriment to the student himself/herself, fellow students and or the school.

## ATTENDANCE POLICY

**ABSENCES** Will be considered as excused under the following circumstances: serious illness substantiated by doctor's notes, death or birth in the immediate family. All other absences will be considered as unexcused unless solid reasons are presented in writing verifying mitigating circumstances. Students are advised to notify school officials of their absence.

**TARDINESS/LEAVING EARLY** Tardiness are discouraged since it is disruptive to both the instructor and the students. Excessive tardiness may result in probation. There is however, a 10-minute grace period before a student is marked tardy. Three tardies constitute one absence. Students leaving early will be considered as "left early". Frequent "Left early" without legitimate reasons may be also cause for probation.

**UNSATISFACTORY ATTENDANCE** Students with 14 consecutive absences of calendar days will automatically be withdrawn from their program of study. This policy is based on the attendance requirements set forth by the BPPVE and followed by the school.

**SKIPPING CLASSES** Such action will be considered as an unexcused absence.

**MAKE-UP HOURS AND/OR ASSIGNMENTS** Any missed class time or assignment may require physical make-up time on the campus. Students are responsible to make the necessary arrangements with the appropriate school personnel to complete make-up time or assignments. The appropriate academic department must approve make-up of assignments, tests or retests.

### **LEAVE OF ABSENCE (LOA)**

The duration of the leave of absence may be granted for up to 30 days. Requests for leave must be submitted in writing to the School's Associate Director and must include an anticipated return date and be signed by the student. Students who fail to return from a LOA will be considered dismissed as of the last class day of attendance. As of the same date, the loan repayment process will be initiated. Any refund due will be made within thirty (30) calendar days from the end of an approved leave of absence. The School's Associate Director may grant more than one leaves of absence and/or waive interim satisfactory standards for circumstances of poor health, family crisis, or other significant occurrences outside the control of the student. It must be demonstrated by the student that the circumstances had or will have an adverse impact on the student's satisfactory progress in the academic program. Students will not be assessed additional tuition charges while on their Leave of absence. No waivers will be provided for graduation requirements. Time for an approved leave of absence will not be included in the calculation of a student's maximum program length.

**ATTENDANCE** The school attendance policy is a minimum of 90% attendance during the course of study, which is calculated on a monthly basis. Breach of the school's attendance policy will result in attendance probation. Students placed on attendance probation will have 30 days to bring their cumulative attendance back up to 90%. For DMS program externship grade "A" (90% or more attendance) will be granted automatically to a student for board SPI exam information only. Final exit interview for externship grades may differ from board SPI exam final grades. If applicable, students may receive Federal Financial Aid while on probation. If this is not achieved at the conclusion of the probationary term, the student may have his/her probationary period continued for an additional 30-day term, or may be placed on active suspension for another 30 days. If during this period, the student fails to comply with the opportunity given, he or she will then be terminated.



## UNSATISFACTORY PROGRESS OR ACADEMIC PROBATION

**AMSC** Employs the following procedure for unsatisfactory progress cases: If a student's grade point average is unsatisfactory for a calendar month or module, the student is counseled. If a grade point average is unsatisfactory for an additional month or module, the student will be placed on academic probation and be given a maximum of two months to bring their cumulative grade point average to 70% or be terminated from the course of study. Should mitigating circumstances be present, the student will be placed on active suspension for a maximum of one month and be given a last opportunity to comply with the 70% grade point average or termination. The institution does not offer non-credit or remedial courses.

**RE-ENTRIES** Students must go through re-entry procedures from an inactive/withdrawn status. Students on a dismissed or terminated status may appeal to the administration in writing for re-entry consideration. If the appeal is approved by the administration; i.e. the administration within five (5) days determined that there were mitigating circumstances or valid reasons were presented by the student, then the student could re-enter in his or her program and lost time would be added to the initial scheduled graduation date.

**MAXIMUM TIME FRAME** All students must complete their programs of study within one and one-half time the period specified on their enrollment agreement. This timeframe takes into consideration the session for which the student is enrolled; i.e. morning, evening, afternoon or weekends. To ensure quantitative progress within each program, the school will assess such progress at midpoints of the academic year. At such time, the school will be able to determine whether the student can successfully complete the program within the established timeframes. If for any reason the program is not completed within the one and one half time period the student will be terminated from the school.

**INCOMPLETE GRADES** Incomplete grades will revert to failing grades if not completed prior to graduation or prior to the commencement of any externship training if applicable.

**SUBJECT WITHDRAWALS** The school does not allow subject withdrawals in a program of study.

**COURSE REPETITIONS** Should a student need to repeat a course/class due to non-credit, non-punitive, or remedial reasons, it will be allowed and counted as course/class attempted and the higher grade will be calculated in computing the grade point average.

**PROBATION** Is a status that may result due to an academic, financial or conduct problem-requiring correction. The student on probation will be permitted to attend classes. She/he must remedy the condition for probation within a specified time period. Failing to do so may result in continuation of probation, suspension or dismissal.

**BRUSH-UP CLASSES** The school provides brush-up classes for the graduates to improve their already existing skills. Students can always let the school know that they need to come back for brush-up skills and the school will arrange a schedule for their attendance.

## SATISFACTORY ACADEMIC PROGRESS

The school's grading system in all of its programs is as follows:

<b>A (Excellent)</b> 90% - 100%	<b>B (Good);</b> 80% - 89%	<b>C (Average)</b> 70% - 79%	<b>F (Not Passing)</b> <70%
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## CREDIT /CLOCK HOUR CONVERSIONS

For all programs of study, the conversion from clock hours to credit hours is as follows:

15 Lecture	Clock Hours	=	1 Semester Credit Hour
30 Laboratory	Clock Hours	=	1 Semester Credit Hour
45 Externship	Clock Hours	=	1 Semester Credit Hour

## SAMPLE OF ACADEMIC GRADING SCALE

COMPONENT	FORMULA	AVERAGE GRADE	FINAL GRADE
Quizzes	10%	75%	7.5
Module Tests	20%	80%	16.0
Final Exam	50%	85%	42.50
Class Participation	10%	80%	8.0
Attendance	10%	75%	7.5
Totals	100%	N/A	81.50

## HEALTH CARE SERVICES

AMSC does not provide health care services on the premises. Any medical emergency should be reported to the front desk immediately. These reports will be transmitted to the police, fire or emergency medical providers.

## PLACEMENT SERVICES

AMSC maintains job placement assistance and will make every effort to supply employment leads to all graduates. The school receives many calls from employers requesting its graduates for career openings. No guarantees are made concerning job placement as an inducement to enroll, nor can promises be made that placement is assured upon graduation.

## AMSC CALENDAR

AMSC observes the following holidays during which the school will be closed:

NEW YEAR DAYS	-	January	1, 2
MARTIN LUTHER KING DAY	-	January	16
PRESIDENT'S DAY	-	February	20
MEMORIAL DAY	-	May	28
INDEPENDENCE	-	July	4
LABOR DAY	-	September	3
COLUMBUS DAY OBSERVED	-	October	8
VETERANS DAY	-	November	11
THANKSGIVING DAYS	-	November	22,23
CHRISTMAS VACATION	-	December	25, 26

Constitution Day observance commemorates the anniversary of the signing of the U.S. Constitution on Sept. 17, 1787, and honors and celebrates the privileges and responsibilities of U.S. citizenship. AMSC College will observe Constitution and Citizenship Day with a voter registration drive, free give-aways and a chance to win a prize. Voter registration will be available for non-registered citizens who wish to Vote. The Financial Aid office will have a voter registration table in the Campus foyer, and Student Ambassadors will be distributing free copies of the U.S. Constitution.

## GRADUATION REQUIREMENTS

Graduation from all programs of study is accomplished by satisfactory completion of all course requirements, maintaining satisfactory attendance and a minimum grade point average of 70%. Upon graduation, a student will receive a diploma in his/her program of study.

## **CAMPUS SECURITY**

AMSC is concerned with the security of its students and staff. The campus security is administered in accordance with the law. The school has adopted and implemented Section 668.48 of Public Law 101-542, "The Student Right-to-Know and Campus Security Act" effective September 1, 1992. The physical facility goes through periodic inspection as required by the State of California/county as well as the city agencies.

- Students are provided with safety instructions at the time of enrollment.
- Fire department visits on a regular basis.
- CALOSHA requirements are followed.
- Fire escape routes are posted.
- Earthquake procedures are routinely reviewed with staff and students.

Health, safety, earthquake, security are handled by the Director of Fire, Life & Safety

Any criminal action or emergency situation must immediately be reported to the front desk. Any such reports will be transmitted to the appropriate persons such as the Director, fire department, police, emergency medical services, etc. Unescorted persons have no access to any part of the AMSC facility beyond the reception area except already enrolled students or faculty.

The following procedure will be followed to insure campus security:

- The staff is trained to be aware of any unusual occurrences/behaviors on or around the campus grounds. Also, the staff is trained in notifying proper authorities.
- Certified instructors monitor all classrooms.
- The School Director, or his designee, secures the building each evening and insures that all students, faculty and staff have properly exited out of the building.

Campus training/awareness is provided to each new student and to newly hired employees during their orientation session. During this orientation session, the following information regarding crime prevention is provided and discussed:

- Each student and employee of the school is responsible for his or her personal belongings.
- Any infraction of the regulation relating to Public Law 101-542 must be reported to the proper school personnel immediately.
- All students and employees are responsible for conducting themselves as professionals at all times while on campus and/or while attending school functions.
- Students are provided with school rules and regulations during orientation; employees receive an employee handbook.
- Any student or employee who is found in possession of, using or selling alcoholic beverages and/or illegal drugs on campus will be suspended or terminated from school.
- All students and employees are provided with information during orientation, regarding the 'Drug Free' status of the school campus.

Students and employees sign a statement that they are aware of this policy and will abide by it.

The following steps will be taken in the event of a criminal action or other emergencies:

- The School Director, or designated individual in his/her absence, is the first person to be notified in case of criminal action or other types of emergencies occurring on campus. The second contact person would be the Associate Director of the school.
- The school will immediately notify the proper law authorities. A written statement from the victim will be obtained.
- The school will abide by all legal requirements set forth by law enforcement.
- Medical and follow-up treatment services will be made available to the victim if required.

The management of the school will be in contact with the victim regarding the status of medical treatment and law enforcement and/or necessary action taken regarding disciplinary proceedings and/or results of disciplinary action or appeal And Confidentiality will be guaranteed.

## 2011 ANNUAL CAMPUS SECURITY REPORT

Murder	Aggravated Assault	Rape	Burglary	Robbery	Motor/Vehicle Theft
0	0	0	0	0	0

### CLASS SIZE

Lecture classes will not exceed a ratio of one instructor/lecture to 15 students. Laboratory classes will have a ratio of one instructor to 15 students.

### SCHEDULE OF CLASSES

Each of the courses offered by American Medical Sciences Center is scheduled to start six times a year; i.e. once every two months.

### CLASSROOM RESPONSIBILITY

Each student is responsible for the condition of his or her classroom including appearance of the room and the handling and arrangement of the equipment. Misuse of equipment will not be tolerated and may result in the student's dismissal and include billing for the damages caused on purpose. However, any accidents or breakdowns must be reported immediately. Students must understand that the condition of the classroom and equipment exists for their convenience and training; therefore, it is in the student's best interest to maintain both in good condition.

### PERSONAL PROPERTY

Students are responsible for their books, uniforms and other personal items. AMSC is not responsible for any person's lost or stolen items.

### CHANGE OF PERSONAL INFORMATION

Each student is responsible to notify the school of his or her new name, address, phone number, employment information (if applicable) and emergency contact person.

### STUDENT RECORDS

Official records are maintained for each student from the time of enrollment. All students and parents of tax-dependent students have the right to inspect information contained within the student's file. All student records will be maintained for a period of five years according to State law requirements.

### ENGLISH AS A SECOND LANGUAGE

The American Medical Sciences Center does not provide English as a Second Language programs. No portion of a program's delivered in a language other than English.

## TUITION POLICY

Tuition is the major part of the cost of study and is agreed upon at the time of enrollment. The Enrollment Agreement reflects the tuition, other fees that may be applicable, and the terms of the agreement. Tuition is due and payable on the first day of class unless other arrangements have been made with the Administration. It is expected that the agreed upon terms will be honored by each student; i.e. payments will be made consistently and on time.

## ENROLLMENT AGREEMENT

No student may attend class without a valid student enrollment agreement. However, all tuition and other charges for the time the student was in attendance, under a valid enrollment agreement, will be honored as due or owing. The Enrollment Agreement protects the students from tuition increases for the period covered by the Agreement. It is the student's responsibility to maintain a current and valid Enrollment Agreement with the school.

## DESCRIPTION OF FACULTY AND QUALIFICATIONS

Each faculty member employed by the American Medical Sciences Center must be a qualified educator. The instructor must have the necessary education in the field in which she/he is conducting instruction; i.e. possess three years of education or experience or both which will qualify the candidate for hiring consideration.

## OCCUPATIONS TO WHICH THE COURSE OF INSTRUCTION LEAD

The Students who graduate from the DMS, GAS, EVT courses are qualified to apply for positions as Ultrasound Technologists, who perform the procedures related to General Sonography, including Vascular and Echocardiographic procedures. Medical Assistants perform administrative and clinical tasks to keep the offices of physicians, podiatrists, chiropractors, and other health practitioners and facilities working properly.

## PROGRAMS LENGTH

#	DIPLOMA PROGRAMS	TOTAL CLOCK / HOURS	# OF WEEKS
1	DIAGNOSTIC MEDICAL SONOGRAPHY	1980	78
2	GENERAL ABDOMINAL SONOGRAPHY	810	36
3	ECHOVASCULAR TECHNOLOGY	720	30
4	MEDICAL ASSISTANT	960	36

## FEES, CHARGES AND EXPENSES

PROGRAMS	TUITION	REGISTRATION	TEXTBOOKS, OTHER LEARNING MEDIA	UNIFORMS, SPECIAL PROTECTIVE CLOTHING	TOTAL
DIAGNOSTIC MEDICAL SONOGRAPHY	\$28,900.00	\$75.00	\$500.00	100.00	\$29,575.00
GENERAL ABDOMINAL SONOGRAPHY	\$15,500.00	\$75.00	\$400.00	\$50.00	\$16,025.00
ECHOVASCULAR TECHNOLOGY	\$5,475.00	\$75.00	\$400.00	\$50.00	\$6,000.00
MEDICAL ASSISTANT	\$9,000.00	\$75.00	\$300.00	100.00	\$9,475.00

## **CANCELLATION / WITHDRAWALS POLICY**

**CANCELLATION** - The student has the right to cancel the enrollment agreement and obtain a refund of charges paid through attendance at the first class session, or the seventh day after enrollment, whichever is later. Cancellation will occur when the student submits written notice of cancellation to the school at the specified address noted in the Enrollment Agreement.

### **WITHDRAWALS**

#### **Official Withdrawal**

A student will automatically be withdrawn from the program for the following reasons:

- Failure to return from an approved leave of absence on the scheduled return date.
- Failure to maintain satisfactory progress for two consecutive modules.
- Failure to fulfill financial agreements.
- Failing any course in the program twice during the one enrollment period

#### **Unofficial Withdrawal**

If the student fails to attend school for more than 14 consecutive days, the school will consider the student a drop and automatically withdraw him/her from the program.

The student has the right to cancel the enrollment agreement and obtain a refund of charges paid through attendance at the first class session, or the seventh day after enrollment, whichever is later following the first class the student attended, the school will remit a refund, less a registration fee not to exceed \$75.00, within 30 days following their withdrawal. The student is obligated to pay only for educational services rendered and for unreturned books or equipment. The refund shall be the amount they paid for instruction multiplied by a fraction, the numerator of which is the number of clock hours of instruction which they have not received but for which they have paid, and the denominator of which is the total number of clock hours of instruction for which they have paid. If they obtain books or equipment, as specified in the enrollment agreement as a separate charge, and return them in good condition within 30 days following the date of their withdrawal, the school shall refund the charge for the books or equipment paid by them. If they fail to return books or equipment in good condition within the 30-day period, the school may offset against the refund the documented cost for books or equipment exceeding the prorated refund amount. For a list of these costs, see the list on the front of the enrollment agreement. **IF THE AMOUNT THAT THEY OWED IS MORE THAN THE AMOUNT THAT THEY HAVE ALREADY PAID, THEN THEY WILL HAVE TO MAKE ARRANGEMENTS TO PAY IT.**

## **PAYMENT PLANS**

The following payment plans apply to all students. The non-refundable \$75 registration fee is due on or before the first day of class, along with the down payment agreed to at the point of enrollment. The balance for the remaining charges of the program of study is paid in equal monthly installments during the student's enrollment period. Scheduled tuition payments will be billed monthly and mailed directly to the student's attention. Once the loan is obtained, the student has the responsibility to repay the full amount of the loan plus interest, less the amount of any refund. If any part of the tuition has been paid by the student, he/she is entitled to a refund of the moneys not paid from federal student financial aid program funds.

## **FINANCIAL AID SERVICES**

Prior to enrolling at the AMSC, all applicants are encouraged to explore the availability of financial aid program. The financial aid officer provides financial aid information and application assistance. They will help you clearly understand your eligibility status before entering into a contractual agreement. Also, the school will observe its financial situation and to be useful to the community it may offer financial support of its own. The school may provide financial support for Veterans, former students and unemployed.



## FINANCIAL AID ELIGIBILITY REQUIREMENTS

The Free Application For Federal Student Financial Aid (FAFSA) asks a series of questions that will determine your eligibility and dependency status. The eligibility requirements include:

- Being an U.S. citizen, or permanent resident in the United States.
- Being enrolled in an eligible program.
- Having a valid social security number
- Making satisfactory academic progress
- Being registered for the draft with Selective Service, if you are a male who is at least 18.
- Not being currently enrolled in high school
- Not having previously received a bachelor's degree (FSEOG AND FEDERAL Pell programs)



## TUITION REFUND POLICY

The school realizes that under certain circumstances an enrolled student may not be able to continue his or her educational training. Accordingly, the school has a policy for equitable tuition adjustment. Records are maintained on tuition refunds and enrollment cancellations. Governmental or accrediting agency data is included if applicable. The refund policy of the school is published in the catalog and on the Enrollment Agreement. Both documents clearly state the obligations of the school and the student in cases of cancellation or withdrawal. For students who cancel their contracts prior to class starts, all refunds due will be made within thirty (30) days of the first day of class or the date of cancellation. For enrolled students, all refunds due will be made based upon the last date of attendance and are paid within thirty (30) days from the documented withdrawal date.

**RETURN OF TITLE IV FUNDS** -If the student has received Title IV student financial assistance funds, a "Return of Title IV Aid" calculation is used to determine the amount of Title IV aid funds a recipient is allowed to retain towards their educational costs.

The Percentage of Title IV Aid earned is calculated by determining the scheduled calendar days completed in the payment period divided by the total calendar days in the payment period. Excluded are scheduled breaks of 5 days or more and days that the student was on an approved leave of absence. If this amount is greater than 60%, the earned percentage is 100%. The Amount of Title IV Aid Earned by the student is the Percentage of Title IV Aid earned times the total Title IV Aid disbursed plus the Title IV Aid that could have been disbursed for the payment period. All credit balances over \$1.00 will be issued to students within 14 days after the credit balance occurs.

**REJECTION OF AN APPLICANT BY THE SCHOOL** - Should the school reject an applicant for admission for any reason; the applicant will be entitled to a refund of monies paid.



## SAMPLE REFUND CALCULATION

Assume that a student, upon enrollment in a 400-hour course, pays \$2000.00 for tuition, \$75.00 for registration and \$150.00 (documented cost to school) for equipment as specified in the Enrollment Agreement and withdraws after completing 100 hours without returning the equipment he/she obtained. The pro rata refund to the student would be \$1,500 based on the calculation stated below.

Tuition Paid	Refund	Refund	Refund	No refund
100%	10%	25%	50%	Beyond 60%
\$2,000	\$200.00	\$500.00	\$1,000	\$0.00

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## PROGRAMS OF STUDY

### **SONOGRAPHY PROGRAMS ( DMS , GAS , EVT )**

**Ultrasound Technician is an extremely dynamic and challenging profession that includes a thorough understanding of human anatomy and physiology, pathophysiology, sectional anatomy, diagnostic imaging, ultrasound physics, and ultrasound techniques in image production. Ultrasound Technician will work side by side with physicians, nurses and radiology department staff developing images by sound waves used for diagnostic and prognostic evaluations. AMSC develops the ultrasound programs and updates curriculums as needed to ensure the quality of education and clinical experience of the students. The Diagnostic Medical Sonography program at AMSC is designed to prepare students to perform diagnostic ultrasound examinations required of an entry-level sonographer to include, but not be limited to, the Abdomen, Gynecology, Obstetrics, peripheral Vascular, Superficial and cardiac structures. The core curriculum is structured to include an on-campus lecture component, an on-campus imaging laboratory component, and an off-campus integrated clinical component. The student will have the opportunity to study the anatomy, physiology and pathology of scanned organ systems, recognize the sonographic patterns of the organs, learn the protocols for a logical and thorough survey of the organs, and provide accurate and technical impressions to the interpreting physician. The Program is to provide the didactic and clinical skills needed to enable the student to perform the Sonographic requirements published or supported by nationally recognized professional organizations.**

### **MEDICAL ASSISTANT PROGRAM**

**Medical assistants perform administrative and clinical tasks to keep the offices of physicians, podiatrists, chiropractors, and other health practitioners and facilities working properly. The duties of medical assistants vary from office to office, depending on the location and size of the practice and single practitioner office or multi-specialty practice. In small practices, medical assistants usually do many different kinds of tasks, handling both administrative and clinical duties and reporting directly to an office manager, physician, or other health practitioner. Those in large practices tend to specialize in a particular area, under the supervision of department administrators. This program is designed to prepare you through lecture and hands-on training to prepare you for entry-level job as a medical assistant. The training is provided as a residency program only. Outside work is assigned and is part of your overall grade for all of the modules so you must allocate time for outside work. You will be given a syllabus at the beginning of every module that explains everything you would need to know about the module including how much time you should allocate for outside work. .**

## **DIAGNOSTIC MEDICAL SONOGRAPHY**

**DIPLOMA PROGRAM    D.O.T. CODE 078.364-010**  
**78.5 SEMESTER CREDIT HOURS, 1980 CLOCK HOURS, 78 WEEKS**

**EDUCATIONAL OBJECTIVE**    The objective is to provide the didactic and clinical skills needed to enable the student to perform the Abdominal, Vascular, and Echocardiographic requirements published or supported by nationally recognized professional organizations.

**PROFESSIONAL DUTIES**        Graduates will function as an integral part of the diagnostic medical imaging team, providing patient services efficiently and in a professional, sensitive manner. Duties may include performing ultrasound scans of abdominal, echocardiographic and vascular parts.

**GRADUATION REQUIREMENTS**    Graduates must successfully complete all courses of the program with a minimum grade of 70% and all other curriculum requirements for their course of study. Students must perform the clinical portion of their training in an approved medical facility and receive a satisfactory evaluation. Graduation is acknowledged by awarding a diploma, which further allows them to take the ARDMS test.

### **DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM OUTLINE**

MOD ULES	MODULES NAME	COURSES NAME	COURSE TITLE	LECT CLOCK HOURS	LAB CLOCK HOURS	PRACT CLOCK HOURS	TOTAL CLOCK HOURS	TOTAL CREDITS HOURS
<b>1</b>	<b>GENERAL EDUCATION PRE-REQUISITE COURSES</b>	Medical Terminology and Career Development	DMS-1.1	12.0	0.0	0.0	12.0	0.5
		Medical Ethics, Medical Law, and Communications Skills	DMS-1.2	8.0	0.0	0.0	8.0	0.5
		General Anatomy, Physiology and Pathophysiology	DMS-1.3	20.0	0.0	0.0	20.0	1.0
		Basic Algebra, Mathematics and Physics	DMS-1.4	20.0	0.0	0.0	20.0	1.0
		Scanning Techniques and Basic Patient Care	DMS-1.5	16.0	4.0	0.0	20.0	1.0
<b>2</b>	<b>ABDOMINAL ULTRASOUND</b>	Ultrasound Physics-I	DMS-2.1	30.0	0.0	0.0	30.0	2.0
		Ultrasound Physics-II	DMS-2.2	30.0	0.0	0.0	30.0	2.0
		Ultrasound Physics-III	DMS-2.3	30.0	0.0	0.0	30.0	2.0
		Abdominal Vasculature Peritoneal Cavity	DMS-2.4	32.0	32.0	0.0	64.0	3.0
		Liver	DMS-2.5	32.0	32.0	0.0	64.0	3.0
		Gallbladder and Biliary Tree	DMS-2.6	46.0	16.0	0.0	62.0	3.5
		Pancreas and Spleen	DMS-2.7	32.0	32.0	0.0	64.0	3.0
		Urinary Tract	DMS-2.8	32.0	32.0	0.0	64.0	3.0
		Genital and Superficial Structure	DMS-2.9	46.0	16.0	0.0	62.0	3.5

## DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM OUTLINE (cont.)

MOD ULES	MODULES NAME	COURSES NAME	COURSE TITLE	LECT CLOCK HOURS	LAB CLOCK HOURS	PRACT CLOCK HOURS	TOTAL CLOCK HOURS	TOTAL CREDITS HOURS
3	OBSTETRICAL AND GYNECOLOGICAL ULTRASOUND	Ultrasound Physics-IV	DMS-3.1	30.0	0.0	0.0	30.0	2.0
		Gynecology	DMS-3.2	30.0	32.0	0.0	62.0	3.0
		Obstetrics	DMS-3.3	20.0	8.0	0.0	28.0	1.5
4	NEONATAL ULTRASOUND	Neonatal	DMS-4.1	20.0	8.0	0.0	28.0	1.5
5	VASCULAR TECHNOLOGY	Ultrasound Physics-V	DMS-5.1	30.0	0.0	0.0	30.0	2.0
		Cerebrovascular System	DMS-5.2	32.0	0.0	0.0	32.0	2.0
		Upper extremities; Arterial and Venous	DMS-5.3	48.0	16.0	0.0	64.0	3.5
		Lower extremities; Arterial and Venous	DMS-5.4	48.0	16.0	0.0	64.0	3.5
6	CARDIAC ULTRASOUND	Cardiac Fundamentals, Principles of Cardiac Pharmacology	DMS-6.1	20.0	8.0	0.0	28.0	1.5
		Pathological Mechanism and Non-Invasive Diagnostic Tests	DMS-6.2	20.0	8.0	0.0	28.0	1.5
		Hemodynamics and Practical Application of Echocardiography	DMS-6.3	48.0	24.0	0.0	72.0	4.0
		Disease State Identification	DMS-6.4	48.0	16.0	0.0	64.0	3.5
7	CLINICAL	Externships	DMS-7.1	0.00	0.00	900	900	20.0
<b>TOTAL</b>				<b>780</b>	<b>300</b>	<b>900</b>	<b>1980</b>	<b>78.5</b>

### EXAMINATION SCHEDULE

Students take a module exam after completion of all the courses in each module.  
The students also take a final exam at the conclusion of all didactic modules.

### SUCCESSFUL COMPLETION

A score of 70% or better is required for each module exam in order to receive credit for that particular module. Students must satisfactorily perform the practical portion of their training in an approved facility and receive a satisfactory evaluation. With the completion of this diploma program, which includes the externship, students may choose an option of sitting for a certification test with the RDMS(Registry of Diagnostic Medical Sonographers), RDCS(Registered of Diagnostic Cardiac Sonographers) or RVT (Registered Vascular Technologist), provided through ARDMS (American Registry of Diagnostic Medical Sonographers). For prerequisite information please visit the ardsm.org website, Examination Prerequisite, Chart page 12.

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# **DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM DESCRIPTIONS**

## **MODULE 1 GENERAL EDUCATION PRE-REQUISITE COURSES**

**General Education pre-requisite courses within a Diagnostic Medical Sonography diploma program is intended to create a well-rounded individual with good general knowledge of several areas outside the specific major field of the graduate. At American Medical Sciences Center, the general education component is made up of the following courses:**

- DMS-1.1 MEDICAL TERMINOLOGY AND CAREER DEVELOPMENT**
- DMS-1.2 MEDICAL ETHICS, MEDICAL LAW AND COMMUNICATIONS SKILLS**
- DMS-1.3 GENERAL ANATOMY, PHYSIOLOGY AND PATHOPHYSIOLOGY**
- DMS-1.4 BASIC ALGEBRA, MATHEMATICS AND PHYSICS**
- DMS-1.5 SCANNING TECHNIQUES AND BASIC PATIENT CARE**

## **MODULE 2 GENERAL ULTRASOUND**

**In this module, students will gain an understanding of the normal anatomy, anatomic variants, normal physiology and pathological conditions of the organs of the abdominal-pelvic cavity. At American Medical Sciences Center, the General Ultrasound component is made up of the following courses:**

- DMS-2.1 ULTRASOUND PHYSICS-I**
- DMS-2.2 ULTRASOUND PHYSICS-II**
- DMS-2.3 ULTRASOUND PHYSICS-III**
- DMS-2.4 ABDOMINAL VASCULATURE, PERITONEAL CAVITY**
- DMS-2.5 LIVER**
- DMS-2.6 GALLBLADDER AND BILIARY TREE**
- DMS-2.7 PANCREAS AND SPLEEN**
- DMS-2.8 URINARY TRACT**
- DMS-2.9 GENITAL AND SUPERFICIAL STRUCTURE**

## **MODULE 3 OBSTETRICAL AND GYNECOLOGICAL ULTRASOUND**

**In this module, students will gain an understanding of the normal anatomy, anatomic variants, normal physiology and pathological conditions of the organs of the abdominal-pelvic cavity. At American Medical Sciences Center, the Obstetrical and Gynecological Ultrasound component is made up of the following courses:**

- DMS-3.1 ULTRASOUND PHYSICS-IV**
- DMS-3.2 GYNECOLOGY**
- DMS-3.3 OBSTETRICS**

## **MODULE 4 NEONATAL ULTRASOUND**

**In this module, students will gain an understanding of the normal neonatal structures includes clinical indications, pathological conditions of the organs imaging techniques and report writing. At American Medical Sciences Center, the neonatal ultrasound component is made up of the following course:**

- DMS- 4.1 NEONATAL**

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# **DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM DESCRIPTIONS**

## **MODULE 5 VASCULAR TECHNOLOGY**

**This module is designed for students to gain knowledge in ultrasound imaging of the upper and lower extremity. It includes a brief anatomical review of the systemic arteries and systemic veins. The students will be able to identify of extra and intra cranial cerebrovascular systems. Cross-sectional anatomy of these structures and their appearance on the sonogram will also be discussed. Classroom instruction will be coordinated with practical activities.**

**DMS-5.1 ULTRASOUND PHYSICS-V**

**DMS-5.2 CEREBROVASCULAR SYSTEM**

**DMS-5.3 UPPER EXTREMITIES; ARTERIAL AND VENOUS**

**DMS-5.4 LOWER EXTREMITIES; ARTERIAL AND VENOUS**

## **MODULE 6 CARDIAC ULTRASOUND**

**The purpose of this module is to explore in detail the construction and dynamics of the cardiovascular system. Topics include anatomical and physiological considerations, cardiac pumping action and its regulation, basic hemodynamics, and systemic and pulmonary circulation. Classroom instruction will be coordinated with certain lab activities. This module will prepare the student to recognize the pathological processes of the cardiovascular system.**

**DMS-6.1 CARDIAC FUNDAMENTALS, PRINCIPLES OF CARDIAC PHARMACOLOGY**

**DMS-6.2 PATHOLOGICAL MECHANISM AND NON-INVASIVE DIAGNOSTIC TESTS**

**DMS-6.3 HEMODYNAMICS AND PRACTICAL APPLICATION OF ECHOCARDIOGRAPHY**

**DMS-6.4 DISEASE STATE IDENTIFICATION**

## **MODULE 7 CLINICAL**

**Students participate in a clinical externship where they will gain hands-on training. The clinical part of program provides students with actual hands-on experience in diagnostic care to patients of all ages and stages of disease in doctor/imaging clinics affiliated with American Medical Sciences Center.**

**DMS-7.1 EXTERNSHIPS**

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## DIAGNOSTIC MEDICAL SONOGRAPHY COURSE DESCRIPTIONS

**COURSE NAME:** MEDICAL TERMINOLOGY AND  
CAREER DEVELOPMENT

**COURSE TITLE:** DMS-1.1

**PREREQUISITE:** NONE

**LECTURE HOURS:** 12.0

**LABORATORY HOURS:** 0.0

**TOTAL CLOCK HOURS:** 12.0

**TOTAL CREDITS HOURS:** 0.5

**SUBJECTS:**

- ☒ Structure of medical words (roots, prefixes)
- ☒ Abbreviations
- ☒ Sonography specific terminology
- ☒ Preparation for job search, study skills
- ☒ The job search (resume writing, interviewing)
- ☒ Continued advancement (registries/credentials)

Students learn medical and specific sonographic terminology. This course is designed to assist the student with personal and professional development for successful employment with a concentration on developing a positive self-image, assessing competitive strengths, career expectations, learning job search techniques, in addition to written skills and current resume preparation.

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**COURSE NAME:** MEDICAL ETHICS,  
COMMUNICATIONS SKILLS AND MEDICAL LAW

**COURSE TITLE:** DMS-1.2

**PREREQUISITE:** DMS-1.1

**LECTURE HOURS:** 8.0

**LABORATORY HOURS:** 0.0

**TOTAL CLOCK HOURS:** 8.0

**TOTAL CREDITS HOURS:** 0.5

**SUBJECTS:**

- ☒ Ethical decision-making
- ☒ Legal principles
- ☒ Patient bill of right
- ☒ Patient communications
- ☒ Staff communications, telecommunications
- ☒ Writing technical reports
- ☒ Legal issues of patient confidentiality

This course familiarizes the students with an understanding of the specific laws and regulations that impact the healthcare environment and fundamental medical ethics. Students are introduced to medical office safety, security, and emergency provisions. This course is designed to develop the student's ability to communicate effectively. Emphasis is placed upon the basic elements of workplace effectiveness (Sufficient to perform in a traditional medical work environment including patient interviews, chart evaluations, diagnostic testing protocols).

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**COURSE NAME:** GENERAL ANATOMY,  
PHYSIOLOGY AND PATHOPHYSIOLOGY

**COURSE TITLE:** DMS-1.3

**PREREQUISITE:** DMS-1.2

**LECTURE HOURS:** 20.0

**LABORATORY HOURS:** 0.0

**TOTAL CLOCK HOURS:** 20.0

**TOTAL CREDITS HOURS:** 1.0

**SUBJECTS:**

- ☒ Cardiopulmonary/cardiovascular systems
- ☒ Central Nervous system
- ☒ Gastrointestinal system
- ☒ Musculoskeletal system
- ☒ Reproductive systems
- ☒ Urinary system
- ☒ Endocrine system
- ☒ Hematopoietic system
- ☒ Immune system

The students will be introduced to the fundamentals of chemistry and human anatomy, physiology, and pathophysiology. The course includes the ability to recognize and identify all major body systems and understanding the primary physiological reactions of the human body.

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COURSE DESCRIPTIONS (cont.)

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**COURSE NAME:** BASIC ALGEBRA,  
MATHEMATICS AND PHYSICS

**COURSE TITLE** DMS-1.4  
**PREREQUISITE** NONE  
**LECTURE HOURS** 20.0  
**LABORATORY HOURS** 0.0  
**TOTAL CLOCK HOURS** 20.0  
**TOTAL CREDITS HOURS** 1.0

**SUBJECTS:**

- ☒ Basic Algebra
- ☒ Measurements, calculations, metric conversions
- ☒ Linear equation and inequalities
- ☒ Principles of motion, work and heat
- ☒ Principles of acoustic and light waves
- ☒ Principles of Ultrasound Physics
- ☒ Sound production and propagation
- ☒ Transducer architecture and selection
- ☒ Bio-effects, Artifacts, and safety

This course is designed to provide students with an understanding of the general principles and theories underlying algebra, mathematics and fundamental physics. This course builds on the principles of linear equations, graphing, functions, rational expressions, radicals and systems of equations. Emphasis is placed on critical thinking and problem-solving skills. This course is designed to provide students with an understanding of the general principles and theories underlying Ultrasound Physics.

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**COURSE NAME:** SCANNING TECHNIQUES AND  
BASIC PATIENT CARE

**COURSE TITLE:** DMS-1.5  
**PREREQUISITE:** DMS-1.3  
**LECTURE HOURS:** 16.0  
**LABORATORY HOURS:** 4.0  
**TOTAL CLOCK HOURS:** 20.0  
**TOTAL CREDITS HOURS:** 1.0

**SUBJECTS:**

- ☒ Introduction to scanning methods
- ☒ Purpose and function of various scanning Techniques and patient safety
- ☒ Patient communication strategies for dealing with difficult patients
- ☒ Infection control and universal precaution procedures
- ☒ Principles of psychological support
- ☒ Emergency conditions and procedures
- ☒ Transfer/transportation techniques
- ☒ Legal/ethical issues

The class teaches the student the basic concept of sonographic appearance, patient position during sonographic examinations, and interpretation of sonographic characteristics. Classroom instruction will be coordinated with certain lab activities. The students will be introduced by the format of books, handouts, and video-representation.

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**COURSE NAME:** ULTRASOUND PHYSICS-I

**COURSE TITLE:** DMS-2.1  
**PREREQUISITE:** DMS-1.4  
**LECTURE HOURS:** 30.0  
**LABORATORY HOURS:** 0.0  
**TOTAL CLOCK HOURS:** 30.0  
**TOTAL CREDITS HOURS:** 2.0

**SUBJECTS:**

- ☒ Continuous Wave
- ☒ Pulse Wave
- ☒ Intensity and Attenuation
- ☒ Impedances and Angles

This course will provide the student with theoretical understanding of the principles of ultrasound physics as it applies to diagnostic medical imaging. The course material will focus on physical principles of sound energy, sound production, transmission and reflection. This course provides an introduction to and an overview of the principles of ultrasound physics as it applies to diagnostic medical imaging. Emphasis will be placed on physical principles of sound waves, and its categorization.

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COURSE DESCRIPTIONS (cont.)

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**COURSE NAME:** ULTRASOUND PHYSICS-II

**COURSE TITLE:** DMS-2.2  
**PREREQUISITE:** DMS-2.1  
**LECTURE HOURS:** 30.0  
**LABORATORY HOURS:** 0.0  
**TOTAL CLOCK HOURS:** 30.0  
**TOTAL CREDITS HOURS:** 2.0

**SUBJECTS:**

☒ Transducers Architectures  
☒ Beam formers (Near, far zones)  
☒ Type of transducers  
☒ Set up ultrasound system  
☒ Problems and Solutions

The course material will focus on physical principles of sound energy, transducers architecture, sound production and beam structural design. This module teaches the student the developmental concept of sonographic appearance; architectures of the modern technology scan heads and potential artifacts.

**COURSE NAME:** ULTRASOUND PHYSICS-III

**COURSE TITLE:** DMS-2.3  
**PREREQUISITE:** DMS-2.2  
**LECTURE HOURS:** 30.0  
**LABORATORY HOURS:** 0.0  
**TOTAL CLOCK HOURS:** 30.0  
**TOTAL CREDITS HOURS:** 2.0

**SUBJECTS:**

☒ Doppler Effect  
☒ Doppler Equations and Hemodynamics  
☒ Circulatory System  
☒ Critical Stenosis  
☒ Energy, Pressure, Flow resistance  
☒ Spectral Instruments

In this course, the students learn the fundamentals of the Doppler physics. This course teaches the student the developmental concept of sonographic appearance including spectral and color Doppler instruments. Classroom instruction will be coordinated with certain instrumental activities include appropriate adjustment to M-mode, color flow and spectral trace.

**COURSE NAME:** ABDOMINAL VASCULATURE,  
PERITONEAL CAVITY

**COURSE TITLE:** DMS-2.4  
**PREREQUISITE:** DMS-1.5  
**LECTURE HOURS:** 32.0  
**LABORATORY HOURS:** 32.0  
**TOTAL CLOCK HOURS:** 64.0  
**TOTAL CREDITS HOURS:** 3.0

**SUBJECTS:**

☒ Abdominal Cavities  
☒ Abdominal Vascular System  
☒ Cross-Sectional Anatomy  
☒ Clinical Indications  
☒ Normal and Abnormal Conditions  
☒ Imaging Techniques  
☒ Report Writing

This course will introduce the student to ultrasound imaging of the abdominal vascular system. It includes a brief anatomical review of the systemic arteries, systemic veins, and portal veins. The course provides students with an understanding of the peritoneal cavity and potential spaces the pelvic-pelvic cavity where fluid collections and pathologies may be located. Also, this course will give the student a comprehensive understanding of the pathological processes that may affect the abdominal vascular organs. Cross-sectional anatomy of these structures and their appearance on the sonogram will also be discussed. Classroom instruction will be coordinated with practical activities.

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COURSE DESCRIPTIONS (cont.)

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<b>COURSE NAME:</b>	LIVER	<b>SUBJECTS:</b>
<b>COURSE TITLE</b>	DMS-2.5	☒ Gastrointestinal Organs
<b>PREREQUISITE:</b>	DMS-2.4	☒ Anatomy of the Liver
<b>LECTURE HOURS:</b>	32.0	☒ Physiology and Pathophysiology
<b>LABORATORY HOURS:</b>	32.0	☒ Vascular system of the Liver
<b>TOTAL CLOCK HOURS:</b>	64.0	☒ Cross-Sectional Anatomy
<b>TOTAL CREDITS HOURS:</b>	3.0	☒ Clinical Indications
		☒ Normal and Abnormal Conditions
		☒ Imaging Techniques
		☒ Report Writing

This course will introduce the student to ultrasound imaging of the abdominal gastrointestinal organs. It includes a comprehensive anatomical review of the Liver, cross-sectional anatomy of these structures and their appearance on the sonogram. Classroom instruction will be coordinated with practical activities. This course will give the student a complete understanding of the pathological processes that may affect the Liver.

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<b>COURSES NAME:</b>	GALLBLADDER AND BILIARY TREE	<b>SUBJECTS:</b>
<b>COURSE TITLE:</b>	DMS-2.6	☒ Anatomy of the Gallbladder, Biliary Tree
<b>PREREQUISITE:</b>	DMS-2.5	☒ Physiology and Pathophysiology
<b>LECTURE HOURS:</b>	46.0	☒ Cross-Sectional Anatomy
<b>LABORATORY HOURS:</b>	16.0	☒ Clinical Indications
<b>TOTAL CLOCK HOURS:</b>	62.0	☒ Normal and Abnormal Conditions
<b>TOTAL CREDITS HOURS:</b>	3.5	☒ Imaging Techniques
		☒ Report Writing

This course introduces the normal anatomy, anatomic variants, physiology and pathologic conditions and ultrasound evaluation of the Gallbladder. This course will give the student a complete understanding of the pathological processes that may affect the Gallbladder. Cross-sectional anatomy of this structure and their appearance on the sonogram will also be discussed. Instruction will be coordinated with practical activities.

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<b>COURSE NAME:</b>	PANCREAS AND SPLEEN	<b>SUBJECTS:</b>
<b>COURSE TITLE:</b>	DMS-2.7	☒ Anatomy of the Pancreas and Spleen
<b>PREREQUISITE:</b>	DMS-2.6	☒ Physiology and Pathophysiology
<b>LECTURE HOURS:</b>	32.0	☒ Cross-Sectional Anatomy
<b>LABORATORY HOURS:</b>	32.0	☒ Clinical Indications
<b>TOTAL CLOCK HOURS:</b>	64.0	☒ Normal and Abnormal Conditions
<b>TOTAL CREDITS HOURS:</b>	3.0	☒ Imaging Techniques
		☒ Report Writing

This course will prepare students to acquire the knowledge the location, anatomy, physiology and pathology of the Pancreas and Spleen. This course studies basic structures viewed in sectional anatomy. This course will give the student a comprehensive understanding of the pathological processes that may affect these organs. This module also provides development of skills in scanning technique. This course will prepare the student to recognize the pathological processes of the endocrine and hematopoietic system.

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COURSE DESCRIPTIONS (cont.)

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**COURSE NAME:** URINARY TRACT

**COURSE TITLE:** DMS-2.8  
**PREREQUISITE:** DMS-2.7  
**LECTURE HOURS:** 46.0  
**LABORATORY HOURS:** 16.0  
**TOTAL CLOCK HOURS:** 62.0  
**TOTAL CREDITS HOURS:** 3.5

**SUBJECTS:**

☒ Organ's Anatomy  
☒ Physiology and Pathophysiology  
☒ Cross-Sectional Anatomy  
☒ Clinical Indications  
☒ Normal and Abnormal Conditions  
☒ Imaging Techniques  
☒ Report Writing

This course will provide the student with a theoretical and practical knowledge of the urinary tract, including anatomy, normal anatomic variants, physiology and pathologic conditions of the Kidney(s), Adrenal Glands, and Urinary Bladder. This course includes discussion of the various exam protocols of ultrasound evaluation of the urinary organs. Classroom instruction will be coordinated with practical activities.

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**COURSE NAME:** GENITAL AND SUPERFICIAL STRUCTURE

**COURSE TITLE:** DMS-2.9  
**PREREQUISITE:** DMS-2.8  
**LECTURE HOURS:** 48.0  
**LABORATORY HOURS:** 16.0  
**TOTAL CLOCK HOURS:** 64.0  
**TOTAL CREDITS HOURS:** 3.5

**SUBJECTS:**

☒ Organ's Anatomy  
☒ Physiology and Pathophysiology  
☒ Cross-Sectional Anatomy  
☒ Clinical Indications  
☒ Normal and Abnormal Conditions  
☒ Imaging Techniques  
☒ Report Writing

This course will provide the student with a theoretical and practical knowledge of the genital and superficial organs including anatomy, normal anatomic variants, physiology and pathologic conditions of the Reproductive organs (Breast, Scrotum, Prostate). This course includes discussion of the various exam protocols of ultrasound evaluation of the genitourinary organs. Also, this course teaches normal anatomy, anatomic variants, normal physiology and pathological conditions of the superficial structures. The course focuses on the development of the student's ability to scan accurately the Thyroid and Parathyroid glands. Classroom instruction will be coordinated with laboratory activities

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**COURSE NAME:** ULTRASOUND PHYSICS-IV

**COURSE TITLE:** DMS-3.1  
**PREREQUISITE:** DMS-2.3  
**LECTURE HOURS:** 30.0  
**LABORATORY HOURS:** 0.0  
**TOTAL CLOCK HOURS:** 30.0  
**TOTAL CREDITS HOURS:** 2.0

**SUBJECTS:**

☒ System's Construction  
☒ System's Vital Components  
☒ Receiver Functions  
☒ Pre and Post Processing  
☒ Image Storage and Monitors  
☒ Display Modes

This course familiarizes the students with an understanding of fundamental instrumentations, including but not limited to receiver functions, pre and post processing and imaging modes. This course is designed to develop the student's ability to knobology, including physical principles of the Overall gain, Time gain Compensation, depth, Focusing and 2-D gray scale controls. This course will provide the student with a theoretical and practical knowledge of all components of ultrasound machine.

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COURSE DESCRIPTIONS (cont.)

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<b>COURSE NAME:</b>	GYNECOLOGY	<b>SUBJECTS:</b>
<b>COURSE TITLE:</b>	DMS-3.2	☒ Anatomy of the Female Pelvis
<b>PREREQUISITE:</b>	DMS-2.9	☒ Physiology and Pathology of the Female Pelvis
<b>LECTURE HOURS:</b>	30.0	☒ Cross-Sectional Anatomy,
<b>LABORATORY HOURS:</b>	32.0	☒ Clinical Indications
<b>TOTAL CLOCK HOURS:</b>	62.0	☒ Normal and Abnormal Conditions
<b>TOTAL CREDITS HOURS:</b>	3.0	☒ Imaging Techniques, Doppler Flow Pattern
		☒ Report Writing

The course teaches and demonstrates knowledge of the normal anatomy, anatomic variants, normal physiology and pathological conditions of the female pelvis. This course will prepare the students to perform sonograms of the female pelvis. It includes a comprehensive anatomical review of the female reproductive organs. This course is designed to provide students with an understanding of the potential complicating conditions of the gravid female pelvis to include uterine and ovarian location, size and vascular changes. Classroom instruction will be coordinated with practical activities.

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<b>COURSE NAME:</b>	OBSTETRICS	<b>SUBJECTS:</b>
<b>COURSE TITLE:</b>	DMS-3.3	☒ Normal Trimesters, Placenta, Amniotic Fluid,
<b>PREREQUISITE:</b>	DMS-3.2	☒ Fetal Anatomy
<b>LECTURE HOURS:</b>	20.0	☒ Fetal Circulation
<b>LABORATORY HOURS:</b>	8.0	☒ Clinical Indications (Gestational Age, Well Being)
<b>TOTAL CLOCK HOURS:</b>	28.0	☒ Complications-Maternal and fetal
<b>TOTAL CREDITS HOURS:</b>	1.5	☒ Fetal Abnormalities
		☒ Imaging Techniques, Doppler Flow Pattern
		☒ Report Writing

The course teaches and demonstrates knowledge of the normal trimesters, anatomic variants including but not limited to Placenta, Amniotic Fluid, and Fetal Circulation. It includes a comprehensive anatomical review of the clinical indications. This course will give the student a complete understanding of the pathological processes. Vascular Changes, associated cysts of early pregnancy, fluid collections and their appearance on the sonogram will also be discussed. The students learn to identify the various physiological indications of the well-being or distress during appropriate stages of pregnancy to include cardiovascular gastrointestinal, skeletal, genital, urinary, and other biophysical profiles.

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<b>COURSE NAME:</b>	NEONATAL	<b>SUBJECTS:</b>
<b>COURSE TITLE:</b>	DMS-4.1	☒ Normal Structures and Cross-Sectional Anatomy
<b>PREREQUISITE:</b>	DMS-3.3	• Cerebellum, Cerebrum
<b>LECTURE HOURS:</b>	20.0	• Brain Stem, Spinal Cords
<b>LABORATORY HOURS:</b>	8.0	• Meninges, Sutures
<b>TOTAL CLOCK HOURS:</b>	28.0	☒ Clinical Indications
<b>TOTAL CREDITS HOURS:</b>	1.5	☒ Normal and Abnormal Conditions
		☒ Imaging Techniques, Doppler Flow Pattern
		☒ Report Writing

This course will introduce the student to ultrasound imaging of the normal, abnormal anatomy and physiological indications of the neonate to include: Neurovascular, Gastrointestinal, Genital, Urinary, Cardiac, Central and Vascular Systems. Cross-sectional anatomy of this structure and their appearance on the sonogram will also be discussed. Course teaches and demonstrates knowledge of the normal structures, including Cerebellum, Cerebrum, Brain Stem, Spinal Cord, and Ventricular System

## COURSE DESCRIPTIONS (cont.)

**COURSE NAME: ULTRASOUND PHYSICS-V**

**COURSE TITLE:** DMS-5.1  
**PREREQUISITE:** DMS-3.1  
**LECTURE HOURS:** 30.0  
**LABORATORY HOURS:** 0.0  
**TOTAL CLOCK HOURS:** 30.0  
**TOTAL CREDITS HOURS:** 2.0

**SUBJECTS:**

☒ Physical Principles of the Vascular System  
 ☒ Plethysmographies  
 ☒ Ohm's Law  
 ☒ Doppler Flow Pattern  
 ☒ Artifacts  
 ☒ Performance and Safety  
 ☒ Statistical profile

This course will prepare the student to recognize the specific vascular physical principles, Plethysmography, Ohm's Law, methods of measuring electrical resistance, and advanced of the Hemodynamics. This course will provide the student with a theoretical and practical knowledge of the Artifacts, Performance and Safety. Specific topics to be covered include diagnostic statistical profile.

**COURSES NAME: CEREBROVASCULAR SYSTEM**

**COURSE TITLE:** DMS-5.2  
**PREREQUISITE:** DMS-4.1  
**LECTURE HOURS:** 32.0  
**LABORATORY HOURS:** 0.0  
**TOTAL CLOCK HOURS:** 32.0  
**TOTAL CREDITS HOURS:** 2.0

**SUBJECTS:**

☒ Structural Anatomy  
 ☒ Cross-Sectional Anatomy  
 ☒ Clinical Indications  
 ☒ Normal and Abnormal Conditions  
 ☒ Imaging Techniques, Doppler Flow Pattern  
 ☒ Report Writing

This course familiarizes the students with an understanding of the Transcranial Cerebrovascular Systems. This course will prepare the student to recognize the pathological processes of the cerebrovascular vascular system. Emphasis is placed on the ability to recognize and identify Cervical/Neck scanning techniques. The student learns to identify and perform extra cranial carotid and vertebral artery exams using duplex imaging, Duplex PW Doppler and Color Doppler with spectral analysis. Students learn to perform calculation measurements include ICA/CCA, Peak systolic/End Diastolic Velocities and Middle Cerebral, Anterior Cerebral, Posterior Cerebral, Vertebral Basilar Arteries.

**COURSE NAME: UPPER EXTREMITIES;  
ARTERIAL AND VENOUS**

**COURSE TITLE** DMS-5.3  
**PREREQUISITE:** DMS-5.2  
**LECTURE HOURS:** 48.0  
**LABORATORY HOURS:** 16.0  
**TOTAL CLOCK HOURS:** 64.0  
**TOTAL CREDITS HOURS** 3.5

**SUBJECTS:**

☒ Structural Anatomy  
 ☒ Cross-Sectional Anatomy  
 ☒ Clinical Indications  
 ☒ Normal and Abnormal Conditions  
 ☒ Imaging Techniques, Doppler Flow Pattern  
 ☒ Report Writing

Emphasis is placed on the ability to recognize and identify upper extremities vascular systems. It includes a brief anatomical review of the systemic arteries and systemic veins. Cross-sectional anatomy of these structures and their appearance on the sonogram will also be discussed. This course will prepare the student to recognize the pathological processes of the upper vascular system. Students learn to perform Segmental Pressure, Segmental Plethysmographies, Duplex scanning of native arteries and veins of the upper extremities, including but not limited to false aneurysm and arteriovenous fistula identification.

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COURSE DESCRIPTIONS (cont.)

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**COURSE NAME:** LOWER EXTREMITIES;  
ARTERIAL AND VENOUS

**COURSE TITLE** DMS-5.4  
**PREREQUISITE:** DMS-5.3  
**LECTURE HOURS** 48.0  
**LABORATORY HOURS** 16.0  
**TOTAL CLOCK HOURS** 64.0  
**TOTAL CREDITS HOURS** 3.5

**SUBJECTS:**

☒ Structural Anatomy  
☒ Cross-Sectional Anatomy  
☒ Clinical Indications  
☒ Normal and Abnormal Conditions  
☒ Imaging Techniques, Doppler Flow Pattern  
☒ Report Writing

This course is designed for students to gain knowledge in ultrasound imaging of the lower extremity. It includes a brief anatomical review of the systemic arteries and systemic veins. Students learn to perform Segmental Pressure, Segmental Plethysmographies, Duplex scanning of native arteries and veins of the lower extremities, including but not limited to false aneurysm and arteriovenous fistula identification. This course will prepare the student to recognize the pathological processes of the lower vascular system.

**COURSE NAME:** CARDIAC FUNDAMENTALS,  
PRINCIPLES OF CARDIAC PHARMACOLOGY

**COURSE TITLE:** DMS-6.1  
**PREREQUISITE:** DMS-5.4  
**LECTURE HOURS:** 20.0  
**LABORATORY HOURS:** 8.0  
**TOTAL CLOCK HOURS:** 28.0  
**TOTAL CREDITS HOURS:** 1.5

**SUBJECTS:**

☒ Medical Terminology  
☒ Cardiac Anatomy and Physiology  
☒ Electrocardiology  
☒ Principles of Cardiac pharmacology  
☒ ADME of Cardiac Specific Drugs  
☒ Drugs used for Cardiac Emergency  
☒ Imaging Techniques,

The purpose of this course is to explore in detail the construction and dynamics of the cardiovascular system. Topics include cardiac medical terminology and the metric conversions required in cardiac therapy, as well as cardiopulmonary anatomical and physiological considerations, cardiac pumping action and electrocardiology. Student learns its systemic and pulmonary circulations, basic principles of cardiac pharmacology and specific drugs. Classroom instruction will be coordinated with certain laboratory activities.

**COURSE NAME:** PATHOLOGICAL MECHANISM  
AND NON-INVASIVE DIAGNOSTIC TESTS

**COURSE TITLE:** DMS-6.2  
**PREREQUISITE:** DMS-6.1  
**LECTURE HOURS:** 20.0  
**LABORATORY HOURS:** 8.0  
**TOTAL CLOCK HOURS:** 28.0  
**TOTAL CREDITS HOURS:** 1.5

**SUBJECTS:**

☒ Structural Anatomy  
☒ Sonographic Cross-Sectional Anatomy  
☒ Pathology/Pathophysiology  
☒ Clinical Indications and Therapeutic Measures  
☒ Abnormal Conditions and Congenital Diseases  
☒ Imaging Techniques, Doppler Flow Pattern  
☒ Test Procedures and Data Correlation

The course teaches and demonstrates knowledge of the cardiac structural anatomy. Cross-sectional anatomy of these structures and their appearance on the sonogram will also be discussed. This course will prepare the student to recognize the pathological processes and therapeutic measures. The student learns to identify and perform exams using duplex imaging, Duplex PW Doppler and Color Doppler with spectral analysis. The class teaches the student the basic concept of sonographic appearance, patient position during sonographic examinations, and interpretation of sonographic characteristics.

**COURSE NAME:** HEMODYNAMICS AND PRACTICAL APPLICATION

**COURSE TITLE:** DMS-6.3  
**PREREQUISITE:** DMS-6.2  
**LECTURE HOURS:** 48.0  
**LABORATORY HOURS:** 24.0  
**TOTAL CLOCK HOURS:** 72.0  
**TOTAL CREDITS HOURS:** 4.0

**SUBJECTS:**

- ☒ Principles of Flow
- ☒ Measurements and normal values
- ☒ Physical Considerations
- ☒ M-mode and 2D Echocardiography
- ☒ Assessment Techniques (Objective, Subjective)
- ☒ Imaging Techniques, Doppler Flow Pattern
- ☒ Test Procedures and Data Correlation
- ☒ Report Writing

The purpose of this course is to explore in detail the construction and dynamics of the cardiovascular system. The student learns to identify and perform Cardiac Atrial and Ventricular Hemodynamics using duplex imaging, Duplex PW Doppler and Color Doppler with spectral analysis. Students learn to perform M-mode, and 2 Dimensional Echocardiography. Emphasis is placed on the ability to recognize and identify test procedures requirements and data correlation. Cross-sectional anatomy of these structures and their appearance on the sonogram will also be discussed.

**COURSE NAME:** DISEASE STATE IDENTIFICATION

**COURSE TITLE:** DMS-6.4  
**PREREQUISITE:** DMS-6.3  
**LECTURE HOURS:** 48.0  
**LABORATORY HOURS:** 16.0  
**TOTAL CLOCK HOURS:** 64.0  
**TOTAL CREDITS HOURS:** 3.5

**SUBJECTS:**

- ☒ Ischemic Heart and Coronary Artery Diseases
- ☒ Diseases of the Myocardium
- ☒ Acquired Valvular Disease
- ☒ Thrombi and Aneurysms
- ☒ Congenital Heart Disease
- ☒ Prosthetics Valve

This course will prepare the student to recognize the pathological processes of the cardiovascular system. The following topics will be discussed: Ischemic Heart and Coronary Artery Diseases, Myocardial and Pericardial Diseases, Infective Endocarditis and Rheumatic Heart Diseases, Acquired Valvular Heart disease, Heart failure, Thrombi and Aneurysms, Pulmonary Heart Disease, Murmurs, and congenital abnormalities and Prosthetic Valves. A thorough understanding of normal cardiovascular anatomy and physiology is mandatory in order to comprehend these advanced topics.

**COURSE NAME:** EXTERNSHIPS  
**COURSE TITLE:** DMS-7.1  
**PREREQUISITE:** ALL  
**LECTURE HOURS:** 0.0  
**PRACTICAL HOURS:** 900.0  
**TOTAL CLOCK HOURS:** 900.0  
**TOTAL CREDITS HOURS:** 20.0

**SUBJECTS:**

- ☒ Hands on Training
- ☒ Manual Analyses
- ☒ Automated Analyses,
- ☒ Monitoring and Control Procedures
- ☒ Evaluation and Reporting

Students participate in a clinical externship where they will gain hands on training. The clinical part of program provides students with actual hand-on experience providing diagnostic care to patient of all ages, stages of disease in doctor/imaging clinics affiliated with American Medical Sciences Center. This series of courses provides students with the opportunity to observe and perform the role of the laboratory professional in the clinical setting. There are four different rotations each student must complete. They are in Echocardiographic, Vascular, Abdominal and Gynecological/Obstetrical Studies. We have made available to our students clinical training in stationary, mobile and hospital based imaging facilities.

## GENERAL ABDOMINAL SONOGRAPHY

**DIPLOMA PROGRAM D.O.T. CODE 078.364-010**

**35.5 SEMESTER CREDIT HOURS, 810 CLOCK HOURS, 36 WEEKS**

**EDUCATIONAL OBJECTIVE** The objective is to provide the didactic and clinical skills needed to enable the student to perform the duties and responsibilities of an entry-level ultrasound technologist in General Abdomen and OB/GYN Sonography.

**PROFESSIONAL DUTIES** After graduation, the sonographer will be prepared to assume a responsible position as a member of the health team in a hospital, imaging center, doctor's office, or clinic. Duties may include performing ultrasound scans of abdomen, pelvic area, or small anatomical parts.

**GRADUATION REQUIREMENTS** Graduates must successfully complete all courses of the program with a minimum grade of 70% and all other curriculum requirements for their course of study. Students must perform the clinical portion of their training in an approved medical facility and receive a satisfactory evaluation. Graduation is acknowledged by awarding a diploma.

### GENERAL ABDOMINAL SONOGRAPHY PROGRAM OUTLINE

MOD ULES	MODULES NAME	COURSES NAME	COURSE TITLE	LECT CLOCK HOURS	LAB CLOCK HOURS	PRACT CLOCK HOURS	TOTAL CLOCK HOURS	TOTAL CREDITS HOURS
<b>1</b>	<b>GENERAL EDUCATION PRE-REQUISITE COURSES</b>	Medical Terminology and Career Development	GAS-1.1	12.0	0.0	0.0	12.0	0.5
		Medical Ethics, Medical Law, and Communications Skills	GAS -1.2	10.0	0.0	0.0	10.0	0.5
		General Anatomy, Physiology and Pathophysiology	GAS -1.3	16.0	0.0	0.0	16.0	1.0
		Basic Algebra, Mathematics and Physics	GAS -1.4	16.0	0.0	0.0	16.0	1.0
		Scanning Techniques and Basic Patient Care	GAS -1.5	16.0	4.0	0.0	20.0	1.0
<b>2</b>	<b>ABDOMINAL ULTRASOUND</b>	Ultrasound Physics-I	GAS -2.1	24.0	0.0	0.0	24.0	1.5
		Ultrasound Physics-II	GAS -2.2	24.0	0.0	0.0	24.0	1.5
		Ultrasound Physics-III	GAS -2.3	24.0	0.0	0.0	24.0	1.5
		Abdominal Vasculature Peritoneal Cavity	GAS -2.4	32.0	32.0	0.0	64.0	3.0
		Liver	GAS -2.5	32.0	32.0	0.0	64.0	3.0
		Gallbladder and Biliary Tree	GAS -2.6	32.0	16.0	0.0	48.0	2.5
		Pancreas and Spleen	GAS -2.7	32.0	32.0	0.0	64.0	3.0
		Urinary Tract	GAS -2.8	32.0	32.0	0.0	64.0	3.0
		Genital and Superficial Structure	GAS -2.9	24.0	32.0	0.0	56.0	2.5
<b>3</b>	<b>OBSTETRICAL AND GYNECOLOGICAL ULTRASOUND</b>	Gynecology	GAS -3.1	32.0	32.0	0.0	64.0	3.0
		Obstetrics	GAS -3.2	28.0	8.0	0.0	36.0	2.0
<b>4</b>	<b>NEONATAL ULTRASOUND</b>	Neonatal	GAS -4.1	16.0	8.0	0.0	24.0	1.0
<b>5</b>	<b>CLINICAL</b>	Externships	GAS -5.1	0.0	0.0	180	180	4.0
<b>TOTAL</b>				<b>402</b>	<b>228</b>	<b>180</b>	<b>810</b>	<b>35.5</b>

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## **GENERAL ABDOMINAL SONOGRAPHY PROGRAM DESCRIPTIONS**

### **MODULE 1 GENERAL EDUCATION PRE-REQUISITE COURSES**

**General Education pre-requisites courses within a Diagnostic Medical Sonography diploma program is intended to create a well-rounded individual with good general knowledge of several areas outside the specific major field of the graduate. At American Medical Sciences Center, the general education component is made up of the following courses:**

- GAS-1.1 MEDICAL TERMINOLOGY AND CAREER DEVELOPMENT**
- GAS-1.2 MEDICAL ETHICS, MEDICAL LAW AND COMMUNICATIONS SKILLS**
- GAS-1.3 GENERAL ANATOMY, PHYSIOLOGY AND PATHOPHYSIOLOGY**
- GAS-1.4 BASIC ALGEBRA, MATHEMATICS AND PHYSICS**
- GAS-1.5 SCANNING TECHNIQUES AND BASIC PATIENT CARE**

### **MODULE 2 GENERAL ULTRASOUND**

**In this module, students will gain an understanding of the normal anatomy, anatomic variants, normal physiology and pathological conditions of the organs of the abdominal-pelvic cavity. At American Medical Sciences Center, the General Ultrasound component is made up of the following courses:**

- GAS-2.1 ULTRASOUND PHYSICS-I**
- GAS-2.2 ULTRASOUND PHYSICS-II**
- GAS-2.3 ULTRASOUND PHYSICS-III**
- GAS-2.4 ABDOMINAL VASCULATURE, PERITONEAL CAVITY**
- GAS-2.5 LIVER**
- GAS-2.6 GALLBLADDER AND BILIARY TREE**
- GAS-2.7 PANCREAS AND SPLEEN**
- GAS-2.8 URINARY TRACT**
- GAS-2.9 GENITAL AND SUPERFICIAL STRUCTURE**

### **MODULE 3 OBSTETRICAL AND GYNECOLOGICAL ULTRASOUND**

**In this module, students will gain an understanding of the normal anatomy, anatomic variants, normal physiology and pathological conditions of the organs of the abdominal-pelvic cavity. At American Medical Sciences Center, the Obstetrical and Gynecological Ultrasound component is made up of the following courses:**

- GAS-3.1 GYNECOLOGY**
- GAS-3.2 OBSTETRICS**

### **MODULE 4 NEONATAL ULTRASOUND**

**In this module, students will gain an understanding of the normal neonatal structures includes clinical indications, pathological conditions of the organs imaging techniques and report writing. At American Medical Sciences Center, the neonatal ultrasound component is made up of the following course:**

- GAS-4.1 NEONATAL**

### **MODULE 7 CLINICAL**

**Students participate in a clinical externship where they will gain hands-on training. The clinical part of program provides students with actual hands-on experience providing diagnostic care to patients of all ages and stages of disease in doctor/imaging clinics affiliated with American Medical Sciences Center.**

- GAS-5.1 EXTERNSHIPS**

## GENERAL ABDOMINAL SONOGRAPHY COURSE DESCRIPTIONS

**COURSE NAME:** MEDICAL TERMINOLOGY AND  
CAREER DEVELOPMENT

**COURSE TITLE:** GAS-1.1

**PREREQUISITE:** NONE

**LECTURE HOURS:** 12.0

**LABORATORY HOURS:** 0.0

**TOTAL CLOCK HOURS:** 12.0

**TOTAL CREDITS HOURS:** 0.5

**SUBJECTS:**

- ☒ Structure of medical words (roots, prefixes)
- ☒ Abbreviations
- ☒ Sonography specific terminology
- ☒ Preparation for job search, study skills
- ☒ The job search (resume writing, interviewing)
- ☒ Continued advancement (registries/credentials)

Students learn medical and specific sonographic terminology. This course is designed to assist the student with personal and professional development for successful employment with a concentration on developing a positive self-image, assessing competitive strengths, career expectations, learning job search techniques, in addition to written skills and current resume preparation.

**COURSE NAME:** MEDICAL ETHICS,  
COMMUNICATIONS SKILLS AND MEDICAL LAW

**COURSE TITLE:** GAS-1.2

**PREREQUISITE:** GAS-1.1

**LECTURE HOURS:** 10.0

**LABORATORY HOURS:** 0.0

**TOTAL CLOCK HOURS:** 10.0

**TOTAL CREDITS HOURS:** 0.5

**SUBJECTS:**

- ☒ Ethical decision-making
- ☒ Legal principles
- ☒ Patient bill of right
- ☒ Patient communications
- ☒ Staff communications, telecommunications
- ☒ Writing technical reports
- ☒ Legal issues of patient confidentiality

This course familiarizes the students with an understanding of the specific laws and regulations that impact the healthcare environment and fundamental medical ethics. Students are introduced to medical office safety, security, and emergency provisions. This course is designed to develop the student's ability to communicate effectively. Emphasis is placed upon the basic elements of workplace effectiveness. (Sufficient to perform in a traditional medical work environment including patient interviews, chart evaluations, diagnostic testing protocols).

**COURSE NAME:** GENERAL ANATOMY,  
PHYSIOLOGY AND PATHOPHYSIOLOGY

**COURSE TITLE:** GAS-1.3

**PREREQUISITE:** GAS-1.2

**LECTURE HOURS:** 16.0

**LABORATORY HOURS:** 0.0

**TOTAL CLOCK HOURS:** 16.0

**TOTAL CREDITS HOURS:** 1.0

**SUBJECTS:**

- ☒ Cardiopulmonary/cardiovascular systems
- ☒ Central Nervous system
- ☒ Gastrointestinal system
- ☒ Musculoskeletal system
- ☒ Reproductive systems
- ☒ Urinary system
- ☒ Endocrine system
- ☒ Hematopoietic system
- ☒ Immune system

The students will be introduced to the fundamentals of chemistry and human anatomy, physiology, and pathophysiology. The course includes the ability to recognize and identify all major body systems and understanding the primary physiological reactions of the human body.

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COURSE DESCRIPTIONS (cont.)

**COURSE NAME:** BASIC ALGEBRA,  
MATHEMATICS AND PHYSICS

**COURSE TITLE**                   **GAS-1.4**  
**PREREQUISITE**                   NONE  
**LECTURE HOURS**                16.0  
**LABORATORY HOURS**            0.0  
**TOTAL CLOCK HOURS**           16.0  
**TOTAL CREDITS HOURS**         1.0

**SUBJECTS:**

- ☒ Basic Algebra
- ☒ Measurements, calculations, metric conversions
- ☒ Linear equation and inequalities
- ☒ Principles of motion, work and heat
- ☒ Principles of acoustic and light waves
- ☒ Principles of Ultrasound Physics
- ☒ Sound production and propagation
- ☒ Transducer architecture and selection
- ☒ Bio-effects, Artifacts, and safety

This course is designed to provide students with an understanding of the general principles and theories underlying algebra mathematics and fundamental physics. This course builds on the principles of linear equations, graphing, functions, rational expressions, radicals and systems of equations. Emphasis is placed on critical thinking and problem-solving skills. This course is designed to provide students with an understanding of the general principles and theories underlying Ultrasound Physics.

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**COURSE NAME:** SCANNING TECHNIQUES AND  
BASIC PATIENT CARE

**COURSE TITLE:**                   **GAS-1.5**  
**PREREQUISITE:**                   **GAS-1.3**  
**LECTURE HOURS:**                16.0  
**LABORATORY HOURS:**            4.0  
**TOTAL CLOCK HOURS:**           20.0  
**TOTAL CREDITS HOURS:**         1.0

**SUBJECTS:**

- ☒ Introduction to scanning methods
- ☒ Purpose and function of various scanning Techniques and patient safety
- ☒ Patient communication strategies for dealing with difficult patients
- ☒ Infection control and universal precaution procedures
- ☒ Principles of psychological support
- ☒ Emergency conditions and procedures
- ☒ Transfer/transportation techniques
- ☒ Legal/ethical issues

The course teaches the student the basic concept of sonographic appearance, patient position during sonographic examinations, and interpretation of sonographic characteristics. Classroom instruction will be coordinated with certain lab activities. The students will be introduced by the format of books, handouts, and video-representation.

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**COURSES NAME:** ULTRASOUND PHYSICS-I

**COURSE TITLE:**                   **GAS- 2.1**  
**PREREQUISITE:**                   **GAS -1.4**  
**LECTURE HOURS:**                24.0  
**LABORATORY HOURS:**            0.0  
**TOTAL CLOCK HOURS:**           24.0  
**TOTAL CREDITS HOURS:**         1.5

**SUBJECTS:**

- ☒ Continuous Wave
- ☒ Pulse Wave
- ☒ Intensity and Attenuation
- ☒ Impedances and Angles
- ☒ Transducers Architectures
- ☒ Beam formers (Near, far zones)
- ☒ Type of transducers

The course material will focus on physical principles of sound energy, sound production, transmission and reflection. This course provides an introduction to and an overview of the principles of ultrasound physics as it applies to diagnostic medical imaging. The course material will focus on physical principles of sound energy, transducers architecture, sound production and beam structural design.

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COURSE DESCRIPTIONS (cont.)

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**COURSE NAME:** ULTRASOUND PHYSICS-II

**COURSE TITLE:** GAS-2.2  
**PREREQUISITE:** GAS-2.1  
**LECTURE HOURS:** 24.0  
**LABORATORY HOURS:** 0.0  
**TOTAL CLOCK HOURS:** 24.0  
**TOTAL CREDITS HOURS:** 1.5

**SUBJECTS:**

☒ Doppler Effect  
☒ Doppler Equations and Hemodynamics  
☒ Circulatory System  
☒ Critical Stenosis  
☒ Energy, Pressure, Flow resistance  
☒ Spectral Instruments

In this course, the students learn the fundamentals of the Doppler physics. This course teaches the student the developmental concept of sonographic appearance including spectral and color Doppler instruments. Classroom instruction will be coordinated with certain instrumental activities include appropriate adjustment to M-mode, color flow and spectral trace. This module teaches the student the developmental concept of sonographic appearance; architectures of the modern technology scan heads and potential artifacts.

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**COURSES NAME:** ULTRASOUND PHYSICS-III

**COURSE TITLE:** GAS-2.3  
**PREREQUISITE:** GAS-2.2  
**LECTURE HOURS:** 24.0  
**LABORATORY HOURS:** 0.0  
**TOTAL CLOCK HOURS:** 24.0  
**TOTAL CREDITS HOURS:** 1.5

**OBJECTS:**

☒ System's Construction  
☒ System's Vital Components  
☒ Receiver Functions  
☒ Pre and Post Processing  
☒ Image Storage and Monitors  
☒ Display Modes

This course familiarizes the students with an understanding of the fundamental instrumentations, including but not limited to receiver functions, pre and post processing and imaging modes. This course designed to develop the student's ability to knobology, including physical principles of the Overall gain, Time gain Compensation, depth, Focusing and 2-D gray scale controls. This course will provide the student with a theoretical and practical knowledge of all components ultrasound machines.

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**COURSES NAME:** ABDOMINAL VASCULATURE,  
PERITONEAL CAVITY

**COURSE TITLE:** GAS-2.4  
**PREREQUISITE:** GAS-1.5  
**LECTURE HOURS:** 32.0  
**LABORATORY HOURS:** 32.0  
**TOTAL CLOCK HOURS:** 64.0  
**TOTAL CREDITS HOURS:** 3.0

**SUBJECTS:**

☒ Abdominal Cavities  
☒ Abdominal Vascular System  
☒ Cross-Sectional Anatomy  
☒ Clinical Indications  
☒ Normal and Abnormal Conditions  
☒ Imaging Techniques  
☒ Report Writing

This course will introduce the student to ultrasound imaging of the abdominal vascular system. It includes a brief anatomical review of the systemic arteries, systemic veins, and portal veins. Course provides students with an understanding of the peritoneal cavity, Retro peritoneum and potential spaces the pelvic-pelvic cavity where fluid collections and pathologies may be located. Also, this course will give the student a comprehensive understanding of the pathological processes that may affect the abdominal vascular organs. Cross-sectional anatomy of these structures and their appearance on the sonogram will also be discussed. Classroom instruction will be coordinated with practical activities.

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COURSE DESCRIPTIONS (cont.)

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<b>COURSE NAME:</b>	LIVER	<b>SUBJECTS:</b>
<b>COURSE TITLE</b>	<b>GAS-2.5</b>	☒ Gastrointestinal Organs
<b>PREREQUISITE:</b>	<b>GAS-2.4</b>	☒ Anatomy of the Liver
<b>LECTURE HOURS:</b>	32.0	☒ Physiology and Pathophysiology
<b>LABORATORY HOURS:</b>	32.0	☒ Vascular system of the Liver
<b>TOTAL CLOCK HOURS:</b>	64.0	☒ Cross-Sectional Anatomy
<b>TOTAL CREDITS HOURS:</b>	3.0	☒ Clinical Indications
		☒ Normal and Abnormal Conditions
		☒ Imaging Techniques
		☒ Report Writing

This course will introduce the student to ultrasound imaging of the abdominal gastrointestinal organs. It includes a comprehensive anatomical review of the Liver, cross-sectional anatomy of these structures and their appearance on the sonogram. Classroom instruction will be coordinated with practical activities. This course will give the student a complete understanding of the pathological processes that may affect the Liver.

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<b>COURSE NAME:</b>	GALLBLADDER AND BILIARY TREE	<b>SUBJECTS:</b>
<b>COURSE TITLE:</b>	<b>GAS- 2.6</b>	☒ Anatomy of the Gallbladder, Biliary Tree
<b>PREREQUISITE:</b>	<b>GAS -2.5</b>	☒ Physiology and Pathophysiology
<b>LECTURE HOURS:</b>	32.0	☒ Cross-Sectional Anatomy
<b>LABORATORY HOURS:</b>	16.0	☒ Clinical Indications
<b>TOTAL CLOCK HOURS:</b>	48.0	☒ Normal and Abnormal Conditions
<b>TOTAL CREDITS HOURS:</b>	2.5	☒ Imaging Techniques
		☒ Report Writing

This course introduces the normal anatomy, anatomic variants, physiology and pathologic conditions and ultrasound evaluation of the Gallbladder. This course will give the student a complete understanding of the pathological processes that may affect the Gallbladder. Cross-sectional anatomy of this structure and their appearance on the sonogram will also be discussed. Instruction will be coordinated with practical activities.

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<b>COURSE NAME:</b>	PANCREAS AND SPLEEN	<b>SUBJECTS:</b>
<b>COURSE TITLE:</b>	<b>GAS- 2.7</b>	☒ Anatomy of the Pancreas and Spleen
<b>PREREQUISITE:</b>	<b>GAS- 2.6</b>	☒ Physiology and Pathophysiology
<b>LECTURE HOURS:</b>	32.0	☒ Cross-Sectional Anatomy
<b>LABORATORY HOURS:</b>	32.0	☒ Clinical Indications
<b>TOTAL CLOCK HOURS:</b>	64.0	☒ Normal and Abnormal Conditions
<b>TOTAL CREDITS HOURS:</b>	3.0	☒ Imaging Techniques
		☒ Report Writing

This course will prepare students to acquire the knowledge the location, anatomy, physiology and pathology of the Pancreas and Spleen. This course studies basic structures viewed in sectional anatomy. This course will give the student a comprehensive understanding of the pathological processes that may affect these organs. This module also provides development of skills in scanning technique. This course will prepare the student to recognize the pathological processes of the endocrine and hematopoietic system.

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COURSE DESCRIPTIONS (cont.)

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**COURSE NAME:** URINARY TRACT

**COURSE TITLE:** GAS -2.8  
**PREREQUISITE:** GAS-2.7  
**LECTURE HOURS:** 32.0  
**LABORATORY HOURS:** 32.0  
**TOTAL CLOCK HOURS:** 64.0  
**TOTAL CREDITS HOURS:** 3.0

**SUBJECTS:**

☒ Organ's Anatomy  
☒ Physiology and Pathophysiology  
☒ Cross-Sectional Anatomy  
☒ Clinical Indications  
☒ Normal and Abnormal Conditions  
☒ Imaging Techniques  
☒ Report Writing

This course will provide the student with a theoretical and practical knowledge of the urinary tract, including anatomy, normal anatomic variants, physiology and pathologic conditions of the Kidney(s), Adrenal Glands, and Urinary Bladder. This course includes discussion of the various exam protocols of ultrasound evaluation of the urinary organs. Classroom instruction will be coordinated with practical activities.

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**COURSE NAME:** GENITAL AND SUPERFICIAL STRUCTURE

**COURSE TITLE:** GAS -2.9  
**PREREQUISITE:** GAS- 2.8  
**LECTURE HOURS:** 24.0  
**LABORATORY HOURS:** 32.0  
**TOTAL CLOCK HOURS:** 56.0  
**TOTAL CREDITS HOURS:** 2.5

**SUBJECTS:**

☒ Organ's Anatomy  
☒ Physiology and Pathophysiology  
☒ Cross-Sectional Anatomy  
☒ Clinical Indications  
☒ Normal and Abnormal Conditions  
☒ Imaging Techniques  
☒ Report Writing

This course will provide the student with a theoretical and practical knowledge of the genital and superficial organs including anatomy, normal anatomic variants, physiology and pathologic conditions of the Reproductive organs (Breast, Scrotum, and Prostate). This course includes discussion of the various exam protocols of ultrasound evaluation of the genitourinary organs. Also, this course teaches normal anatomy, anatomic variants, normal physiology and pathological conditions of the superficial structures. The course focuses on the development of the student's ability to scan accurately the Thyroid and Parathyroid glands. Classroom instruction will be coordinated with laboratory activities.

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**COURSE NAME:** GYNECOLOGY

**COURSE TITLE:** GAS -3.1  
**PREREQUISITE:** GAS -2.9  
**LECTURE HOURS:** 32.0  
**LABORATORY HOURS:** 32.0  
**TOTAL CLOCK HOURS:** 64.0  
**TOTAL CREDITS HOURS:** 3.0

**SUBJECTS:**

☒ Anatomy of the Female Pelvis  
☒ Physiology and Pathology of the Female Pelvis  
☒ Cross-Sectional Anatomy,  
☒ Clinical Indications  
☒ Normal and Abnormal Conditions  
☒ Imaging Techniques, Doppler Flow Pattern  
☒ Report Writing

The course teaches and demonstrates knowledge of the normal anatomy, anatomic variants, normal physiology and pathological conditions of the female pelvis. This course will prepare the students to perform sonograms of the female pelvis. It includes a comprehensive anatomical review of the female reproductive organs. This course is designed to provide students with an understanding of the potential complicating conditions of the gravid female pelvis to include uterine and ovarian location, size and vascular changes. Classroom instruction will be coordinated with practical activities. This course will give the student a complete understanding of the pathological processes.

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COURSE DESCRIPTIONS (cont.)

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<b>COURSE NAME</b>	<b>OBSTETRICS</b>	<b>SUBJECTS:</b>
<b>COURSE TITLE</b>	<b>GAS- 3.2</b>	☒ Normal Trimesters, Placenta, Amniotic Fluid,
<b>PREREQUISITE:</b>	<b>GAS -3.1</b>	☒ Fetal Anatomy
<b>LECTURE HOURS</b>	28.0	☒ Fetal Circulation
<b>LABORATORY HOURS</b>	8.0	☒ Clinical Indications (Gestational Age, Well Being)
<b>TOTAL CLOCK HOURS</b>	36.0	☒ Complications-Maternal and fetal
<b>TOTAL CREDITS HOURS</b>	2.0	☒ Fetal Abnormalities, Doppler Flow Pattern
		☒ Imaging Techniques, Report Writing

The course teaches and demonstrates knowledge of the normal trimesters, anatomic variants including but not limited to Placenta, Amniotic Fluid, and Fetal Circulation. It includes a comprehensive anatomical review of the clinical indications. This course will give the student a complete understanding of the pathological processes. Vascular Changes, associated cysts of early pregnancy, fluid collections and their appearance on the sonogram will also be discussed. The students learn to identify the various physiological indications of the well-being or distress during appropriate stages of pregnancy to include: cardiovascular gastrointestinal, skeletal, genital, urinary, and other biophysical profiles.

<b>COURSE NAME</b>	<b>NEONATAL</b>	<b>SUBJECTS:</b>
<b>COURSE TITLE</b>	<b>GAS -4.1</b>	☒ Normal Structures and Cross-Sectional Anatomy
<b>PREREQUISITE:</b>	<b>GAS-3.3</b>	• Cerebellum, Cerebrum
<b>LECTURE HOURS</b>	16.0	• Brain Stem, Spinal Cords
<b>LABORATORY HOURS</b>	8.0	• Meninges, Sutures
<b>TOTAL CLOCK HOURS</b>	24.0	☒ Clinical Indications
<b>TOTAL CREDITS HOURS</b>	1.0	☒ Normal and Abnormal Conditions
		☒ Imaging Techniques, Doppler Flow Pattern
		☒ Report Writing

This course will introduce the student to ultrasound imaging of the normal, abnormal anatomy and physiological indications of the neonate to include: Neurovascular, Gastrointestinal, Genital, Urinary, Cardiac, Central and Vascular Systems. Cross-sectional anatomy of this structure and their appearance on the sonogram will also be discussed. Course teaches and demonstrates knowledge of the normal structures (Cerebellum, Cerebrum, Brain Stem, Spinal Cord, and Ventricular System).

<b>COURSE NAME</b>	<b>EXTERNSHIPS</b>	<b>SUBJECTS:</b>
<b>COURSE TITLE</b>	<b>GAS -5.1</b>	☒ Hands on Training
<b>PREREQUISITE:</b>	<b>ALL</b>	☒ Manual Analyses
<b>LECTURE HOURS</b>	0.0	☒ Automated Analyses,
<b>PRACTICAL HOURS</b>	180.0	☒ Monitoring and Control Procedures
<b>TOTAL CLOCK HOURS</b>	180.0	☒ Evaluation and Reporting
<b>TOTAL CREDITS HOURS</b>	4.0	

Students participate in a clinical externship where they will gain hands on training. The clinical part of program provides students with actual hand-on experience providing diagnostic care to patient of all ages, stages of disease in doctor/imaging clinics affiliated with American Medical Sciences Center. This series of courses provides students with the opportunity to observe and perform the role of the laboratory professional in the clinical setting. There are two different rotations each student must complete. We have made available to our students clinical training in stationary, mobile and hospital based imaging facilities.

## ECHOVASCULAR TECHNOLOGY

**DIPLOMA PROGRAM    D.O.T. CODE 078.364-014**  
**28.5 SEMESTER CREDIT HOURS, 720 CLOCK HOURS, 30 WEEKS**

**EDUCATIONAL OBJECTIVE** Echocardiography is the most rapidly developing field in Sonography/ultrasound. This program offered by the AMSC is intensive in structure and design. The student, after completing the program, will have the necessary knowledge of echocardiography, including but not limited to the application systems in diagnosing of the heart and observing the vascular system.

**PROFESSIONAL DUTIES**        Students gain the necessary knowledge to become competent Echovascular Technicians. Echocardiography Technicians work closely with patients, preparing them for physical examination; assist the doctor in providing treatment for the patient, and; obtain necessary information about the patient's history and vital signs.

**GRADUATION REQUIREMENTS**        Graduates must successfully complete all courses of the program with a minimum grade of 70% and all other curriculum requirements for their course of study. Students must perform the clinical portion of their training in an approved medical facility and receive a satisfactory evaluation. Graduation is acknowledged by awarding a diploma.

### ECHOVASCULAR TECHNOLOGY PROGRAM OUTLINE

MOD ULES	MODULES NAME	COURSES NAME	COURSE TITLE	LECT CLOCK HOURS	LAB CLOCK HOURS	PRACT CLOCK HOURS	TOTAL CLOCK HOURS	TOTAL CREDITS HOURS
<b>1</b>	<b>GENERAL EDUCATION PRE-REQUISITE COURSES</b>	Medical Terminology and Career Development	EVT-1.1	12.0	0.0	0.0	12.0	0.5
		Medical Ethics, Medical Law, and Communications Skills	EVT -1.2	8.0	0.0	0.0	8.0	0.5
		General Anatomy, Physiology and Pathophysiology	EVT -1.3	20.0	0.0	0.0	20.0	1.0
		Basic Algebra, Mathematics and Physics	EVT -1.4	20.0	0.0	0.0	20.0	1.0
		Scanning Techniques and Basic Patient Care	EVT -1.5	16.0	8.0	0.0	24.0	1.0
<b>2</b>	<b>VASCULAR TECHNOLOGY</b>	Ultrasound Physics	EVT -2.1	42.0	0.0	0.0	42.0	2.5
		Cerebrovascular System	EVT -2.2	32.0	0.0	0.0	32.0	2.0
		Upper extremities; Arterial and Venous	EVT -2.3	32.0	32.0	0.0	64.0	3.0
		Abdominal, Pelvic Vascularity And Lower Extremities.	EVT -2.4	32.0	32.0	0.0	64.0	3.0
<b>3</b>	<b>CARDIAC ULTRASOUND</b>	Cardiac Fundamentals, Principles of Cardiac Pharmacology	EVT -3.1	16.0	16.0	0.0	32.0	1.5
		Pathological Mechanism and Non-Invasive Diagnostic Tests	EVT -3.2	16.0	16.0	0.0	32.0	1.5
		Hemodynamics and Practical Application of Echocardiography	EVT -3.3	32.0	32.0	0.0	64.0	3.0
		Disease State Identification	EVT -3.4	34.0	32.0	0.0	66.0	3.0
<b>4</b>	<b>CLINICAL</b>	Externships	EVT -4.1	0.00	0.00	240	240	5.0
<b>TOTAL</b>				<b>312</b>	<b>168</b>	<b>240</b>	<b>720</b>	<b>28.5</b>

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# **ECHOVASCULAR TECHNOLOGY PROGRAM DESCRIPTIONS**

## **MODULE 1 GENERAL EDUCATION PRE-REQUISITES COURSES**

**General Education pre-requisites courses within a Diagnostic Medical Sonography diploma program is intended to create a well-rounded individual with good general knowledge of several areas outside the specific major field of the graduate. At American Medical Sciences Center, the general education component is made up of the following courses:**

- EVT-1.1 MEDICAL TERMINOLOGY AND CAREER DEVELOPMENT**
- EVT-1.2 MEDICAL ETHICS, MEDICAL LAW AND COMMUNICATIONS SKILLS**
- EVT-1.3 GENERAL ANATOMY, PHYSIOLOGY AND PATHOPHYSIOLOGY**
- EVT-1.4 BASIC ALGEBRA, MATHEMATICS AND PHYSICS**
- EVT-1.5 SCANNING TECHNIQUES AND BASIC PATIENT CARE**

## **MODULE 2 VASCULAR TECHNOLOGY**

**This module is designed for students to gain knowledge in ultrasound imaging of the upper and lower extremity. It includes a brief anatomical review of the systemic arteries and systemic veins. The students will be able to identify of extra and intra cranial cerebrovascular systems. Cross-sectional anatomy of these structures and their appearance on the sonogram will also be discussed. Classroom instruction will be coordinated with practical activities.**

- EVT- 2.1 ULTRASOUND PHYSICS**
- EVT- 2.2 CEREBROVASCULAR SYSTEM**
- EVT- 2.3 UPPER EXTREMITIES; ARTERIAL AND VENOUS**
- EVT- 2.4 ABDOMINAL, PELVIC VASCULARITY AND LOWER EXTREMITIES; ARTERIAL AND VENOUS**

## **MODULE 3 CARDIAC ULTRASOUND**

**The purpose of this module is to explore in detail the construction and dynamics of the cardiovascular system. Topics include anatomical and physiological considerations, cardiac pumping action and its regulation, basic hemodynamics, and systemic and pulmonary circulation. Classroom instruction will be coordinated with certain lab activities. This course will prepare the student to recognize the pathological processes of the cardiovascular system.**

- EVT- 3.1 CARDIAC FUNDAMENTALS, PRINCIPLES OF CARDIAC PHARMACOLOGY**
- EVT- 3.2 PATHOLOGICAL MECHANISM AND NON-INVASIVE DIAGNOSTIC TESTS**
- EVT- 3.3 HEMODYNAMICS AND PRACTICAL APPLICATION OF ECHOCARDIOGRAPHY**
- EVT- 3.4 DISEASE STATE IDENTIFICATION**

## **MODULE 4 CLINICAL**

**Students participate in a clinical externship where they will gain hands-on training. The clinical part of program provides students with actual hands-on experience providing diagnostic care to patients of all ages and stages of disease in doctor/imaging clinics affiliated with American Medical Sciences Center.**

- EVT- 4.1 EXTERNSHIPS**

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## ECHOVASCULAR TECHNOLOGY COURSE DESCRIPTIONS

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**COURSE NAME:** MEDICAL TERMINOLOGY AND  
CAREER DEVELOPMENT

**COURSE TITLE:** EVT- 1.1

**PREREQUISITE:** NONE

**LECTURE HOURS:** 12.0

**LABORATORY HOURS:** 0.0

**TOTAL CLOCK HOURS:** 12.0

**TOTAL CREDITS HOURS:** 0.5

**SUBJECTS:**

- ☒ Structure of medical words (roots, prefixes)
- ☒ Abbreviations
- ☒ Sonography specific terminology
- ☒ Preparation for job search, study skills
- ☒ The job search (resume writing, interviewing)
- ☒ Continued advancement (registries/credentials)

Students learn medical and specific sonographic terminology. This course is designed to assist the student with personal and professional development for successful employment with a concentration on developing a positive self-image, assessing competitive strengths, career expectations, learning job search techniques, in addition to written skills and current resume preparation.

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**COURSE NAME:** MEDICAL ETHICS,  
COMMUNICATIONS SKILLS AND MEDICAL LAW

**COURSE TITLE:** EVT- 1.2

**PREREQUISITE:** EVT- 1.1

**LECTURE HOURS:** 8.0

**LABORATORY HOURS:** 0.0

**TOTAL CLOCK HOURS:** 8.0

**TOTAL CREDITS HOURS:** 0.5

**SUBJECTS:**

- ☒ Ethical decision-making
- ☒ Legal principles
- ☒ Patient bill of right
- ☒ Patient communications
- ☒ Staff communications, telecommunications
- ☒ Writing technical reports
- ☒ Legal issues of patient confidentiality

This course familiarizes the students with an understanding of the specific laws and regulations that impact the healthcare environment and fundamental medical ethics. Students are introduced to medical office safety, security, and emergency provisions. This course is designed to develop the student's ability to communicate effectively. Emphasis is placed upon the basic elements of workplace effectiveness. (Sufficient to perform in a traditional medical work environment including patient interviews, chart evaluations, diagnostic testing protocols).

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**COURSE NAME:** GENERAL ANATOMY, PHYSIOLOGY  
AND PATHOPHYSIOLOGY

**COURSE TITLE:** EVT- 1.3

**PREREQUISITE:** EVT- 1.2

**LECTURE HOURS:** 20.0

**LABORATORY HOURS:** 0.0

**TOTAL CLOCK HOURS:** 20.0

**TOTAL CREDITS HOURS:** 1.0

**SUBJECTS:**

- ☒ Cardiopulmonary/cardiovascular systems
- ☒ Central Nervous system
- ☒ Gastrointestinal system
- ☒ Musculoskeletal system
- ☒ Reproductive systems
- ☒ Urinary system
- ☒ Endocrine system
- ☒ Hematopoietic system
- ☒ Immune system

The students will be introduced to the fundamentals of chemistry and human anatomy, physiology, and pathophysiology. The course includes the ability to recognize and identify all major body systems and understanding the primary physiological reactions of the human body.

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COURSE DESCRIPTIONS (cont.)

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**COURSE NAME:** BASIC ALGEBRA,  
MATHEMATICS AND PHYSICS

**COURSE TITLE** EVT- 1.4  
**PREREQUISITE** NONE  
**LECTURE HOURS** 20.0  
**LABORATORY HOURS** 0.0  
**TOTAL CLOCK HOURS** 20.0  
**TOTAL CREDITS HOURS** 1.0

**SUBJECTS:**

- ☒ Basic Algebra
- ☒ Measurements, calculations, metric conversions
- ☒ Linear equation and inequalities
- ☒ Principles of motion, work and heat
- ☒ Principles of acoustic and light waves
- ☒ Principles of Ultrasound Physics
- ☒ Sound production and propagation
- ☒ Transducer architecture and selection
- ☒ Bio-effects, Artifacts, and safety

This course is designed to provide students with an understanding of the general principles and theories underlying algebra mathematics and fundamental physics. This course builds on the principles of linear equations, graphing, functions, rational expressions, radicals and systems of equations. Emphasis is placed on critical thinking and problem-solving skills. This course is designed to provide students with an understanding of the general principles and theories underlying Ultrasound Physics.

**COURSE NAME:** SCANNING TECHNIQUES AND  
BASIC PATIENT CARE

**COURSE TITLE:** EVT- 1.5  
**PREREQUISITE:** EVT- 1.3, EVT-1.4  
**LECTURE HOURS:** 16.0  
**LABORATORY HOURS:** 8.0  
**TOTAL CLOCK HOURS:** 24.0  
**TOTAL CREDITS HOURS:** 1.0

**SUBJECTS:**

- ☒ Introduction to scanning methods
- ☒ Purpose and function of various scanning Techniques and patient safety
- ☒ Patient communication strategies for dealing with difficult patients
- ☒ Infection control and universal precaution procedures
- ☒ Principles of psychological support
- ☒ Emergency conditions and procedures
- ☒ Transfer/transportation techniques
- ☒ Legal/ethical issues

The course teaches the student the basic concept of sonographic appearance, patient position during sonographic examinations, and interpretation of sonographic characteristics. Classroom instruction will be coordinated with certain lab activities. The students will be introduced by the format of books, handouts, and video-representation.

**COURSE NAME:** ULTRASOUND PHYSICS

**COURSE TITLE:** EVT- 2.1  
**PREREQUISITE:** EVT- 1.5  
**LECTURE HOURS:** 42.0  
**LABORATORY HOURS:** 0.0  
**TOTAL CLOCK HOURS:** 42.0  
**TOTAL CREDITS HOURS:** 2.5

**SUBJECTS:**

- ☒ Ultrasound Physics
- ☒ Doppler physics
- ☒ Transducers
- ☒ Ultrasound Instrumentation
- ☒ Artifacts, Output Measurements
- ☒ Safety, Bioeffects

This course will provide the student with theoretical and practical understanding of the principles of ultrasound physics as it applies to diagnostic medical imaging. The course material will focus on physical principles of sound energy, transducer and equipment design, sound production, attenuation, imaging artifacts, and safety/biological effects. This course teaches the student the development concept of sonographic appearance, potential artifacts, and output measurements. Emphasis will be placed on physical principles of sound waves, and its categorization.

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.COURSE DESCRIPTIONS (cont.)

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**COURSE NAME:**CEREBROVASCULAR SYSTEM

**COURSE TITLE:** EVT- 2.2

**PREREQUISITE:** EVT- 2.1

**LECTURE HOURS:** 32.0

**LABORATORY HOURS:** 0.0

**TOTAL CLOCK HOURS:** 32.0

**TOTAL CREDITS HOURS:** 2.0

**SUBJECTS:**

☒ Structural Anatomy

☒ Cross-Sectional Anatomy

☒ Clinical Indications

☒ Normal and Abnormal Conditions

☒ Imaging Techniques, Doppler Flow Pattern

☒ Report Writing

Course familiarizes the students with an understanding of the Transcranial Cerebrovascular Systems. This course will prepare the student to recognize the pathological processes of the cerebrovascular vascular system. Emphasis is placed on the ability to recognize and identify Cervical/Neck scanning techniques. The student learns to identify and perform extra cranial carotid and vertebral artery exams using duplex imaging, Duplex PW Doppler and Color Doppler with spectral analysis. Students learn to perform calculation measurements include ICA/CCA, Peak systolic/End Diastolic Velocities and Middle Cerebral, Anterior Cerebral, Posterior Cerebral, Vertebral Basilar Arteries.

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**COURSE NAME:** UPPER EXTREMITIES;  
ARTERIAL AND VENOUS

**COURSE TITLE** EVT- 2.3

**PREREQUISITE:** EVT- 2.2

**LECTURE HOURS:** 32.0

**LABORATORY HOURS:** 32.0

**TOTAL CLOCK HOURS:** 64.0

**TOTAL CREDITS HOURS** 3.0

**SUBJECTS:**

☒ Structural Anatomy

☒ Cross-Sectional Anatomy

☒ Clinical Indications

☒ Normal and Abnormal Conditions

☒ Imaging Techniques, Doppler Flow Pattern

☒ Report Writing

Emphasis is placed on the ability to recognize and identify upper extremities vascular systems. It includes a brief anatomical review of the systemic arteries and systemic veins. Cross-sectional anatomy of these structures and their appearance on the sonogram will also be discussed. This course will prepare the student to recognize the pathological processes of the upper vascular system. Students learn to perform Segmental Pressure, Segmental Plethysmographies, Duplex scanning of native arteries and veins of the upper extremities, including but not limited to false aneurysm and arteriovenous fistula identification.

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**COURSE NAME:** ABDOMINAL, PELVIC  
VASCULARITY AND LOWER EXTREMITIES;  
ARTERIAL AND VENOUS

**COURSE TITLE** EVT- 2.4

**PREREQUISITE:** EVT- 2.3

**LECTURE HOURS** 32.0

**LABORATORY HOURS** 32.0

**TOTAL CLOCK HOURS** 64.0

**TOTAL CREDITS HOURS** 3.0

**SUBJECTS:**

☒ Structural Anatomy

☒ Cross-Sectional Anatomy

☒ Clinical Indications

☒ Normal and Abnormal Conditions

☒ Imaging Techniques, Doppler Flow Pattern

☒ Report Writing

This course will introduce the student to ultrasound imaging of the abdominal and pelvic vascular system. It includes a brief anatomical review of the systemic arteries, systemic veins, and portal veins. Emphasis is placed on the ability to recognize and identify lower extremities vascular systems. It includes a brief anatomical review of the systemic arteries and systemic veins. Cross-sectional anatomy of these structures and their appearance on the sonogram will also be discussed. This course will prepare the student to recognize the pathological processes of the abdominal, pelvic vascularity and lower vascular system.

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COURSE DESCRIPTIONS (cont.)

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**COURSE NAME:** CARDIAC FUNDAMENTALS, PRINCIPLES  
OF CARDIAC PHARMACOLOGY

**COURSE TITLE:** EVT-.3.1  
**PREREQUISITE:** EVT- 2.4  
**LECTURE HOURS:** 16.0  
**LABORATORY HOURS:** 16.0  
**TOTAL CLOCK HOURS:** 32.0  
**TOTAL CREDITS HOURS:** 1.5

**SUBJECTS:**

☒ Medical Terminology  
☒ Cardiac Anatomy and Physiology  
☒ Electrocardiology  
☒ Principles of Cardiac pharmacology  
☒ ADME of Cardiac Specific Drugs  
☒ Drugs used for Cardiac Emergency  
☒ Imaging Techniques,

The purpose of this course is to explore in detail the construction and dynamics of the cardiovascular system. Topics include cardiac medical terminology and the metric conversions required in cardiac therapy, as well as cardiopulmonary anatomical and physiological considerations, cardiac pumping action and electrocardiology. Student learns its systemic and pulmonary circulations, basic principles of cardiac pharmacology and specific drugs. Classroom instruction will be coordinated with certain laboratory activities.

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**COURSE NAME:** PATHOLOGICAL MECHANISM AND NON-  
INVASIVE DIAGNOSTIC TESTS

**COURSE TITLE:** EVT- 3.2  
**PREREQUISITE:** EVT- 3.1  
**LECTURE HOURS:** 16.0  
**LABORATORY HOURS:** 16.0  
**TOTAL CLOCK HOURS:** 32.0  
**TOTAL CREDITS HOURS:** 1.5

**SUBJECTS:**

☒ Structural Anatomy  
☒ Sonographic Cross-Sectional Anatomy  
☒ Pathology/Pathophysiology  
☒ Clinical Indications and Therapeutic Measures  
☒ Abnormal Conditions and Congenital Diseases  
☒ Imaging Techniques, Doppler Flow Pattern  
☒ Test Procedures and Data Correlation

The course teaches and demonstrates knowledge of the cardiac structural anatomy. Cross-sectional anatomy of these structures and their appearance on the sonogram will also be discussed. This course will prepare the student to recognize the pathological processes and therapeutic measures. The student learns to identify and perform exams using duplex imaging, Duplex PW Doppler and Color Doppler with spectral analysis. The class teaches the student the basic concept of sonographic appearance, patient position during sonographic examinations, and interpretation of sonographic characteristics.

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**COURSE NAME:** HEMODYNAMICS AND  
PRACTICAL APPLICATION

**COURSE TITLE** EVT- 3.3  
**PREREQUISITE:** EVT- 3.2  
**LECTURE HOURS:** 32.0  
**LABORATORY HOURS:** 32.0  
**TOTAL CLOCK HOURS:** 64.0  
**TOTAL CREDITS HOURS:** 3.0

**SUBJECTS:**

☒ Principles of Flow  
☒ Measurements and normal values  
☒ Physical Considerations  
☒ M-mode and 2D Echocardiography  
☒ Assessment Techniques (Objective, Subjective)  
☒ Imaging Techniques, Doppler Flow Pattern  
☒ Test Procedures and Data Correlation  
☒ Report Writing

The purpose of this course is to explore in detail the construction and dynamics of the cardiovascular system. The student learns to identify and perform Cardiac Atrial and Ventricular Hemodynamics using duplex imaging, Duplex PW Doppler and Color Doppler with spectral analysis. Students learn to perform M-mode, and 2 Dimensional Echocardiography. Emphasis is placed on the ability to recognize and identify test procedures requirements and data correlation. Cross-sectional anatomy of these structures and their appearance on the sonogram will also be discussed.

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COURSE DESCRIPTIONS (cont.)

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**COURSE NAME:** DISEASE STATE

IDENTIFICATION

**COURSE TITLE:** EVT- 3.4

**PREREQUISITE:** EVT- 3.3

**LECTURE HOURS:** 34.0

**LABORATORY HOURS:** 32.0

**TOTAL CLOCK HOURS:** 66.0

**TOTAL CREDITS HOURS:** 3.0

**SUBJECTS:**

☒ Ischemic Heart and Coronary Artery Diseases

☒ Diseases of the Myocardium

☒ Acquired Valvular Disease

☒ Thrombi and Aneurysms

☒ Congenital Heart Disease

☒ Prosthetics Valve

This course will prepare the student to recognize the pathological processes of the cardiovascular system. The following topics will be discussed: Ischemic Heart and Coronary Artery Diseases, Myocardial and Pericardial Diseases, Infective Endocarditis and Rheumatic Heart Diseases, Acquired Valvular Heart disease, Heart failure, Thrombi and Aneurysms, Pulmonary Heart Disease, Murmurs, and congenital abnormalities and Prosthetic Valves. A thorough understanding of normal cardiovascular anatomy and physiology is mandatory in order to comprehend these advanced topics.

**COURSE NAME**

**EXTERNSHIPS**

**COURSE TITLE** DMS- 4.1

**PREREQUISITE:** ALL

**LECTURE HOURS** 0.0

**PRACTICAL HOURS** 240.0

**TOTAL CLOCK HOURS** 240.0

**TOTAL CREDITS HOURS** 5.0

**SUBJECTS:**

☒ Hands on Training

☒ Manual Analyses

☒ Automated Analyses,

☒ Monitoring and Control Procedures

☒ Evaluation and Reporting

Students participate in a clinical externship where they will gain hands on training. The clinical part of program provides students with actual hand-on experience providing diagnostic care to patient of all ages, stages of disease in doctor/imaging clinics affiliated with American Medical Sciences Center. During clinical rotations, students relate theory to practice by learning to process samples, operate instruments, perform manual/automated analyses, evaluate and report test results, and monitor control procedures to assure the accuracy of data. This series of courses provides students with the opportunity to observe and perform the role of the laboratory professional in the clinical setting. There are four different rotations each student must complete. We have made available to our students clinical training in stationary, mobile and hospital based imaging facilities.

**EXAMINATION SCHEDULE**

After completion of each course the students will take an exam. The students will also be taking a final exam after completing all the didactic modules.

**SUCCESSFUL COMPLETION**

A score of 70% or better is required for each such exam in order to receive credit for that particular module. Students must perform the practical portion of their training in an approved facility and receive a satisfactory evaluation. With the completion of this diploma program, which includes the externship, you may choose an option of sitting for a certification test with the RDMS (Registry of Diagnostic Medical Sonographers), RDCS (Registered of Diagnostic Cardiac Sonographers) or RVT (Registered Vascular Technologist), provided through ARDMS (American Registry of Diagnostic Medical Sonographers). For prerequisite information please visit the ardsm.org website, Examination Prerequisite, Chart page 12.

## **MEDICAL ASSISTANT**

**DIPLOMA PROGRAM    D.O.T. CODE 362.010, 079.382.018**  
**45.0 SEMESTER CREDIT HOURS, 960 CLOCK HOURS, 36WEEKS**

**EDUCATIONAL OBJECTIVE** The Medical Assistant program is comprised of eight modules plus externship. No one module is dependent on another module for the first seven modules. You must successfully complete modules one through seven to qualify for the eighth module and all eight modules must be successfully completed before you can enter externship. Each module is four weeks in length that culminates with an exam and a grade will be given at the end.

**PROFESSIONAL DUTIES** Medical assistants perform administrative and clinical tasks to keep the offices of physicians, podiatrists, chiropractors, and other health practitioners and facilities working properly. The duties of medical assistants vary from office to office, depending on the location and size of the practice and single practitioner office or multi-specialty practice. In small practices, medical assistants usually do many different kinds of tasks, handling both administrative and clinical duties and reporting directly to an office manager, physician, or other health practitioner.

**GRADUATION REQUIREMENTS**      Graduates must successfully complete all courses of the program with a minimum grade of 70% and all other curriculum requirements for their course of study. Students must perform the clinical portion of their training in an approved medical facility and receive a satisfactory evaluation. Graduation is acknowledged by awarding a diploma.

### **MEDICAL ASSISTANT PROGRAM OUTLINE**

<b>MOD ULES</b>	<b>MODULES NAME</b>	<b>COURSES NAME</b>	<b>COURSE TITLE</b>	<b>LECT CLOCK HOURS</b>	<b>LAB CLOCK HOURS</b>	<b>PRACT CLOCK HOURS</b>	<b>TOTAL CLOCK HOURS</b>	<b>TOTAL CREDITS HOURS</b>
<b>1</b>	<b>GENERAL EDUCATION PRE-REQUISITE COURSES</b>	Medical Terminology and Career Development	EVT-1.1	12.0	0.0	0.0	12.0	0.5
		Medical Ethics, Medical Law, and Communications Skills	EVT -1.2	8.0	0.0	0.0	8.0	0.5
		General Anatomy, Physiology and Pathophysiology	EVT -1.3	20.0	0.0	0.0	20.0	1.0
		Basic Algebra, Mathematics and Physics	EVT -1.4	20.0	0.0	0.0	20.0	1.0
		Scanning Techniques and Basic Patient Care	EVT -1.5	16.0	8.0	0.0	24.0	1.0
<b>2</b>	<b>VASCULAR TECHNOLOGY</b>	Ultrasound Physics	EVT -2.1	42.0	0.0	0.0	42.0	2.5
		Cerebrovascular System	EVT -2.2	32.0	0.0	0.0	32.0	2.0
		Upper extremities; Arterial and Venous	EVT -2.3	32.0	32.0	0.0	64.0	3.0
		Abdominal, Pelvic Vascularity And Lower Extremities.	EVT -2.4	32.0	32.0	0.0	64.0	3.0
<b>3</b>	<b>CARDIAC ULTRASOUND</b>	Cardiac Fundamentals, Principles of Cardiac Pharmacology	EVT -3.1	16.0	16.0	0.0	32.0	1.5
		Pathological Mechanism and Non-Invasive Diagnostic Tests	EVT -3.2	16.0	16.0	0.0	32.0	1.5
		Hemodynamics and Practical Application of Echocardiography	EVT -3.3	32.0	32.0	0.0	64.0	3.0
		Disease State Identification	EVT -3.4	34.0	32.0	0.0	66.0	3.0
<b>4</b>	<b>CLINICAL</b>	Externships	EVT -4.1	0.00	0.00	240	240	5.0

TOTAL	312	168	240	720	28.5
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## MEDICAL ASSISTANT PROGRAM DESCRIPTIONS

### MODULE 1 ORIENTATION AND OFFICE ADMINISTRATION

This module will introduce the student to the healthcare industry. This module begins by studying the medical assisting field in areas like employment conditions, credentialing, and the scope of practice in this state for a medical assistant. You will then learn terms and concepts in law and ethics. To complete this module you will learn the administrative aspects of running the front office. You will learn concepts in accounting, the healthcare insurance system in America, office procedures, management, using electronic hardware (i.e. computers, telephone systems, etc.), and keyboarding.

### MODULE 2 ANATOMY AND PHYSIOLOGY 1

In this module you will learn the anatomy and physiology of the musculoskeletal system. It includes a brief anatomical review of the systemic arteries and systemic veins. Classroom instruction will be coordinated with practical activities. You will also learn biochemistry and cellular structure.

### MODULE 3 ANATOMY AND PHYSIOLOGY 2

In this module you will learn the anatomy and physiology of the musculoskeletal system. It includes a brief anatomical review of the systemic arteries and systemic veins. Classroom instruction will be coordinated with practical activities. You will also learn biochemistry and cellular structure. The purpose of this module is to explore in detail the construction and dynamics of the cardiovascular system. Topics include anatomical and physiological considerations, cardiac pumping action and its regulation, basic hemodynamics, and systemic and pulmonary circulation. Classroom instruction will be coordinated with certain lab activities. This course will prepare the student to recognize the pathological processes of the cardiovascular system.

### MODULE 4 MEDICAL TERMINOLOGY

This module will focus on medical terminology. You will learn how medical terms are synthesized using prefixes, root words, and suffixes. In medicine most words are formed using the system of terminology and once you master it, you will be able to delineate the terms.

### MODULE 5 MEDICAL SPECIALTIES

This module will examine the different specialties in medicine. You will learn what each specialty does and how they work together and the relationship of one discipline with another. Psychiatry and psychology will be discussed in another module, however.

## **MODULE 6 CLINICAL MEDICAL ASSISTING**

**This module begins by studying the responsibilities of the medical assisting in the back office. You will learn about infection control because it is important when you assist the physician with minor surgeries done in the office. You will also have an in-depth study of vital signs and abnormalities associated with the results. Finally, you will learn how to assist with the all-important physical examination. The most important component of the physical examination is accurate and complete patient history taking.**

## **MODULE 7 LABORATORY PROCEDURES**

**This module covers laboratory procedures. You will learn venipuncture, blood draws. You will learn how to perform routine labs that are performed in some doctor's offices and learn about others that are normally sent out. You will also learn OSHA compliance.**

## **MODULE 8 HUMAN RELATIONS AND CAREER DEVELOPMENT**

This module will introduce the student to the very complex world of human relations. You will study human behavior, normal and abnormal, plus some common conditions that you would need to be aware of while working. You will also learn how to deal with patients who have severe and terminal illnesses and their families. You will also be introduced to the practices of psychology and psychiatry.

## **9**

**Students participate in a clinical externship where they will gain hands-on training. The clinical part of program provides students with actual hands-on experience providing diagnostic care to patients of all ages and stages of disease in doctor/imaging clinics affiliated with American Medical Sciences Center.**

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### **Module 9 Externship**

During your externship you will be evaluated. This evaluation by the clinic supervisor will determine whether you will pass or fail your externship. You will have limited opportunities to redo portions of your externship experience to help you to successfully complete. If you do not successfully complete those portions after a second try, you must retake as many of the modules in the program as necessary in order to successfully complete the externship program. There is no charge for the first two modules that are repeated. Additional modules are prorated at current tuition cost. If you do not succeed after few attempts and your adviser cannot see improvement, by school policy you will be terminated and you will have to re-enroll at current tuition cost and retake the entire program. You may not be eligible for financial aid the second time around; consult with a financial aid officer for more information.

NAME	INSTITUTION	DEGREES	CREDENTIALS
VARDAN KARAGEZIAN <i>Director/President (FT)</i>	<i>Medical Cybernetics University, Sonographer California School of Medical Sciences, L.A., CA</i>	<i>M.S.</i>	<i>Registered Sonographer</i>
HAIK ANTONYAN <i>Associate Director (FT)</i>	<i>University of Phoenix, La Mirada CA Rio-Hondo Community College, Whittier CA</i>	<i>B.S. A.S.</i>	<i>Human Services Business Management</i>
ALBINA PETROSIAN <i>Instructor (PT)</i>	<i>AMSC College, Glendale CA. Yerevan State University School of Medicine.</i>	<i>M.S.</i>	<i>Registered Sonographer</i>
IZABELLA ASADOURIAN <i>Instructor (PT)</i>	<i>AMSC College, Glendale CA. Yerevan State University School of Medicine.</i>	<i>M.S.</i>	<i>Registered Sonographer</i>
HASMIK MOUSHEGHIAN <i>Instructor (PT)</i>	<i>AMSC College, Glendale CA. Yerevan State University School of Medicine.</i>	<i>M.S.</i>	<i>Registered Sonographer</i>
ARTHUR KOSTANYAN <i>Instructor (PT)</i>	<i>American Registry for DMS Institute of Computer Technology</i>	<i>M.S.</i>	<i>Registered Sonographer</i>
SMBAT MIKAELIAN <i>Instructor (PT)</i>	<i>Yerevan State University School of Medicine.</i>	<i>M.S.</i>	<i>Registered Sonographer</i>
DAVID ABOVIAN <i>Instructor (PT)</i>	<i>AMSC College, Glendale CA. San Joaquin Valley College, Visalia CA</i>	<i>Diploma A.A.</i>	<i>PA (Physician Assistant)</i>
GRIGOR GALADZHYAN <i>Instructor (PT)</i>	<i>Los Angeles City College L.A., C.A.AMSC College Glendale, CA</i>	<i>A.A.</i>	<i>Registered Sonographer</i>

## DESCRIPTION OF POSITIONS AND RESPONSIBILITIES

NAME	TITLES	GENERAL DESCRIPTION OF POSITION	JOB DUTIES AND RESPONSIBILITIES
VARDAN KARAGEZIAN	<i>Director</i>	<i>The Director of the school is the chief executive officer of the company. All major school operation matters fall within the scope of the Director.</i>	<i>➤Establishes system for all administrative functions of the school. Secures proper staffing of administrative personnel. Maintains liaison with accrediting and approval agencies. Meets regularly with management personnel including department heads. Reviews all policies and procedures.</i>
HAIK ANTONYAN	<i>Associate Director</i>	<i>The Associate Director of the school is the enforcement officer of the company. All matters of the day-to-day operations of the school fall within the scope of the Associate Director.</i>	<i>➤Coordinates and supervises all staff to ensure effective and efficient processing of students through the learning process. Oversees administrative and management functions related to all departments. Maintains liaison with all accrediting and approval agencies. Reviews all enrollment, retention and placement activities.</i>
ANI ZULALYAN	<i>Financial Aid Officer</i>	<i>The Financial Aid Officer reports to the Associate Director and performs duties focused on school's financial Aid operations.</i>	<i>➤Assists in the execution of duties and responsibilities of the Financial Aid clerk; also processes the documentation of new enrollments and the satisfactory progress of current students; engages in financial aid students and offers administrative assistance when needed and/or requested.</i>
HRIPSIME CHILIAN	<i>Program Director</i>	<i>The Program Director is the chief program development officer of the school. The Director is also responsible for conducting one or more classes or components of the institution's educational services</i>	<i>➤Establishes academic system for all professional functions of the school. Meets regularly with instructional personnel.</i>
ASMIK ADADZHYAN	<i>Instructor</i>	<i>The Instructor is responsible for conducting one or more classes or components of the institution's educational services.</i>	<i>➤Each instructor shall possess the academic and professional qualifications to the particular educational service and to perform the particular duties that the instructor is assigned.</i>
GRIGOR GALADZHYAN	<i>Instructor</i>	<i>The Instructor is responsible for conducting one or more classes or components of the institution's educational services.</i>	<i>➤Each instructor shall possess the academic and professional qualifications to the particular educational service and to perform the particular duties that the instructor is assigned.</i>

## MEMBERS OF ADVISORY BOARD

**HRIPSIME CHILIAN**  
**PETER ATOYAN**  
**VALERA MARTIROSYAN**

**Public Member, Former Student, ARDMS, RVT, RDMS**  
**Public Member Licensed Vocational Nurse (LVN)**  
**Public Member ARRT**