

# Cardiovascular Sonography

## Associate of Science Degree Program

**Contact Hours:** 2,175

**Semester Credits:** 89.5

**Instructional Weeks – Full Time:** 80

**Average Time to Complete – Full Time:** 20 Months

## Program Overview

Cardiovascular sonographers use special imaging equipment that directs sound waves into a patient's body (in a procedure commonly known as an ultrasound, sonogram, or echocardiogram) to assess and diagnose various medical conditions.

The Cardiovascular Sonography curriculum integrates didactic and clinical instruction with increasing expectations at each level. Clinical sites utilized by the program are geographically dispersed. Students may have to travel outside of the local area for clinical placements.

## Program Delivery

The Cardiovascular Sonography program is delivered in a blended format. Courses will be delivered entirely online, entirely on-ground or with an appropriate blend of both online and on-ground hours in the same course. Of the 2,175 program hours, a maximum of 775 course hours (35.6%) may be offered online (including general education courses). Campuses may have the option to deliver general education courses either online or on-ground depending on local need and availability specific time, regardless of their eligibility status upon enrollment.

## Program Objectives

To prepare competent entry-level cardiac sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains for the following concentration(s) it offers:

- Adult Cardiac Sonography

Graduates of this program will develop skills to:

- Be clinically competent to perform appropriate procedures and record anatomic, pathologic, and/or physiologic data;
- Apply critical thinking and problem-solving skills to exercise discretion and judgment in performance of diagnostic sonography;
- Demonstrate appropriate communication skills; and
- Demonstrate professionalism and growth in the profession.

## Term 1

| Course # | Course Title                    | Pre-Requisites | Co-Requisites | Theory Hours<br>(Ground/Online) | Lab Hours<br>(Ground/Online) | Clinical Hours<br>(Ground/Online) | Semester Credit<br>Hours |
|----------|---------------------------------|----------------|---------------|---------------------------------|------------------------------|-----------------------------------|--------------------------|
| COMM1310 | Elements of Human Communication |                |               | 45 ( 0 / 45 )                   | 0                            | 0                                 | 3                        |
| MATH1320 | College Algebra                 |                |               | 45 ( 0 / 45 )                   | 0                            | 0                                 | 3                        |
| BIOL1405 | Anatomy & Physiology            |                |               | 60 ( 0 / 60 )                   | 0                            | 0                                 | 4                        |

|                 |                           |  |   |                    |                  |          |           |
|-----------------|---------------------------|--|---|--------------------|------------------|----------|-----------|
| BIOL1131        | Anatomy & Physiology VLab |  | 0 | 30 ( 0 / 30 )      | 0                | 1        |           |
| <b>Subtotal</b> |                           |  |   | <b>150 (0/150)</b> | <b>30 (0/30)</b> | <b>0</b> | <b>11</b> |

## Term 2

| Course #        | Course Title                         | Pre-Requisites | Co-Requisites | Theory Hours (Ground/Online) | Lab Hours (Ground/Online) | Clinical Hours (Ground/Online) | Semester Credit Hours |
|-----------------|--------------------------------------|----------------|---------------|------------------------------|---------------------------|--------------------------------|-----------------------|
| HPRS1320        | Foundations for Health Professionals |                |               | 45 ( 0 / 45 )                | 0                         | 0                              | 3                     |
| PHYS1311 *      | Introductory Physics                 |                |               | 45 ( 0 / 45 )                | 0                         | 0                              | 3                     |
| ENGL1310        | English Composition I                |                |               | 45 ( 0 / 45 )                | 0                         | 0                              | 3                     |
| PSYC1310        | General Psychology                   |                |               | 45 ( 0 / 45 )                | 0                         | 0                              | 3                     |
| <b>Subtotal</b> |                                      |                |               | <b>180 (0/180)</b>           | <b>0</b>                  | <b>0</b>                       | <b>12</b>             |

## Term 3

| Course #        | Course Title                | Pre-Requisites       | Co-Requisites | Theory Hours (Ground/Online) | Lab Hours (Ground/Online) | Clinical Hours (Ground/Online) | Semester Credit Hours |
|-----------------|-----------------------------|----------------------|---------------|------------------------------|---------------------------|--------------------------------|-----------------------|
| CVSG1210        | Scanning Lab I              | HPRS1320<br>PHYS1310 |               | 0                            | 80 ( 65 / 15 )            | 0                              | 2.5                   |
| DMSG1810        | Physics and Instrumentation | HPRS1320<br>PHYS1310 |               | 120 ( 60 / 60 )              | 0                         | 0                              | 8                     |
| ECGY1330        | Electrophysiology           | HPRS1320<br>PHYS1310 |               | 30 ( 5 / 25 )                | 30 ( 30 / 0 )             | 0                              | 3                     |
| <b>Subtotal</b> |                             |                      |               | <b>150 (65/85)</b>           | <b>110 (95/15)</b>        | <b>0</b>                       | <b>13.5</b>           |

## Term 4

| Course #        | Course Title                    | Pre-Requisites                   | Co-Requisites | Theory Hours (Ground/Online) | Lab Hours (Ground/Online) | Clinical Hours (Ground/Online) | Semester Credit Hours |
|-----------------|---------------------------------|----------------------------------|---------------|------------------------------|---------------------------|--------------------------------|-----------------------|
| CVSG1240        | Echocardiography Scanning Lab I | DMSG1810<br>CVSG1210<br>ECGY1330 |               | 0                            | 80 ( 65 / 15 )            | 0                              | 2.5                   |
| CVSG1340        | Cardiovascular Pathology        | DMSG1810<br>CVSG1210<br>ECGY1330 |               | 45 ( 20 / 25 )               | 0                         | 0                              | 3                     |
| CVSG1640        | Echocardiography I              | DMSG1810<br>CVSG1210<br>ECGY1330 |               | 90 ( 20 / 70 )               | 0                         | 0                              | 6                     |
| <b>Subtotal</b> |                                 |                                  |               | <b>135 (40/95)</b>           | <b>80 (65/15)</b>         | <b>0</b>                       | <b>11.5</b>           |

## Term 5

| Course # | Course Title | Pre-Requisites | Co-Requisites | Theory Hours (Ground/Online) | Lab Hours (Ground/Online) | Clinical Hours (Ground/Online) | Semester Credit Hours |
|----------|--------------|----------------|---------------|------------------------------|---------------------------|--------------------------------|-----------------------|
|----------|--------------|----------------|---------------|------------------------------|---------------------------|--------------------------------|-----------------------|

|                 |                                  |                                  |                     |                   |          |             |
|-----------------|----------------------------------|----------------------------------|---------------------|-------------------|----------|-------------|
| CVSG2250        | Echocardiography Scanning Lab II | CVSG1640<br>CVSG1240<br>CVSG1340 | 0                   | 80 ( 65 / 15 )    | 0        | 2.5         |
| CVSG2251        | Cardiovascular Pharmacology      | CVSG1640<br>CVSG1240<br>CVSG1340 | 30 ( 0 / 30 )       | 0                 | 0        | 2           |
| CVSG2850        | Echocardiography II              | CVSG1640<br>CVSG1240<br>CVSG1340 | 120<br>( 20 / 100 ) | 0                 | 0        | 8           |
| <b>Subtotal</b> |                                  |                                  | <b>150 (20/130)</b> | <b>80 (65/15)</b> | <b>0</b> | <b>12.5</b> |

## Term 6

| Course #        | Course Title                        | Pre-Requisites                   | Co-Requisites    | Theory Hours<br>(Ground/Online) | Lab Hours<br>(Ground/Online) | Clinical Hours<br>(Ground/Online) | Semester Credit<br>Hours |
|-----------------|-------------------------------------|----------------------------------|------------------|---------------------------------|------------------------------|-----------------------------------|--------------------------|
| CVSG2360        | Vascular Sonography I               | CVSG2850<br>CVSG2250<br>CVSG2251 |                  | 30 ( 5 / 25 )                   | 30 ( 30 / 0 )                | 0                                 | 3                        |
| CVSG2760        | Cardiovascular Clinical Education I | CVSG2850<br>CVSG2250<br>CVSG2251 |                  | 0                               | 0                            | 320 ( 320 / 0 )                   | 7                        |
| <b>Subtotal</b> |                                     |                                  | <b>30 (5/25)</b> | <b>30 (30/0)</b>                | <b>320 (320/0)</b>           | <b>10</b>                         |                          |

## Term 7

| Course #        | Course Title                         | Pre-Requisites       | Co-Requisites    | Theory Hours<br>(Ground/Online) | Lab Hours<br>(Ground/Online) | Clinical Hours<br>(Ground/Online) | Semester Credit<br>Hours |
|-----------------|--------------------------------------|----------------------|------------------|---------------------------------|------------------------------|-----------------------------------|--------------------------|
| CVSG2370        | Vascular Sonography II               | CVSG2360<br>CVSG2760 |                  | 30 ( 5 / 25 )                   | 30 ( 30 / 0 )                | 0                                 | 3                        |
| CVSG2770        | Cardiovascular Clinical Education II | CVSG2360<br>CVSG2760 |                  | 0                               | 0                            | 320 ( 320 / 0 )                   | 7                        |
| <b>Subtotal</b> |                                      |                      | <b>30 (5/25)</b> | <b>30 (30/0)</b>                | <b>320 (320/0)</b>           | <b>10</b>                         |                          |

## Term 8

| Course #        | Course Title                          | Pre-Requisites       | Co-Requisites        | Theory Hours<br>(Ground/Online) | Lab Hours<br>(Ground/Online) | Clinical Hours<br>(Ground/Online) | Semester Credit<br>Hours |
|-----------------|---------------------------------------|----------------------|----------------------|---------------------------------|------------------------------|-----------------------------------|--------------------------|
| CVSG2280        | Cardiovascular Registry Review        | CVSG2370<br>CVSG2770 |                      | 30 ( 20 / 10 )                  | 0                            | 0                                 | 2                        |
| CVSG2780        | Cardiovascular Clinical Education III | CVSG2370<br>CVSG2770 |                      | 0                               | 0                            | 320 ( 320 / 0 )                   | 7                        |
| <b>Subtotal</b> |                                       |                      | <b>30 (20/10)</b>    | <b>0</b>                        | <b>320 (320/0)</b>           | <b>9</b>                          |                          |
| <b>Total</b>    |                                       |                      | <b>855 (155/700)</b> | <b>360 (285/75)</b>             | <b>960 (960/0)</b>           | <b>89.5</b>                       |                          |

\*For students who start on or after September 18, 2023, this course will change from PHYS1310 to PHYS1311

General education courses (those with prefixes other than CVSG or DMSG) may be scheduled in any term providing that prerequisites are honored. In addition, these courses may be offered 100% online or 100% on ground