

RCTC PROGRAM PLAN

CARDIOVASCULAR INVASIVE SPECIALIST

Associate of Applied Science

An Affiliated Program with the Mayo Clinic School of Health Sciences

I. MINNESOTA TRANSFER CURRICULUM (MnTC)/

GENERAL EDUCATION REQUIREMENTS.....22 CREDITS

GOAL 1: WRITTEN AND ORAL COMMUNICATION4 CR

ENGL 1117, Reading and Writing Critically I, 4 cr

GOAL 3: NATURAL SCIENCES15 CR

BIOL 1217, Anatomy and Physiology I, 4 cr

BIOL 1218, Anatomy and Physiology II, 4 cr

CHEM 1117, General, Organic and Biological Chemistry I, 4 cr

PHYS 1103, Principles of Physics, 3 cr

GOAL 6: HUMANITIES - THE ARTS, LITERATURE AND PHILOSOPHY3 CR

RECOMMENDED:

PHIL 1135, Bioethics, 3 cr **OR**

PHIL 1125, Ethics, 3 cr

II. PROGRAM CORE REQUIREMENTS.....41 CREDITS

Year 1: August-May (All courses are Mayo courses)

CVIS 1010, Introduction to Cardiology, 2 cr

CVIS 1020, Introduction to Electrocardiography, 2 cr

Year 2: June-May

CVIS 2010, Cardiovascular Physiology & Pathophysiology, 4 cr

CVIS 2020, Invasive Cardiology I, 5 cr

CVIS 2030, Cardiovascular Pharmacology, 2 cr

CVIS 2021, Invasive Cardiology II, 6 cr

CVIS 2040, Clinical, 6 cr

CVIS 2060, Diagnostic Imaging and Fluoroscopy, 2 cr

CVIS 2070, Internship, 12 cr

TOTAL63 CREDITS

RCTC PROGRAM PLAN

REGISTERED CARDIOVASCULAR INVASIVE SPECIALIST COURSE SEQUENCE

LENGTH: 21 months

FALL SEMESTER (RCTC & MAYO)

BIOL 1217 4 cr
CHEM 1117 4 cr
PHYS 1103 3 cr
CVIS 1010 2 cr

TOTAL 13 cr

SPRING SEMESTER (RCTC & MAYO)

BIOL 1218 4 cr
ENGL 1117 4 cr
PHIL 1125/1135 3 cr
CVIS 1020 2 cr

TOTAL 13 cr

TOTAL (YEAR 1)

26 cr

YEAR 2 JUNE-AUGUST (SUMMER SESSION)

CVIS 2010 4 cr
CVIS 2020 5 cr
CVIS 2060 2 cr

YEAR 2 AUGUST –DECEMBER (FALL SEMESTER)

CVIS 2030 2 cr
CVIS 2021 6 cr
CVIS 2040** 6 cr

YEAR 2 JANUARY-MAY (SPRING SEMESTER)

CVIS 2070** 12 cr

TOTAL (YEAR 2)

37 cr

****Clinical Hours = 64 hours = 1 semester credit**

PROGRAM OUTCOMES:

Upon completion of the Cardiovascular Invasive Specialist program at RCTC, students will achieve the following outcomes:

- Fundamental understanding of the principles underlying the clinical profession of cardiovascular technology.
- Ability to demonstrate a working clinical knowledge of modalities utilized for diagnostic and interventional cardiology procedures.
- Ability to articulate the basics of skill acquisition for self-directed learning for continuing education relating to the field of invasive interventional cardiology after successful completion of their formal studies.
- Ability to demonstrate the technical skills in the clinical setting in primary areas of cardiovascular technology practice.

RCTC PROGRAM PLAN

- Ability to demonstrate the basic clinical skills, techniques, and competencies required to practice as a cardiovascular technologist in order to perform and assist with a broad base of diagnostic and interventional cardiovascular procedures.
- Awareness and commitment to practicing according to the clinical standards, ethical principles, and the legal requirements of the profession of cardiovascular technology; and to the values of the Mayo Clinic, and Mayo Clinic School of Health Sciences.
- Demonstrate the awareness of cultural and diversity differences in the workplace as evidenced by the ability to practice in a continuum of diverse health care environments.
- Exemplify appropriate and professional skills of interpersonal communication with all patients and with all other members of the health care team.
- Actively engage in multifaceted roles of an active professional, including technologist, educator, researcher, collaborator, advocate and life-long learner.
- Ability to demonstrate an understanding of the responsibilities of all health care workers to contribute to the enhancement of the health and welfare of society.

ADDITIONAL NOTES:

PURPOSE: This program educates graduates to work in collaboration and under the supervision of physicians to assist with the preparation and to perform diagnostic and therapeutic invasive cardiology procedures. The technologist must have the technical skills and competence to assist with these invasive procedures. Invasive cardiovascular procedures are performed in a clinical cardiovascular laboratory environment.

The areas of study are cardiovascular anatomy and physiology, cardiovascular pathophysiology, electrocardiography, cardiovascular pharmacology, diagnostic angiography, interventional angiography, electrophysiology, cardiac pacing, cardiovascular hemodynamics, valvular assessment, pediatric/congenital heart disease assessment, cardiac/coronary physio instrumentation and electronics associated with the cardiac laboratory environment.

Cardiovascular anatomy and physiology and pathophysiology concentrate on the structures, function, and disease processes of the heart. Angiography and interventional cardiology concentrate on the specific entities of coronary anatomy and treatment(s) for various disease entities of the heart. The cardiac electrical system and its diagnosis and treatment(s) are the areas concentrated on in electrophysiology and cardiac pacing. Advanced cardiac assessment (i.e.: hemodynamics, coronary physiology, cardiac valve study, congenital heart disease, etc.) concentrate on in-depth cardiovascular anatomical and physiological data. Instrumentation, electronics, and x-ray basics concentrate on the radiation and electrical processing and safety in the clinical cardiovascular laboratory setting.

ADMISSION: Students are admitted into this program through the Mayo Clinic School of Health Sciences Cardiovascular Invasive Specialist Program. The application for admission to the CVIS Program, Mayo Clinic School of Health Sciences must be obtained online (<https://college.mayo.edu/academics/health-sciences-education/cardiovascular-invasive-specialist-minnesota/how-to-apply/>) or from the Mayo Clinic School of Health Sciences and submitted no later than March 1. Following appointment to the program by the Mayo Clinic School of Health Sciences, students must apply to RCTC. Admission is competitive. It is based on previous education, work experience, goal statement, letters of reference, and an interview. Science and math courses must be completed within the previous five years.

RCTC PROGRAM PLAN

PROGRAM ENTRANCE REQUIREMENTS:

- Required: High school diploma or equivalent.
- Basic computer competence or keyboarding
- High School biology and chemistry are required; High School physics is recommended or completion of the RCTC or college transfer equivalents
- High School algebra II and placement at an algebra course beyond this class on a college placement test or completion of RCTC MATH 0099 or the equivalent
- Graduation in the upper one-half of the high school graduating class with a 2.75 GPA or better.

**Science and math prerequisite courses must have been completed within five years of your application to the program.*

- College level reading skills and writing readiness as tested by ASAP or prior college course work.
- Proof of completion of a CPR course is required prior to beginning CVIS 1010 and must be current through either the American Heart Association Cardiopulmonary Resuscitation & Emergency Cardiac Care for Health Care Provider.

MORE INFORMATION REQUIREMENTS:

Registration and Sequence of Courses: This is a 21-month program consisting of 63 credits. During the first two semesters at RCTC, students will take general education courses as well as CVIS courses. (All Year 1 courses must be completed before proceeding into Year 2 course work at Mayo). After that time all the coursework is at the Mayo Medical Center – St. Mary's Hospital campus and at Mayo affiliated sites. Course sequences are specified on the Degree Program Sheet.

Program Completion: Those who complete the program will be awarded a Certificate of Completion by the Mayo Clinic College of Medicine and Science and the Mayo Clinic School of Health Sciences, and an Associate in Applied Science Degree by RCTC.

Graduates are eligible to take professional certification examinations given by Neurodiagnostic Credentialing and Accreditation (ABRET), American Association of Electrodiagnostic Technologists (AAET), American Board of Electrodiagnostic Medicine (ABEM)) and the Board of Registered Polysomnographic Technologists (BRPT).

Revised: 05/14/2019

Implementation: Spring 2019