

# 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.....28 CREDITS**

**GOAL 1: WRITTEN AND ORAL COMMUNICATION .....7 CR**

ENGL 1117, Reading and Writing Critically I, 4 cr

COMM 1114, Fundamentals of Public Speaking, 3 cr OR

COMM 1130, Interpersonal Communication, 3 cr

**GOAL 3: NATURAL SCIENCES .....15 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 4: MATHEMATICAL/LOGICAL REASONING .....3 CR**

MATH 1115, College Algebra, 3 cr

**GOAL 6: HUMANITIES - THE ARTS, LITERATURE AND PHILOSOPHY .....3 CR**

PHIL 1135, Bioethics, 3 cr OR

PHIL 1125, Ethics, 3 cr

### II. MAYO CLINIC CVIS CORE REQUIREMENTS .....33 CREDITS

*The following courses are offered through the Mayo Clinic School of Health Sciences:*

CVIS 1101, Introduction to Cardiology, 3 cr

CVIS 1020, Introduction to Electrocardiography, 3 cr

CVIS 2010, Cardiovascular Physiology & Pathophysiology, 3 cr

CVIS 2020, Invasive Cardiology I, 3 cr

CVIS 2030, Cardiovascular Pharmacology, 3 cr

CVIS 2021, Invasive Cardiology II, 3 cr

CVIS 2040, Clinical, 4 cr

CVIS 2060, Diagnostic Imaging and Fluoroscopy, 3 cr

CVIS 2070, Internship, 8 cr

**TOTAL .....61 CREDITS**

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## **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.
- 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

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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. Admission is competitive. Admission and application requirements can be found:

<https://college.mayo.edu/academics/health-sciences-education/cardiovascular-invasive-specialist-minnesota/how-to-apply/>

**Program Completion:** Upon successful completion of the program, all graduates receive 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: 2/11/2025

Implementation: Fall 2025