

Cardiothoracic Surgery

Chair

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Undergraduate certificate: perfusion technology

Website: <https://medicine.uiowa.edu/perfusion/>

The University of Iowa cardiothoracic surgery program is the third oldest program of its kind in the United States. Since its establishment in 1948 as a division within the Department of Surgery, it is now its own department providing operative interventions for patients with diseases of the chest and performing a broad range of the most current and innovative surgical procedures.

Cardiothoracic surgery's facilities are located at University of Iowa Hospitals & Clinics. Each year cardiothoracic surgeons at the hospitals perform more than 500 adult and pediatric heart surgeries, including coronary bypasses, transplants, and placement of mechanical cardiac assist devices; minimally invasive procedures such as mitral valve replacement and epicardial lead placement; and more than 600 general thoracic surgeries with emphasis on esophageal and lung diseases. Preparations are underway for providing coronary artery bypass grafting using robotics.

The Perfusion Technology Program is a 20-month program of study. For more information about the Perfusion Technology Program, visit the Perfusion Technology Program website.

Programs

Undergraduate Program of Study Certificate

- Certificate in Perfusion Technology

Residency

Iowa's cardiothoracic surgery residency program was established in 1948 and is fully accredited by the Accreditation Council for Graduate Medical Education (ACGME). It is the only cardiothoracic surgery training program in Iowa. One resident is accepted into the two-year fellowship program each year. Cardiothoracic surgery was approved by the ACGME to start a six-year integrated thoracic residency. Medical students begin the program after they graduate from medical school. A new resident enters the program each year.

Facilities

Cardiothoracic surgery has specialty laboratories in gastric motility, analytical chemistry, transplantation, tissue culture, surgical bacteriology, shock, and cardiac bypass. These facilities permit study of experimental procedures such as heart valve replacement in large animals and heterotopic heart transplantation in mice and rats.

Courses

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Cardiothoracic Surgery Courses

CTS:8401 Advanced Inpatient Subinternship in Cardiothoracic Surgery arr.

Participation in diagnosis, preoperative, operative, and postoperative care of thoracic and cardiac patients; attendance at division conferences; students assume responsibility and act as an intern; may concentrate interest in cardiac surgery or thoracic surgery; diagnosis and management of patients on an inpatient service under close supervision by an upper-level resident/fellow and faculty member.

CTS:8497 Research in Cardiothoracic Surgery arr.

Work on a short- or long-term research project arranged with instructor; may involve clinical material or laboratory; students organize and complete a project, finishing with a publishable manuscript.

CTS:8498 Cardiothoracic Surgery On Campus arr.

Clinical clerkship individually arranged by student with department approval.

CTS:8499 Cardiothoracic Surgery Off Campus 4 s.h.

Individually arranged by student with approval of department to rotate outside of University of Iowa Hospitals & Clinics. Requirements: MD enrollment.

Perfusion Technology Courses

PERF:4161 Instrumentation in Perfusion Technology 3 s.h.

Electrical circuitry, filters, pressure transducers, thermistors, cardiac output computers, fluid dynamics, intra-aortic balloon pumps, blood gas analyzers. Requirements: Perfusion Technology Program enrollment.

PERF:4162 Pathophysiology of Perfusion Technology 5 s.h.

Hemostasis, acid base physiology, gas transfer, heart anatomy, heart embryology, congenital cardiac defects. Requirements: Perfusion Technology Program enrollment.

PERF:4163 Clinical Experience I 2 s.h.

Perfusion in operating room: patient workup, observation, and reporting on extracorporeal setup, surgical procedure. Requirements: Perfusion Technology Program enrollment.

PERF:4164 Clinical Experience II 3 s.h.

Continuation of PERF:4163; setup of extracorporeal circuit; ancillary duties of perfusionist. Requirements: Perfusion Technology Program enrollment.

PERF:4165 Clinical Experience III 12 s.h.

Continuation of PERF:4164; management of cardiopulmonary bypass system. Requirements: Perfusion Technology Program enrollment.

PERF:4166 Clinical Experience IV 12 s.h.

Continuation of PERF:4165; emphasis on supply maintenance, perfusion department management. Requirements: Perfusion Technology Program enrollment.

PERF:4167 Perfusion Seminar 1 s.h.

Ethics in perfusion. Requirements: Perfusion Technology Program enrollment.

PERF:4168 Research in Perfusion 1 s.h.

From topic selection to manuscript. Requirements: Perfusion Technology Program enrollment.

PERF:4169 Clinical Experience V 12 s.h.

Continuation of PERF:4166. Requirements: Perfusion Technology Program enrollment.

PERF:4170 Principle and Practice of Perfusion Technology 6 s.h.

Hypothermia, hemodilution, left heart bypass, dialysis, ultrafiltration, membrane and bubbler oxygenation. Requirements: Perfusion Technology Program enrollment.

PERF:4171 Devices in Perfusion Technology 3 s.h.

Components of extracorporeal circuit; in vitro laboratory evaluation of components. Requirements: Perfusion Technology Program enrollment.