

# CLINICAL AND TRANSLATIONAL INVESTIGATION

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<https://med.miami.edu/graduate-studies/master-programs/ms-in-clinical-and-translational-investigation>

## Overview

The Master of Science in Clinical and Translational Investigation (MSCTI) at the University of Miami offers a structured educational program that trains students in the principles and practice of translational science and clinical research. Our multidisciplinary program has been designed to prepare practitioners and researchers to adapt to translational science and to overcome the perceived bottlenecks that inhibit translational research. We equip our students with the tools to navigate the complexities of translational research design, methodology, regulatory and ethical challenges.

Drawing upon the University of Miami Miller School of Medicine's mission to educate the next generation of medical leaders and to lead life-changing discoveries that transform patient care through innovative research, the Master of Science in Clinical and Translational Investigation (MSCTI) degree program's mission is to educate the next generation of investigators who demonstrate the ability to review, design, and conduct high-quality, multidisciplinary clinical and translational research independently.

Our educational objective is to provide an instructor-led educational curriculum that introduces students to key areas of clinical and translational research, and to produce graduates who demonstrate core competencies in clinical and translational research. Students will learn how to design independent and collaborative research projects and become well-versed in key aspects of clinical and translational investigation.

## Course of Study

The Masters in Clinical and Translational Investigation can typically be completed in 4-6 consecutive terms (Fall, Spring, Summer) depending on the goals and professional responsibilities of the student. The 30 credit-hour program includes completion of structured taught courses and completion of a master's thesis which may take the form of a completed research grant proposal or publishable manuscript. Successful completion of the MSCTI requires students to maintain a GPA of 3.0 or greater with no grade below C in any courses and successful completion of the master's thesis.

Students who intend to complete the MSCTI program part-time must discuss their plan with their employer and make adjustments as needed to attend course lectures. Students who are studying with an F1 visa must enroll in a minimum of nine credits per semester.

## Contact Information

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MS Clinical and Translational Investigation Website  
305 243 6398

## Admissions Requirements

### Admission Requirements

We accept applications from individuals who meet any of the following criteria:

- Individuals who have completed terminal healthcare degrees (e.g., MD, PhD, DO, RN) who are interested in pursuing additional formal didactic training to become independent investigators in clinical and/or translational science;
- Individuals who have completed terminal scientific degrees (e.g., Ph.D., DSci) who are interested in pursuing additional formal didactic training to improve knowledge and skills related to translation of basic to clinical applications; and
- Students who have completed a Bachelor's degree who have outstanding academic credentials and an interest in obtaining a MS prior to a career in clinical translational research or a graduate program will also be eligible.

Detailed information about the application package requirements can be found here (<https://med.miami.edu/graduate-studies/master-programs/ms-in-clinical-and-translational-investigation/application-process/>).

## Master's Programs

- M.S. in Clinical and Translational Investigation (<http://bulletin.miami.edu/graduate-academic-programs/medicine/clinical-translational-investigation/clinical-and-translational-investigation-ms/>)

## Course Descriptions

### **CTI 602. Writing for Translational and Clinical Science. 2 Credit Hours.**

This introductory core course will be taught by the Masters of Science in Clinical and Translational Investigation (MSCTI) Program Directors, as well as various guest lecturers. The focus of the course will be on developing grant and manuscript writing skills in the area of clinical and translational science across the translational science spectrum.

**Components:** LEC.

**Grading:** GRD.

**Typically Offered:** Spring.

### **CTI 603. Research Ethics. 3 Credit Hours.**

Course focuses on topics related to what is sometimes called the "responsible conduct of research" (RCR). It covers the landscape of "scientific integrity" - both the principles and day-to-day practicalities of research ethics. The course is inter-disciplinary in its approach. Readings and other materials used as part of the course draw on the examples from many academic fields, and are intended to have application to any academic or professional area of study in which research is conducted.

**Components:** LEC.

**Grading:** GRD.

**Typically Offered:** Fall.

### **CTI 604. Advanced Independent Study. 1-3 Credit Hours.**

Individual work on a special project and/or additional coursework under faculty guidance.

**Components:** IND.

**Grading:** GRD.

**Typically Offered:** Fall, Spring, & Summer.

### **CTI 605. Introduction to Team Science and Entrepreneurship. 2 Credit Hours.**

This introductory core course will introduce students to fundamental topics in translational science related to team science and entrepreneurship. Through a series of lectures, participatory exercises, and guided discussions, students will learn practical strategies for engaging in team science and for developing a translational research project into an entrepreneurial endeavor.

**Components:** DIS.

**Grading:** GRD.

**Typically Offered:** Fall.

### **CTI 615. Statistical Methods for Clinical and Translational Research. 3 Credit Hours.**

This introductory course is a core course for students admitted to the MSCTI and for others who are interested in the topics relevant to clinical and translational research. Topics to be addressed include explanatory and descriptive data analysis with numerical and graphical displays, hypothesis testing procedures, and commonly used regression modeling. Special topics in advanced methods will also be briefly introduced. This course will offer introductory materials to commonly used statistical methods and their application in clinical and translational science. Topics will be covered by first introducing the theory and then illustrating its application and analyses methods with the use of statistical software in case study scenarios. Students will be assigned several group projects and will give a final presentation that illustrates the correct use of select statistical methods and the proper presentation of analysis results.

**Components:** LEC.

**Grading:** GRD.

**Typically Offered:** Spring.

### **CTI 805. Capstone Project / Master's Thesis. 1-6 Credit Hours.**

The Capstone Project is an opportunity for MSCTI students to apply the principles and practices of clinical and translational research, and is a vital component in the training of impactful clinical and translational investigators. Students will engage in research, produce publishable content, and advance their research careers.

**Components:** THI.

**Grading:** SUS.

**Typically Offered:** Fall, Spring, & Summer.