

CLINICAL AND TRANSLATIONAL SCIENCE (CTS) – CERTIFICATE - DELETE

• M. Hassan Murad, M.D., MPH, *Program Director*

The Certificate Program in Clinical and Translational Science (<https://www.mayo.edu/research/centers-programs/center-clinical-translational-science/education/postdoctoral-masters-degree-program/>) is open only to Mayo Clinic employees who have a doctoral degree in a discipline applicable to clinical research and are pursuing a clinical and translational research project that will lead to improvements in human health. Potential candidates for the Certificate must hold Mayo Clinic appointments of sufficient duration to complete the program requirements. Visiting research fellows are eligible to apply. However, visiting clinicians and research trainees are not eligible.

Course Work

The curriculum for the Certificate award consists of **13 credits (14 credits for those pursuing a concentration)**. The student must complete all of the required courses listed below:

Code	Title	Hours
Core Courses		
MGS 6000	Responsible Conduct of Research	1
Track Requirements		
CTSC 5010	Clinical Research Proposal Development	2
CTSC 5100	Academic Publishing	1
CTSC 5370	Introduction to Epidemiology	2
CTSC 5600	Introduction to Statistics in Clinical and Translational Research	3
Electives		
Students can choose to focus their elective credits into one of the concentration areas listed below or select their elective credits based on recommendations from their mentor or based on their professional goals. ¹		5
Total Hours		14

¹ Students are encouraged to select their elective credits from CTSC courses – CORE courses are also acceptable. However, other courses listed in the MCGSBS catalog may be taken with prior approval from the CCaTS Postdoctoral Executive Committee.

Concentration Requirements

Biomedical Ethics (BET)

(5 credits required)

Code	Title	Hours
CTSC 5261	Theoretical and Historical Foundations of Biomedical Ethics	2
CTSC 5262	Health Policy and Biomedical Ethics	1
Select two of the following:		2

CTSC 5210	Ethical Issues in Regenerative Medicine	
CTSC 5263	Ethical Issues in Population Health	
CTSC 5340	Ethical Issues in Individualized Medicine	
CTSC 5350	Ethical Issues in Artificial Intelligence and Information Technologies	
Total Hours		5

Clinical Trials (CLTR)

(5 credits required)

Code	Title	Hours
CTSC 5020	Regulatory Issues in Clinical Research	1
CTSC 5025	Introduction to Regulatory Science	1
CTSC 5602	Introduction to Utilizing Statistical Software in Clinical and Translational Research	1
CTSC 5720	Clinical Trials Design and Conduct	1
CTSC 6170	The Science of Team Science - Strategies for Success	1
Total Hours		5

Individualized Medicine (IDVM)

(5 credits required)

Code	Title	Hours
CTSC 5340	Ethical Issues in Individualized Medicine	1
CTSC 5400	Introduction to Bioinformatics Concepts and Core Technologies for Individualized Medicine Approaches	1
CTSC 5410	Molecular Variant Evaluation	2
CTSC 6160	Genomic Analysis and Data Interpretation for Rare and Undiagnosed Diseases	2
Total Hours		6

Mixed Methods Research (MIXM)

(5 credits required)

Code	Title	Hours
CTSC 5810	Qualitative Research Design, Methods, and Analysis	1
CTSC 5815	Qualitative and Mixed Methods Research for Translational Science	2
CTSC 5820	Introduction to Survey Research	1
CTSC 5900	Introduction to Health Services Research	1
Total Hours		5

Quantitative Research Methods (QUAN)

(5 credits required)

Code	Title	Hours
CTSC 5602	Introduction to Utilizing Statistical Software in Clinical and Translational Research	1
CTSC 5610	Statistics in CTR: Linear Regression Concepts, Interpretation, and Statistical Software	3
Select one of the following:		1

CTSC 5640	Statistics in Clinical and Translational Research: Logistic Regression with Statistical Software	
CTSC 5650	Advanced Statistics in CTS Research: Survival Analysis with Statistical Software	
Total Hours		5

This is a suggested sequence based on a summer term start. Individual course plans may vary depending on true start date, program, employment/ personal commitments, and research interests. Be sure to confirm you have met your requirements using your degree planning tool. Course offerings may vary slightly. Current course offerings are posted in the course catalog.

Code	Title	Hours
First Year - Summer Term		
CTSC 5300	Foundations of Epidemiology	1
CTSC 5600	Introduction to Statistics in Clinical and Translational Research	3

Code	Title	Hours
First Year - Fall Term		
CTSC 5010	Clinical Research Proposal Development	2
Electives		1

Code	Title	Hours
First Year - Winter Term		
MGS 6000	Responsible Conduct of Research	1
Electives		1-2

Code	Title	Hours
First Year - Spring Term		
Electives		1-2