The Graduate Training in Medical Science (GTMS) Certificate Program complements our existing doctoral programs in Biomedical Graduate Studies. The GTMS program was specifically designed for students who want to explore human biology and pursue research training at the interface of basic science and medicine. The GTMS program augments graduate training by offering courses that bridge basic and medical science and provides a foundation in the molecular basis of disease.

The GTMS program currently consists of 6 courses (4 required and 2 electives) and a 40 hour clinical clerkship experience. The curriculum requirements change from time to time to keep the program up to date and meeting the student needs.

### Code | Title | Course Units
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**Required Courses**
BIOM 502 | Molecular Basis of Disease | 1
BIOM 600 | Cell Biology | 1
CAMB/PHRM 532 | Human Physiology | 1
Select one of the following:
CAMB 510 | Immunology for CAMB | 1
IMUN 506 | Immune Mechanisms | 1
GCB 535 | Introduction to Bioinformatics | 1
GCB 536 | Fundamentals of Computational Biology | 1

**Bench to Bedside Electives**
Select two of the following:¹
BMB 518/ CAMB 615/ NGG 615 | Protein Conformation Diseases | 2
CAMB 512 | Cancer Biology and Genetics | 1
CAMB 530 | The Cell Cycle, Genome Integrity and Cancer | 1
CAMB 542 | Topics in Molecular Medicine | 1
CAMB 547 | Fundamental Virology | 1
CAMB 550 | Genetic Principles | 1
CAMB 608 | Regulation of Eukaryotic Gene Transcription | 1
CAMB 609 | Vaccines and Immune Therapeutics | 1
CAMB 610 | Molecular Basis of Gene Therapy and Genome Editing | 1
CAMB 617 | Emerging Infectious Diseases | 1
CAMB 630 | Topics in Human Genetics and Disease | 1
CAMB 697 | Biology of Stem Cells | 1
CAMB 701 | Tumor Microenvironment | 1
CAMB 703 | The ECM, adhesion receptor signaling, and translational biomechanics | 1
CAMB 704 | Stress Responses in Metabolism and Cancer | 1
CAMB 712 | Topics in Cancer Biology | 1

1. Any elective with clinical relevance may be a Bench to Bedside elective, subject to approval from the Program Directors. This list will be updated annually as new courses with clinical relevance may be offered and students are encouraged to suggest courses that they think will enrich their GTMS education.

Non-Course Requirements:
- Monthly seminar series
- 40-hour clinical clerkship

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2020 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.