For students who entered the MS program in Fall 2014 and later

**MS In Clinical Investigation Degree Requirements.** The MS degree requires students to formulate a research question, investigate a problem or issue, report the results, and discuss the findings and implications of a study. Courses are complemented by research culminating in defense of a master’s thesis.

It is recommended that by the end of the first semester of coursework, the student initiates a meeting with the major advisor to discuss research topics and project ideas. During subsequent semesters the student will have further opportunities to develop a research proposal. During the final year of coursework, the student will be conducting the research project and meeting frequently with the major advisor, who will monitor progress and provide feedback. Near the end of the final year of coursework, the student should have completed the project and begun to prepare the thesis manuscript.

**Learning Objectives for MS students.**
1. Determine when it is and is not appropriate to use a multidisciplinary patient-oriented research design to investigate a therapeutic problem.
2. Conceptualize and design multidisciplinary patient-oriented research protocols.
3. Execute multidisciplinary therapeutic intervention studies.
4. Interpret and report research findings using the expertise of collaborators in multiple disciplines.
5. Contribute to the leadership of programs that integrate clinical and translational science across multiple departments, schools and colleges, clinical and research institutes, and healthcare delivery organizations.
6. Translate research from the laboratory to the clinic through technological innovations, such as drug therapies, medical devices or biological materials (“bench to bedside”), as an active participant in a multidisciplinary clinical research team.

**MS Curriculum.** Depending on which ethics course is chosen, 34-35 credits are required to earn the MS. Below is a list of required courses and research requirements.

1. **A graduate entry level biostatistics course** (3 credits). Possible course selections include BMI 541 or BMI 699 (Fall) Introduction to Biostatistics, Stat 571 (Fall) Statistical Methods for Bioscience, or an equivalent course. The 1-credit BMI 699 is for students with instructor consent who have prior statistics (not biostatistics) coursework.
2. **Family Medicine 701: Perspectives in Multidisciplinary Clinical and Translational Research** (3 credits, Fall). An overview of clinical investigation and translational research
3. **Population Health Sciences 797: Introduction to Epidemiology** (3 credits, Fall)
4. **One lecture course in the Responsible (Ethical) Conduct of Research** (1-2 credits) selected from the following list or an equivalent course approved by the Executive Committee:
   a) **Med Hist 545 Ethical and Regulatory Issues in Clinical Investigation** (1 credit, Fall)
   b) **Pharmacy 800 Research Ethics, Scientific Integrity and the Responsible Conduct of Research** (2 credits, alternate Falls, 2014, 2016, etc.)
   c) **Vet Med/Surgical Science 812 Research Ethics and Career Development** (2 credits, Fall)
   d) **Ob/Gyn 955 Responsible Conduct of Research for Biomedical Students** (2 credits, Fall)
   e) **Nursing 802 Ethics and Responsible Conduct of Research** (1 credit, Spring)
   f) **Oncology 675 Appropriate Conduct of Science** (listed as “Advanced or Special Topics,” 1 credit, Spring)
5. **An intermediate statistics course** (3 credits). Course selection must meet the approval of the graduate program and be applicable to the student’s area of research.
6. **Biostatistics and Medical Informatics 542: Introduction to Clinical Trials I** (3 credits, Spring). Course emphasis is on clinical trials study design. BMI 541 (or equivalent) is a prerequisite.

7. **Biostatistics and Medical Informatics 544: Introduction to Clinical Trials II** (3 credits, Fall). Course emphasis is on clinical trial implementation and management, regulatory requirements, and data collection and management strategies. BMI 541 (or equivalent), BMI 542, and instructor consent are prerequisites.

8. **Nursing 705: Seminar in Interdisciplinary Clinical Research Evidence** (2 credits, Summer)

9. **Biostatistics and Medical Informatics 699: Patient-Oriented Research Presentation Skills Seminar** (1 credit, Fall)

10. **Research: Med (or other department) 990 (6 credits)**

**Coursework Considerations: Breadth and Depth.** Students will work with their major advisor to determine appropriate depth and breadth of study. **Students are encouraged to add breadth in coursework from areas of related science, as well as depth in their primary area of expertise, such as genetics, biomedical engineering, infectious disease, oncology, or another clinical medical field.**

**Thesis Requirements and Guidelines.** The MS thesis comprises a detailed report on the project approved by the student’s 3-member MS committee. **Masters students in the Graduate Program in Clinical Investigation are expected to complete an independent research project and write and defend their work with their 3-member advising committee to complete the MS thesis requirement.**