

CLINICAL INVESTIGATION, MS

The Master of Science in Clinical Investigation provides training in the methods and conduct of clinical investigation for future leaders in patient-oriented research. In addition to traditional instruction in biostatistics, epidemiology and study design, this program will provide students with a strong foundation in ethics and professionalism, while developing skills in critical thinking, communication of scientific findings, leadership, and management of research studies.

Program Competencies

- **Problem formulation:** Define focused research questions and testable hypotheses
- **Methodology:** Compare and select study designs for addressing clinical or translational research questions; identify a target population with consideration of socioeconomic, ethnic and cultural diversity; identify measures to be utilized while addressing reliability and validity, data quality, and cultural diversity
- **Data management and security:** Manage data using computer technology; define strategies to ensure data security and protection of privacy are maintained
- **Data analysis and interpretation:** Generate statistics that fit the study design chosen and answer research questions; identify risk/preventive factors that may contribute to outcomes and incorporate them into a research study; interpret computer output containing results of statistical procedures and graphics
- **Scientific communication:** Compile statistical output into tables and figures suitable for publication; prepare and communicate research findings to different groups of individuals through oral presentations and research papers; critically appraise the existing literature
- **Ethics and professionalism:** Describe the fundamental principles of the protection of human subjects and voluntary informed consent; describe the authority for and professional standards for the responsible conduct of research; explain the concept of good clinical practice; explain conflict of interest management in research
- **Teamwork and leadership:** Demonstrate group decision-making techniques; manage conflict; lead and manage team-based and individual projects; foster innovation and creativity

Requirements

The MS in Clinical Investigation Degree in Epidemiology requires 36 credits that includes:

| Course ID | Title | Credits |
|--|---|-----------|
| Epidemiology Course Requirements | | |
| SPHL 6020 | Foundations in Public Health | 3 |
| SPHL 6060 | Epidemiology for Public Health | 3 |
| EPID 6230 | Computer Packages for Epidemiology | 3 |
| EPID 6340 | Clinical and Translational Research Methods | 3 |
| EPID 6420 | Clinical Epidemiology | 3 |
| EPID 7120 | Epidemiologic Methods II | 3 |
| EPID 7130 | Observational Epidemiology | 3 |
| EPID 7170 | Clinical Trials: Design, Conduct & Interpretation | 3 |
| EPID 7310 | Meta-Analysis | 3 |
| INTD 6010 or EPID 7990 | Responsible Conduct of Research Master's Independent Studies | 0 |
| Biostatistics Course Requirements | | |
| SPHL 6050 | Biostatistics for Public Health | 3 |
| BIOS 6040 | Intermediate Biostatistics | 3 |
| Elective | | 3 |
| Thesis | | |
| EPID 9980 | MS Thesis Research | 0 |
| Total Credit Hours | | 36 |

Academic Standards

In addition to the SPHTM academic standards, students in the MS in Clinical Investigation and those taking advanced epidemiology courses must demonstrate the following standards:

- All students must complete and earn a "B" or better in the prerequisite foundational course, SPHL 6060 Epidemiology for Public Health (3 c.h.), before advancing to EPID 7120 Epidemiologic Methods II (3 c.h.) or other advanced epidemiology courses.

Thesis

Students must successfully complete a thesis (<https://tulane.app.box.com/v/thesis-guidelines/>). The thesis is based on a supervised research project demonstrating scholarship in the area of clinical research. The results will be presented orally and in writing and reviewed by two faculty members. The master's thesis must be completed within a year of completion of the required courses. It should be an academic investigation suitable for publishing.

Model Course Schedule

| Course ID | Title | Credits |
|---------------------------|---|-----------|
| Year 1, Summer | | |
| SPHL 6050 | Biostatistics for Public Health | 3 |
| SPHL 6060 | Epidemiology for Public Health | 3 |
| EPID 6230 | Computer Packages for Epidemiology | 3 |
| SPHL 6020 | Foundations in Public Health | 3 |
| Year 1, Fall | | |
| BIOS 6040 | Intermediate Biostatistics | 3 |
| EPID 7120 | Epidemiologic Methods II | 3 |
| EPID 6340 | Clinical and Translational Research Methods | 3 |
| EPID 7310 | Meta-Analysis | 3 |
| EPID 7990 | Master's Independent Studies | 1-3 |
| Year 1, Spring | | |
| EPID 6420 | Clinical Epidemiology | 3 |
| EPID 7130 | Observational Epidemiology | 3 |
| EPID 7170 | Clinical Trials: Design, Conduct & Interpretation | 3 |
| Elective | | |
| EPID 9980 | MS Thesis Research | 0 |
| Total Credit Hours | | 36 |