# M.S. IN CLINICAL AND TRANSLATIONAL INVESTIGATION

## Curriculum Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTI 605</td>
<td>Introduction to Team Science and Entrepreneurship</td>
<td>2</td>
</tr>
<tr>
<td>CTI 602</td>
<td>Writing for Translational and Clinical Science</td>
<td>2</td>
</tr>
<tr>
<td>CTI 603</td>
<td>Research Ethics</td>
<td>3</td>
</tr>
<tr>
<td>CTI 805</td>
<td>Capstone Project / Master's Thesis</td>
<td>6</td>
</tr>
<tr>
<td>EPH 604</td>
<td>Clinical Trials</td>
<td>3</td>
</tr>
<tr>
<td>EPH 621</td>
<td>Fundamentals of Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>HGG 630</td>
<td>Variation and Disease</td>
<td>2</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioinformatics (One of the Following)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTE 685</td>
<td>Topics in Business Technology</td>
<td></td>
</tr>
<tr>
<td>EPH 751</td>
<td>Survival Analysis in Clinical Trials</td>
<td></td>
</tr>
<tr>
<td>EPH 651</td>
<td>Research Methods</td>
<td></td>
</tr>
<tr>
<td>HGG 660</td>
<td>Bioinformatics Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>Biostatistics (One of the Following)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPH 601</td>
<td>Medical Biostatistics I</td>
<td></td>
</tr>
<tr>
<td>EPH 602</td>
<td>Biostatistics II</td>
<td></td>
</tr>
<tr>
<td>BST 625</td>
<td>Survey of Statistical Computing</td>
<td></td>
</tr>
<tr>
<td>BST 665</td>
<td>Design and Analysis of Clinical Trials</td>
<td></td>
</tr>
<tr>
<td>EPH 703</td>
<td>Advanced Statistical Methods I</td>
<td></td>
</tr>
<tr>
<td>Cultural Diversity and Community Engagement (One of the Following)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPH 647</td>
<td>Community Based Participatory Research</td>
<td></td>
</tr>
<tr>
<td>EPH 617</td>
<td>Disease Prevention and Health Promotion</td>
<td></td>
</tr>
<tr>
<td>EPH 612</td>
<td>Global Health</td>
<td></td>
</tr>
<tr>
<td>EPH 632</td>
<td>U.S. Health Systems</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

## Program Plan for Part-time Professional Students

### Year One

#### Fall

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTI 605</td>
<td>Introduction to Team Science and Entrepreneurship</td>
<td>2</td>
</tr>
<tr>
<td>EPH 621</td>
<td>Fundamentals of Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>EPH 601</td>
<td>Medical Biostatistics I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>9</td>
</tr>
</tbody>
</table>

#### Spring

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTI 602</td>
<td>Writing for Translational and Clinical Science</td>
<td>2</td>
</tr>
<tr>
<td>HGG 630</td>
<td>Variation and Disease</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Summer I

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPH 604</td>
<td>Clinical Trials</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>3</td>
</tr>
</tbody>
</table>

### Year Two

#### Fall

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTI 805</td>
<td>Capstone Project / Master's Thesis</td>
<td>6</td>
</tr>
<tr>
<td>EPH 647</td>
<td>Community Based Participatory Research</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>9</td>
</tr>
<tr>
<td>Year One</td>
<td>Credit Hours</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTI 605</td>
<td>Introduction to Team Science and Entrepreneurship 2</td>
<td></td>
</tr>
<tr>
<td>EPH 601</td>
<td>Medical Biostatistics I 4</td>
<td></td>
</tr>
<tr>
<td>EPH 621</td>
<td>Fundamentals of Epidemiology 3</td>
<td></td>
</tr>
<tr>
<td>EPH 617</td>
<td>Disease Prevention and Health Promotion 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours 12</td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTI 602</td>
<td>Writing for Translational and Clinical Science 2</td>
<td></td>
</tr>
<tr>
<td>CTI 805</td>
<td>Capstone Project / Master’s Thesis 6</td>
<td></td>
</tr>
<tr>
<td>HGG 630</td>
<td>Variation and Disease 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours 10</td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPH 604</td>
<td>Clinical Trials 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours 3</td>
<td></td>
</tr>
<tr>
<td>Year Two</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTI 603</td>
<td>Research Ethics 3</td>
<td></td>
</tr>
<tr>
<td>EPH 751</td>
<td>Survival Analysis in Clinical Trials 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours 31</td>
<td></td>
</tr>
</tbody>
</table>

**Mission**

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 core competencies necessary to review, design, and conduct high-quality, multidisciplinary clinical and translational research independently.

**Goals**

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.

**Student Learning Outcomes**

- 100 % of students who complete CTI 605 Introduction to Clinical and Translational Research’ should demonstrate the following competencies with at least intermediate proficiency:
  - Summarize evidence from the literature on a translational research problem;
  - Critique clinical and translational research questions using data-based literature searches;
  - Assess the strengths and weaknesses of possible study designs for a given clinical or translational research question; and
  - Describe future implications of published studies on team science and translational science.
- Students who complete CTI 602 Writing for Clinical and Translational Research’ should demonstrate the following competencies:
  - Write introduction to a translational research manuscript or a grant specific aims page;
  - Understand the grant review process from the perspective of an applicant and a reviewer; and
  - Understand the key components of how to put together an NIH-style grant.
• The overall goal of the Capstone Project is to provide students with an opportunity for hands-on exposure to clinical/translational research. Students who complete the CTI 805 ‘Capstone Project/Masters Thesis’ of the MSCTI Program will demonstrate the following competencies:
  • Ability to plan a research activity;
  • Ability to prepare, draft, finalize, and submit all sections of a grant application;
  • Knowledge and motivation to carry out the planned research activity;
  • Ability to analyze the results of the research;
  • Ability to complete a written description of the work in the form of a well-written, properly organized thesis;
  • Ability to complete a thesis with potential for presentation at and/or participation in professional meetings and/or publication in scholarly journals; and
  • Ability to identify and work with a mentor on their project.