

**Master of Science in Clinical & Translational Research**  
**Principal Investigator Track**  
*Effective Fall 2019*

Course Number	Course Title	Credits	Required or Elective	Semester Offered
<b>Core Courses - 9 credit hours</b>				
BE-7022	Introduction to Biostatistics	3	Required	Fall Spring/Summer*
BE-7076	Introduction to Epidemiology	2	Required	Fall/Spring Summer*
BE-9075	Design & Management of Field Studies	3	Required	Spring
BE-9066	Clinical Research Scholars Seminar	1	Required	Spring
<b>Research Ethics (choose one) - 1-2 credit hours</b>			Required	
BE-7067	Scientific Integrity	1-2		Summer*
GNTD-7003	Ethics in Research	1		Spring
<b>Statistical Programming (choose one) - 3 credit hours</b>			Required	
BE-8083	Data Analysis with R & SAS	3		Spring
BE-7024	Computational Statistics (R)	3		Spring
PHDD-8060	Statistical Principles in Clinical Research (JMP)	3		Fall
<b>Regression Analysis (choose one) - 3 credit hours</b>			Required	
BE-7023	Advanced Biostatistics	3		Fall
BE-7088	Regression Analysis (SAS)	3		Spring
EDST-7011	Statistical Data Analysis II (SPSS or R)	3		Fall/Spring/Summer*
<b>Advanced Methods (choose one) - 2-3 credit hours</b>			Required	
BE-8069	Study Design & Analysis	2		Fall*
BE-7068C	Decision-Analysis & Cost-Effectiveness Analysis	3		Spring
BE-9061C	Meta-Analysis	3		Fall 2020
BE-8062	Introduction to Medical Informatics	3		Fall
BE-7025	Comparative Effectiveness Research/Patient-Centered Outcomes Research	2		Fall
BE-7066	Principles of Clinical Trials	3		Fall
<i>or any advanced methods course offered under the BE course code</i>				
<b>Culmination - 2 credit hours</b>			Required	
ENV-7091	Master's Thesis Research	2		Fall/Spring/Summer
<b>Electives - 8-10 credit hours</b>				
<i>Students may fulfil the remaining elective course credit hours by completing any BE listed course, additional elective courses from the approved list, and/or a maximum of 6 credit hours of non-thesis research (ENV-8091). Elective courses outside of the department need to be approved by the Program Director.</i>				
<b>TOTAL CREDIT HOURS</b>		<b>30</b>		
<i>*course is offered online</i>				
<ul style="list-style-type: none"> <li>• 3.0 GPA (B average) or higher required for graduation.</li> <li>• "I" (Incomplete) or "NG" (Not Graded) grades must be removed from academic record prior to applying for graduation.</li> <li>• Students must take a minimum of one graduate credit that contributes to degree requirements per academic year (fall-summer) to maintain active status.</li> <li>• All requirements for the master's degree must be completed within five consecutive academic years of the date of matriculation into the program.</li> </ul>				

**Master of Science in Clinical & Translational Research  
Principal Investigator Track Approved Electives  
Effective Fall 2019**

\*Any BE listed course, or any course listed on the curriculum but not used to fulfill one of the curriculum requirements can be used to count towards elective credit hours. The Table below lists other approved electives outside of the department.

<b>Course Number</b>	<b>Course Title</b>	<b>Topics/Areas of Focus</b>	<b>Credits</b>
CB 8080	Biology of Cancer	Molecular Epidemiology	3
CS 6033	Artificial Intelligence	Clinical Research Informatics	3
CS 6052	Intelligent Data Analysis (odd years)	Clinical Research Informatics	3
CS 7099	Introduction to Bioinformatics	Translational Research Informatics	3
DB 9087	Disease & Development	Translational Research	2
GC 7020	Human Genetics	Molecular Epidemiology	3
GNTD 7001	Molecular & Cellular Biology	Molecular Epidemiology	3
GNTD 8001C	Introduction to Functional Genomics	Translational Research Informatics	3
IS 7030	Data Modeling (7 week term)	Translational Research Informatics; Clinical Research Informatics	2
IS 7032	Database Design (7 week term)	Translational Research Informatics; Clinical Research Informatics	2
IS 7034	Business Intelligence (Prerequisite: IS 7032)	Clinical Research Informatics	2
IS 7036	Advanced Business Intelligence (Prerequisite 7034)	Clinical Research Informatics	2
PHDD 8010	Global Regulatory & Development Strategies of Drugs & Medical Devices	Clinical Trials	3
PHDD 8030	Pre-Clinical/Non-Clinical Studies for IND	Translational Research	3
PHDD 8040	Development & Manufacturing of Drug Products & Medical Devices	Clinical Trials	3
PHDD 8050	Phase I/II Clinical Trials Research & Design	Clinical Trials	3
PHDD 8060	Statistical Principles in Clinical Research	Translational Research	3
PHDD 8070	Phase III/IV Clinical Trials & Research	Clinical Trials	3