



## CURRICULUM

### *Program Requirements*

The Professional Science Master of Biomedical Sciences degree is a rigorous one-year academic program. This master's degree requires 45-credit hours of course work and successful completion of the written and oral defense of a capstone project. The curriculum includes 25 credit hours of required core courses and 20 credit hours of program-focused elective courses. Each individual student's curriculum must contain at least 50% STEM content. The program director will meet individually with students to create and approve an individual plan of study.

### **Required Courses**

#### Fall Quarter (14-16 credits total)

BIOL 4085 Accelerated Biostatistics	(2 credits)
BIOL 4212 Advanced Molecular Biology	(3 credits)
BIOL 4310 Foundations in Literature	(2 credits)
BIOL 4870 Medical Ethics	(4 credits)
BIOL 4991 Independent Research- Capstone	(1 credit)
Elective course(s)	(2-4 credit hours)

#### Winter Interterm

Capstone Project Proposal Development

#### Winter (14-16 credits total)

BIOL 4211 Advanced Cell Biology	(3 credits)
BIOL 4231 Responsible Conduct in Research	(1 credit)
BIOL 4310 Foundations in Literature	(2 credits)
BIOL 4991 Independent Research- Capstone	(2 credits)
Elective course(s)	(6-8 credit hours)

#### Spring (14-16 credits total)

BIOL Leadership in the Sciences	(1 credit)
BIOL 4880 Capstone in Biomedical Sciences	(4 credits)
Elective course(s)	(9-11 credit hours)

Total of 45 credit hours and successful completion of the capstone project including a written and public oral presentation of the project.

#### Additional suggested elective courses:

Electives can be chosen from the approved list of existing elective courses (see next page) in consultation with the Program Director. Additional upper level (3000- or 4000-level) elective courses will be considered with approval of the Program Director.

## **Elective Courses**

### ***Natural Sciences***

BIOL 3100 Histology (4 credits)  
BIOL 3120 General Microbiology (4 credits)  
BIOL 3145 Cellular and Molecular Biology of Cancer (4 credits)  
BIOL 3160 Biophysics: Ion channels & Disease (4 credits)  
BIOL 3260 Nutrition (3 credits)  
BIOL 3250 Human Physiology (5 credits)  
BIOL 3610 Developmental Biology (4 credits)  
BIOL 3630 Cell Biology of Development (4 credits)  
BIOL 3640 Introductory Neurobiology (4 credits)  
BIOL 3641 Systems Neuroscience (4 credits)  
BIOL 3642 Neuropharmacology (4 credits)  
BIOL 3644 Neuromuscular Pathophysiology (4 credits)  
BIOL 3650 Endocrinology (4 credits)  
BIOL 3670 Molecular Immunology (4 credits)  
BIOL 3704 Science and the Law (2 credits)  
BIOL 3800 Human Molecular Biology (4 credits)  
BIOL 3910 Viruses and Infectious Human Diseases (4 credits)  
BIOL 3920 Forensic Pathology (2 credits)  
BIOL 4213 Advanced Cell Signaling (3 credits)  
CHEM 3130 Chemical Systems III (Biochemistry) (3 credits)  
CHEM 3811 Biochemistry/ Proteins (3 credits)  
CHEM 3812 Biochemistry/ Membranes and Metabolism (3 credits)  
CHEM 3813 Biochemistry/ Nucleic Acids (3 credits)  
GEOG 3470 GIS & Environmental Health Geography (3 credits)

### ***Engineering***

ENBI 4500 Biofluids (4 credits)  
ENBI 4510 Biomechanics (4 credits)  
ENBI 4520 Introduction to Cardiovascular Engineering (4 credits)  
ENBI 4800 Advanced Topics: Computational Biomechanics (4 credits)

### ***Global Health***

INTS 4056 - Information Management in Human Crises (5 credits)  
INTS 4362 Gender and Health (5 credits)  
INTS 4367 Global Health Affairs: Theory & Practice (5 credits)  
INTS 4368 HIV/AIDS in International Affairs (5 credits)  
INTS 4377 Reproductive Health (5 credits)  
INTS 4423 Introduction to Epidemiology (5 credits)  
INTS 4435 Health and Development (5 credits)  
INTS 4465 Population, Society and Development (5 credits)  
INTS 4483 Practical Applications in Global Health (5 credits)  
INTS 4492 Health and Humanitarian Aid (5 credits)  
INTS 4516 Major Diseases in Global Health: From Pathophysiology to Action (5 credits)  
INTS 4576 Seminar in Community-Based Research (5 credits)

***Social Sciences***

COMN 4020 Relational Communication (5 credits)  
COMN 4110 Theories of Interpersonal Communication (5 credits)  
COMN 4701 Dark Side of Relationships  
COMN 4701 Work/Family Balance  
COMN 4701 Communication and Privacy  
COMN 4701 Communication Ethics  
PSYC 4002 Proseminar in Human Memory and Cognition (5 credits)  
PSYC 4011 Proseminar in Emotion (5 credits)  
PSYC 4021 Proseminar in Social Psychology (5 credits)  
PSYC 4031 Developmental Proseminar: Cognition & Perception (5 credits)  
PSYC 4033 Developmental Proseminar: Biological (5 credits)  
PSYC 4085 Stress & Health (5 credits)  
PSYC 4254 Intro to Neural Network Models (5 credits)  
PSYC 4255 Imaging the Mind (5 credits)  
PSYC 4256 Seminar: Cognitive Neuroscience (5 credits)  
PSYC 4258 Social Neuroscience (5 credits)  
PSYC 4262 Affective Neuroscience (5 credits)  
PSYC 4511 Proseminar in Psychopathology (5 credits)  
PSYC 4525 Proseminar in Developmental Neuropsychology (5 credits)  
PSYC 4526 Proseminar in Cognitive Neuroscience (5 credits)

***Business***

ACTG 4610 Financial Accounting and Reporting (4 credits)  
FIN 4630 Managerial Finance (4 credits)  
MGMT 4620 Organizational Dynamics (4 credits)  
MGMT 4630 Strategic Human Resources Management (4 credits)  
MKTG 4100 Marketing Concepts (4 credits)  
INFO 4100 Business Intelligence, Data Warehousing, Corporate Decision Making and Leadership (4 credits)  
INFO 4280 Project Management (4 credits)

***Public Policy***

PPOL 4400 Analytical and Critical Skills (4 credits)  
PPOL 4700 Public Management and Budgeting (4 credits)  
PPOL 4600 Regulatory Policy and Process (4 credits)