

## **MCB Concentration Policies and Procedures**

### **Requirements for the Concentration in Molecular and Cellular Biology (MCB)**

#### **Program Learning Outcome (PLO) of the Concentration in MCB**

Scholarship, teaching and research ability in one or more areas of Molecular and Cell Biology broadly defined, including biochemistry, molecular biology, cell biology, developmental biology, immunology, microbiology, neurobiology, and/or physiology.

#### **Core Requirements for Degree with Concentration in MCB**

- a. One graduate-level Quantitative Biology (QB) course (3 – 5 units)
- b. One graduate-level Systems Biology (SB) course (3 – 5 units)
- c. One graduate-level Molecular and Cell Biology (MCB) course (3 – 5 units).
- d. One graduate level QSB course of 3 – 5 units, excluding QSB 291 and QSB 295.

#### **Additional Requirements for Degree with Concentration in MCB**

- e. QSB 200 must be taken.
- f. No course may fulfill more than one degree requirement.
- g. The dissertation must fall within the areas of Molecular and Cellular Biology broadly defined, as determined by the student's dissertation committee at the time of the doctoral dissertation defense.

#### **Criterion for Courses that fulfill the MCB Requirement**

Courses that fulfill the MCB requirement must provide substantial exposure to primary and secondary scientific literature in one or more areas of molecular and cell biology broadly defined, including biochemistry, molecular biology, cell biology, developmental biology, immunology, microbiology, neurobiology, and/or physiology.

#### **List of Courses that fulfill the MCB Requirement**

This list is maintained and updated by QSB Educational Policy Committee.

- QSB 200 – Molecular Cell Biology (3 Units)
- QSB 202 – Graduate Level Biochemistry (3)
- QSB 207 – Physical Biochemistry (3)
- QSB 211 – Advanced Neurobiology (3)
- QSB 212 – Advanced Signal Transduction and Growth Control (3)
- QSB 215 – Principles of Biological Techniques (3)
- QSB 220 – Cellular Microbiology (3)
- QSB 223 – Human Parasitology (4)
- QSB 227 – Virology (3)
- QSB 250 – Embryos, Genes and Development (3)
- QSB 251 – Advanced Molecular Immunology (4)
- QSB 252 – Cancer Genetics and Tumor Biology (3)
- QSB 253 – Evolution & Development (3)
- QSB 261 – Advanced Physiology (3)
- QSB 271 – Adv. Neurobiology: Brain Dysfunction & Neurodeg. Diseases (3)
- QSB 290 – Topics in Systems Biology (3)
- QSB 297 – Systems Biology (3)