



### Areas of Emphasis in the MCB Major

#### *Suggested Advanced Coursework*

After completing the MCB core courses, students may choose to continue taking courses that will provide them with a broad overview of different areas within the school or they may choose to specialize in one or more Areas of Emphasis. For a broad overview students should take 15 hours of "Advanced Core Courses", including at least one "Advanced Core Lab". For those wishing to specialize, 15 hours of advanced courses and labs should be chosen based on their Areas of Emphasis. The "Advanced Core Course" within each Area of Emphasis should be taken prior to the "Other Advanced Courses". Note: Areas of Emphasis will not show up on your UIUC transcript.

*This Document was Last Updated on March 5, 2009*

Area of Emphasis	Advanced Core Courses	Advanced Lab Courses	Other Advanced Courses	
<b>Biochemistry</b>	MCB 406	BIOC 455	MCB 400 MCB 408 MCB 424	MCB 446 MCB 480 BIOC 440B/CHEM 440B
<b>Cells and Tissues</b>	MCB 400	MCB 315	MCB 406 MCB 408	MCB 480 MCB 484
<b>Developmental Biology</b>	MCB 400 MCB 410	MCB 315	MCB 334 MCB 405 MCB 406 MCB 412	MCB 414 MCB 460 MCB 481 MCB 484
<b>Infection and Immunity</b>	MCB 300 MCB 400 MCB 408	MCB 315 MCB 428	MCB 421 MCB 426 MCB 429 MCB 431	MCB 433 MCB 442 MCB 480
<b>Microbial Biology</b>	MCB 300	MCB 301 MCB 428	MCB 421 MCB 424 MCB 426 MCB 429 MCB 430	MCB 431 MCB 433 MCB 434 MCB 435
<b>Genetics</b>	MCB 300 MCB 316	MCB 301	MCB 405 MCB 406	MCB 421 MCB 484
<b>Neurobiology</b>	MCB 401 MCB 412	MCB 403	MCB 414/NEUR 404 MCB 416/NEUR 426 MCB 419/NEUR 419 MCB 481 NEUR 405/PSYC 404	NEUR 411/PSYC 411 NEUR 413/PSYC 413 NEUR 414/PSYC 414 NEUR 451/PSYC 451
<b>Physiology</b>	MCB 401 MCB 402	MCB 403 MCB 404	MCB 413 MCB 414/NEUR 404 MCB 416/NEUR 426	MCB 419/NEUR 419 MCB 481

## **Biochemistry**

### Advanced Core Course

MCB 406 Gene Expression

### Advanced Lab Course

BIOC 455 Techniques in Biochemistry and Biotechnology

### Other Advanced Courses

MCB 400 Cell Structure and Function

MCB 408 Immunology

MCB 424 Microbial Biochemistry

MCB 446 Physical Biochemistry

MCB 480 Eukaryotic Cell Signaling

BIOC 440B/CHEM 440B Physical Chemistry Principles (Biological Perspective)

## **Cells and Tissues**

### Advanced Core Course

MCB 400 Cell Structure and Function

### Advanced Lab Course

MCB 315 Cells and Tissues Laboratory

### Other Advanced Courses

MCB 406 Gene Expression

MCB 408 Immunology

MCB 480 Eukaryotic Cell Signaling

MCB 484 Model Organisms and Epigenetics

## **Developmental Biology**

### Advanced Core Courses

MCB 400 Cell Structure and Function

MCB 410 Developmental Biology

### Advanced Lab Courses

MCB 315 Cells and Tissues Laboratory

### Other Advanced Courses

MCB 334 Functional Human Anatomy

MCB 405 Genetics and Genomics

MCB 406 Gene Expression

MCB 412 Cellular Molecular Neurobiology

MCB 414 Introduction to Neurobiology

MCB 460 Regeneration and Medicine

MCB 481 Developmental Neurobiology

MCB 484 Model Organisms and Epigenetics

## **Infection and Immunity**

### Advanced Core Courses

MCB 300 Microbiology  
MCB 400 Cell Structure and Function  
MCB 408 Immunology

### Advanced Lab Courses

MCB 315 Cells and Tissues Laboratory  
MCB 428 Bacterial Pathogens Laboratory

### Other Advanced Courses

MCB 421 Microbial Genetics  
MCB 426 Bacterial Pathogenesis  
MCB 429 Cellular Microbiology and Disease  
MCB 431 Microbial Physiology  
MCB 433 Viral Pathogenesis  
MCB 442 Comparative Immunobiology  
MCB 480 Eukaryotic Cell Signaling

## **Microbial Biology**

### Advanced Core Course

MCB 300 Microbiology

### Advanced Lab Courses

MCB 301 Experimental Microbiology  
MCB 428 Bacterial Pathogens Laboratory

### Other Advanced Courses

MCB 421 Microbial Genetics  
MCB 424 Microbial Biochemistry  
MCB 426 Bacterial Pathogenesis  
MCB 429 Cellular Microbiology and Disease  
MCB 430 Molecular Microbiology  
MCB 431 Microbial Physiology  
MCB 433 Viral Pathogenesis  
MCB 434 Food and Industrial Microbiology  
MCB 435 Microbial Ecology & Evolution

## **Genetics**

### Advanced Core Course

MCB 300 Microbiology  
MCB 316 Introduction to Eukaryotic Molecular Genetics

### Advanced Lab Courses

MCB 301 Experimental Microbiology

### Other Advanced Courses

MCB 405 Genetics and Genomics  
MCB 406 Gene Expression  
MCB 421 Microbial Genetics  
MCB 484 Model Organisms and Epigenetics

## **Neurobiology**

### Advanced Core Courses

MCB 401 Cell and Membrane Physiology  
MCB 412 Cellular Molecular Neurobiology

### Advanced Lab Course

MCB 403 Cell and Membrane Physiology Lab

### Other Advanced Courses

MCB 414/NEUR 404 Introduction to Neurobiology  
MCB 416/NEUR 426 Integrative Neurophysiology  
MCB 419/NEUR 419 Brain, Behavior, and Information Processing  
MCB 481 Developmental Neurobiology  
NEUR 405/PSYC 404 Cognitive Neuroscience  
NEUR 411/PSYC 411 Bio Psych Lab  
NEUR 413/PSYC 413 Psychopharmacology  
NEUR 414/PSYC 414 Brain, Learning, and Memory  
NEUR 451/PSYC 451 Neurobio of Aging

## **Physiology**

### Advanced Core Courses

MCB 401 Cell and Membrane Physiology  
MCB 402 Systems & Integrative Physiology

### Advanced Lab Courses

MCB 403 Cell and Membrane Physiology Lab  
MCB 404 Systems & Integrative Physiology Lab

### Other Advanced Courses

MCB 413 Endocrinology  
MCB 414/NEUR 404 Introduction to Neurobiology  
MCB 416/NEUR 426 Integrative Neurophysiology  
MCB 419/NEUR 419 Brain, Behavior, and Information Processing  
MCB 481 Developmental Neurobiology

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