

# BACHELOR OF SCIENCE DEGREE IN GENETICS AND GENOMICS

NAME \_\_\_\_\_

SID # \_\_\_\_\_

CATALOG YEAR 2026-2027

EXPECTED GRADUATION DATE \_\_\_\_\_

## GENERAL EDUCATION REQUIREMENTS (36-38 Units)

### English Composition

WRIT 101 or 107 ..... 3 \_\_\_\_\_

WRIT 102 or 108 ..... 3 \_\_\_\_\_

Or

WRIT 109H..... 3 \_\_\_\_\_

### Foundation Mathematics

MATH 122A/B OR 125 OR MATH 119A\* (F, S, SS) ..... 3-5 \_\_\_\_\_

\* MATH 119A is not a pre-requisite for MATH 129

### Second Language

2<sup>nd</sup> semester proficiency by credit or exam required ..... \_\_\_\_\_

### Intro. to General Education

UNIV 101 ..... 1 \_\_\_\_\_

### Exploring Perspectives (4 courses, 12 units)

Artist ..... 3 \_\_\_\_\_

Humanist ..... 3 \_\_\_\_\_

Social Scientist ..... 3 \_\_\_\_\_

Natural Scientist .... Requirement satisfied by MCB foundations

### Building Connections (2 courses, 6 units)

Course One ..... 3 \_\_\_\_\_

Course Two..... 3 \_\_\_\_\_

### Civic Institutions (1 course, 3 units)

Course One ..... 3 \_\_\_\_\_

### General Education Capstone

UNIV 301 ..... 1 \_\_\_\_\_

## FOUNDATION COURSES (27 UNITS)

### Chemistry (General & Organic Chemistry, with labs)

CHEM 151 OR 161/163 OR 141/143 ..... 4 \_\_\_\_\_

CHEM 152 OR 162/164 OR 142/144 ..... 4 \_\_\_\_\_

CHEM 241A & 243A OR 242A & 244A\* ..... 3 \_\_\_\_\_ 1 \_\_\_\_\_

CHEM 241B & 243B OR 242B & 244B\* ..... 3 \_\_\_\_\_ 1 \_\_\_\_\_

\* Calculated into major GPA

### Mathematics (Calculus II or Biostatistics)

MATH 129 OR MATH 263 OR BIOS 376 (F, S, SS) ..... 3 \_\_\_\_\_

### Physics (Introductory Physics)

PHYS 110 OR 141 OR 161H (F, S, SS)..... 3 \_\_\_\_\_ 1 \_\_\_\_\_ or 4 \_\_\_\_\_

PHYS 111 OR 241 OR 261H (F, S, SS)..... 3 \_\_\_\_\_ 1 \_\_\_\_\_ or 4 \_\_\_\_\_

## GENETICS & GENOMICS MAJOR (44 Unit Minimum)

### Core Requirements (26 units)

MCB 195B or 295E – MCB Colloquia (F, S) ..... 1 \_\_\_\_\_

MCB 181R - Introductory Biology I (F, S)..... 3 \_\_\_\_\_

MCB 181L - Introductory Biology I Lab (F, S) ..... 1 \_\_\_\_\_

ECOL 182R - Introductory Biology II (F, S) ..... 3 \_\_\_\_\_

ECOL 182L - Introductory Biology II Lab (F, S)..... 1 \_\_\_\_\_

MCB 284 – App. of Cellular & Molecular Biology (S)..... 3 \_\_\_\_\_

ECOL 323 – Human Genetics and Evolution (F)\* ..... 3 \_\_\_\_\_

MCB 304 - Molecular Genetics (F)\* ..... 4 \_\_\_\_\_

MCB 305 - Cell & Developmental Biology (S)\* ..... 4 \_\_\_\_\_

ECOL 326 - Genomics (F, SS)\* ..... 3 \_\_\_\_\_

### Writing Emphasis Requirement (3 units):

MCB 404 Bioethics (F, S, SS) ..... 3 \_\_\_\_\_

MCB 498H Honors Thesis (F, S) ..... 3 \_\_\_\_\_

### Choose one Lab/Research Requirement (3 units):

MCB 392/492 Directed Research (F, S, SS) ..... 3 \_\_\_\_\_

MCB 399/499 Independent Study (F, S, SS)..... 3 \_\_\_\_\_

MCB 399H/499H Honors Independent Study (F, S, SS) ..... 3 \_\_\_\_\_

MCB 498 Senior Capstone (F, S) ..... 3 \_\_\_\_\_

MCB 498H Honors Thesis (F, S) ..... 3 \_\_\_\_\_

MCB 397D Molecular Biology of Plants CURE (S) ..... 3 \_\_\_\_\_

MCB 422 Problem Solving with Genetic Tools (F, SS)..... 3 \_\_\_\_\_

MCB 473 Recombinant DNA (S)..... 3 \_\_\_\_\_

## UPPER DIVISION ELECTIVE COURSES (12 Unit Minimum)

### Choose 4-6 of the following courses (12 units):

PLS 312 Animal and Plant Genetics (S) ..... 4 \_\_\_\_\_

PLS 340 Introduction to Biotechnology (F, S)..... 3 \_\_\_\_\_

PLS 340L Biotechnology Lab (F, S)..... 1 \_\_\_\_\_

ECOL 346 Bioinformatics (S)..... 4 \_\_\_\_\_

BIOC 384 Foundations in Biochemistry (F, S, W, SS) ..... 3 \_\_\_\_\_

BIOC 385 Metabolic Biochemistry (F, S, W, SS) ..... 3 \_\_\_\_\_

MCB 416A Bioinformatics & Functional Genomics (S)..... 3 \_\_\_\_\_

MCB 480 Introduction to Systems Biology (F) ..... 3 \_\_\_\_\_

MCB 482 Modeling Human Disease (S)..... 3 \_\_\_\_\_

MCB 442 Human Genetics: Sex, Crime and Disease (S)..... 3 \_\_\_\_\_

MCB 447 Big Data in Biology and Medicine (F)..... 3 \_\_\_\_\_

ECOL 426 Population Genetics (S) ..... 3 \_\_\_\_\_

PLS 428R Microbial Genetics (F, S) ..... 3 \_\_\_\_\_

PLS 428L Microbial Genetics Lab (S)..... 2 \_\_\_\_\_

WFSC 430 Conservation Genetics (S, SS)..... 3 \_\_\_\_\_

PLS 449A Plant Genetics & Genomics (S)..... 3 \_\_\_\_\_

NROS 430 Neurogenetics (S)..... 3 \_\_\_\_\_

### UNIVERSITY REQUIREMENTS:

120 total units  42 upper division units

2.000+ cum GPA  2.000+ major GPA

