

BACHELOR OF SCIENCE DEGREE IN GENETICS AND GENOMICS

NAME _____

SID # _____

CATALOG YEAR 2026-2027

EXPECTED GRADUATION DATE _____

GENERAL EDUCATION REQUIREMENTS (32 unit minimum)

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

2nd 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 141/1434 _____

CHEM 152 OR 162/164 OR 142/1444 _____

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 (S)* 3 _____

MCB 304 - Molecular Genetics (F)* 4 _____

MCB 305 - Cell & Developmental Biology (S)* 4 _____

ECOL 326 - Genomics (F, SS)* 3 _____

Bioethics Requirement (3 units):

MCB 404 Bioethics (F, S, SS) 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 ☐