

BACHELOR OF SCIENCE DEGREE IN MOLECULAR AND CELLULAR BIOLOGY

Genetics and Human Health Sub-Plan

NAME _____

SID # _____

CATALOG YEAR 2024-2025

EXPECTED GRADUATION DATE _____

GENERAL EDUCATION REQUIREMENTS (36-38 Units)

English Composition

ENGL 101 or 107.....3 _____

ENGL 102 or 108.....3 _____

Or

ENGL 109H3 _____

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)

Artist3 _____

Humanist.....3 _____

Social Scientist.....3 _____

Natural ScientistRequirement satisfied by MCB foundations

Building Connections (3 courses, 9 units)

Course One.....3 _____

Course Two3 _____

Course Three3 _____

General Education Capstone

UNIV 301 1 _____

MCB FOUNDATION COURSES (27 UNITS)

Chemistry (General & Organic Chemistry, with labs)

CHEM 141/143 OR 151 OR 161/163 OR 181.....4 _____

CHEM 142/144 OR 152 OR 162/164 OR 182.....4 _____

CHEM 241A & 243A OR 246A & 247A.....3 _____ 1 _____

CHEM 241B & 243B OR 246B & 247B3 _____ 1 _____

* Calculated into major GPA

Mathematics (Calculus II or Biostatistics)

MATH 129 OR MATH 263 (F, S, SS).....3 _____

Physics (Introductory Physics)

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

PHYS 103/182 OR 241 OR 261H (F, S, SS)3 _____ 1 _____ or 4 _____

MCB MAJOR (39 Unit Minimum)

Core Requirements (21 units)

MCB 195 or 295 – 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 304 - Molecular Genetics (F)*..... 4 _____

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

MCB 301 - Molecular Basis of Life (F)* 4 _____

*MCB 304, 305, & 301 should be taken in sequence..

Genetics and Human Health Sub-Plan

Upper Division Elective Courses (18 unit minimum):

Choose three of the following courses (9 units):

MCB 325 Biology of Cancer (F)3 _____

MCB 442 Sex, Crime and Disease (S)3 _____

MCB 482 Modeling Human Disease (F)3 _____

BIOC 385 Metabolic Biochemistry (F, S, SS)**3 _____

**The combination of BIOC 462A and BIOC 462B is an approved option.

Choose one Lab/Research/Internship 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 422 Problem Solving with Genetic Tools (F, SS)..... 3 _____

MCB 473 Recombinant DNA (S) 3 _____

MCB 493 Internship Experience (F, S, SS) 3 _____

MCB 498 Senior Capstone (F, S) 3 _____

MCB 498H Honors Thesis (F, S) 3 _____

Choose additional required elective courses (6 units):

Choose upper division electives to meet requirement - see back of checklist for elective options.

Writing Emphasis Elective 3 _____

Upper Division MCB Elective: 3 _____

SUPPORTING COURSEWORK REQUIRED FOR SUB-PLAN

MCB 330 Critical Reasoning and Problem Solving in Biomedicine (F)1 _____

RECOMMENDED COURSES FOR PRE-HEALTH STUDENTS ONLY:

PSIO 201-Human Anatomy and Physiology I (F, S, SS) 4 units

PSIO 202 Human Anatomy and Physiology II (F, S, SS) 4 units

UNIVERSITY REQUIREMENTS:

120 total units 42 upper division units

2.000+ cum GPA 2.000+ major GPA

MCWA complete _____ Final 18 of 30 units complete _____

30+ total units at UA _____ 18+ MCB units at UA _____

<60 correspondence/UA exam units _____

Genetics and Human Health Sub-Plan Upper Division Elective Courses:

Choose one Writing Emphasis Elective (3 unit min.):

MCB 404 Bioethics – 3 units (F, S, SS)
MCB 422 Problem Solving w/ Genetic Tools – 3 units (F, SS)
MCB 473 Recombinant DNA Methods & Applications – 4 units (S)
MCB 498 Senior Capstone – 3 units (F, S)
MCB 498H Senior Honors Thesis – 3 units (F, S)
ECOL 379 Evidence Based Medicine – 3 units (S)

Choose one MCB Elective (3 unit min.):

MCB 315 Quantitative Biology – 3 units (F, even years only)
MCB 325 Biology of Cancer – 3 units (F)
MCB 422 Problem Solving w/ Genetic Tools – 3 units (F, SS)
MCB 425 Cancer Discoveries – 3 units (S)
MCB 442 Sex, Crime and Disease – Human Genetics Today – 3 units (S)
MCB 447 Big Data in Biology and Medicine – 3 units (F, odd years only)
MCB 480 Introduction to Systems Biology – 3 units (F)
MCB 482 Modeling Human Disease – 3 units (F)
PSIO 380 Fundamentals of Human Physiology – 4 units (F, S) **

** courses cannot be used to fulfill two sub-plan requirements*

*** Cannot take if taking PSIO 201 and PSIO 202*

Course offerings are subject to change. Please consult the Schedule of Classes for specific semester course information.