

# 2024 - 2025 Certificate Map

## Biomedical Research

School/College: [New College of Interdisciplinary Arts and Sciences](#)

Location: [West Valley](#)

### Program Requirements

The certificate in biomedical research consists of 15 credit hours of coursework, of which a minimum of 12 hours must be upper division. A minimum of six upper-division credit hours must be completed through courses offered by the School of Mathematical and Natural Sciences. Nine credit hours must be counted toward the certificate alone and may not be shared with a student's major requirements. All courses used to satisfy requirements for the minor must be passed with a "C" (2.00) or better.

#### Core Requirement -- 3 credit hours

[STP 280: Probability and Statistics for Researchers \(QTRS OR CS\)](#) (3)

#### Upper-Division Elective Requirements -- 8 credit hours

Complete at least two of the lecture/lab combinations below.

[BCH 371: Modern Concepts in Biochemistry](#) AND [BCH 372: Modern Concepts in Biochemistry Laboratory](#) (4)

[BIO 353: Cell Biology](#) AND [BIO 354: Cell Biology Laboratory](#) (4)

[BIO 360: Animal Physiology](#) AND [LSC 359: Animal Physiology Laboratory](#) (4)

[BIO 443: Applied Molecular Genetics and Genomics](#) AND [LSC 447: Molecular Genetics Laboratory](#) (4)

[MIC 443: The Microbial Universe](#) AND [MIC 444: The Microbial Universe Laboratory](#) (4)

#### Research Experience -- 4 credit hours

[ACO 399: Supervised Research](#) (1-3)

[ACO 492](#) / [BIO 492](#) / [ENV 492](#) / [FOR 492](#) / [LSC 492](#) / [MAT 492](#) / [PTX 492](#) / [STP 492: Honors Directed Study](#) (1-3)

[ACO 493](#) / [BIO 493](#) / [ENV 493](#) / [FOR 493](#) / [LSC 493](#) / [MAT 493](#) / [PTX 493](#) / [STP 493: Honors Thesis \(L\)](#) (1-3)

[BIO 495: Undergraduate Research](#) (1-3)

[ENV 388](#) / [FOR 388](#) / [LSC 388](#) / [PLB 388](#) / [PTX 388: STEM Research Fundamentals](#) (3)

[ACO 499: Individualized Instruction](#) or [BIO 499](#) / [ENV 499: Individualized Instruction](#) or [FOR 499](#) / [LSC 499: Individualized Instruction](#) or [MAT 499: Individualized Instruction](#) or [PLB 499](#) / [PTX 499](#) / [STP 499: Individualized Instruction](#) (1-3)

Prerequisite courses may be needed in order to complete the requirements of this certificate.