

# BIOLOGY - MICROBIOLOGICAL, MOLECULAR, AND BIOMEDICAL SCIENCES - ASSOCIATE OF SCIENCE DEGREE (AS)

Explore More About This Program: <https://cwi.edu/program/biology>

## Plan of Study Guide

*The course sequence listed below is strongly recommended in order to complete your program requirements. Please register for each semester as shown using the Student Planning tool in myCWI. Plans may be modified to fit the needs of part-time students by adding additional semesters. Consult your Student Success Advisor for any questions regarding this course sequence plan.*

### First Year

| Fall   |                                  | Credit Hours |
|--|----------------------------------|--------------|
| BIOL 111                                     | Biology I (GEM 4)                | 3            |
| BIOL 111L                                    | Biology I Lab (GEM 4)            | 1            |
| Select one of the following options (GEM 4): |                                  | 4            |
| Option 1:                                    |                                  |              |
| CHEM 101                                     | Introduction to Chemistry        |              |
| CHEM 101L                                    | Introduction to Chemistry Lab    |              |
| Option 2:                                    |                                  |              |
| CHEM 111                                     | General Chemistry I              |              |
| CHEM 111L                                    | General Chemistry I Lab          |              |
| CWI 101                                      | Connecting With Ideas            | 3            |
| Select one of the following (GEM 3):         |                                  | 3-5          |
| MATH 143                                     | College Algebra                  |              |
| MATH 147                                     | College Algebra and Trigonometry |              |
| MATH 160                                     | Survey of Calculus               |              |
| MATH 170                                     | Calculus I                       |              |
| <b>Total Semester Credit Hours</b>           |                                  | <b>14</b>    |

### Spring

|                                    |  |           |
|------------------------------------|--|-----------|
| BIOL 112                           | Biology II <sup>2</sup>                | 3         |
| BIOL 112L                          | Biology II Lab <sup>2</sup>            | 1         |
| CHEM 111                           | General Chemistry I <sup>3</sup>       | 3         |
| CHEM 111L                          | General Chemistry I Lab <sup>3</sup>   | 1         |
| ENGL 101                           | Writing and Rhetoric I (GEM 1)         | 3         |
| SCIE 102                           | Ethics in Science (GEM 6) <sup>4</sup> | 3         |
| GEM 2 - Oral Communication course  |  | 2         |
| <b>Total Semester Credit Hours</b> |  | <b>16</b> |

### Second Year

| Fall                                 |                                   | Credit Hours |
|--------------------------------------|-----------------------------------|--------------|
| CHEM 112                             | General Chemistry II              | 3            |
| CHEM 112L                            | General Chemistry II Lab          | 2            |
| ENGL 102                             | Writing and Rhetoric II (GEM 1)   | 3            |
| Select one of the following options: |                                   | 4            |
| Option 1:                            |                                   |              |
| MMBS 250                             | General Microbiology <sup>5</sup> |              |

|   |  |           |
|---|--|-----------|
| MMBS 250L   | General Microbiology Lab <sup>5</sup>  |           |
| Option 2:   |  |           |
| MMBS 260  | Introduction to Cell Biology <sup>5</sup>  |           |
| MMBS 260L   | Introduction to Cell Biology Lab <sup>5</sup>  |           |
| GEM 5 - Humanistic & Artistic Ways of Knowing course              |  | 3         |
| <b>Total Semester Credit Hours</b>                                |  | <b>15</b> |
| <b>Spring</b>   |  |           |
| MMBS 106  | Making Sense of the Micro-biotic-me (Global Perspectives)  | 3         |
| MMBS 280  | Genetics <sup>6</sup>  | 3         |
| MMBS 280L   | Genetics Lab <sup>6</sup>  | 1         |
| GEM 5 - Humanistic & Artistic Ways of Knowing course <sup>7</sup> |  | 3         |
| GEM 6 - Social & Behavioral Ways of Knowing course <sup>6</sup>   |  | 3         |
| Major Electives   | Select 0-6 credits from the list below to bring the total credits earned to 60, if needed <sup>8</sup> | 0-6       |
| <b>Total Semester Credit Hours</b>                                |  | <b>15</b> |
| <b>Minimum Credit Hours Required</b>                              |  | <b>60</b> |

- <sup>1</sup> Students who have prior experience with chemistry are strongly encouraged to take the Chemistry Placement exam at the CWI Assessment Center. Passing the Chemistry Placement exam will allow students to register directly into CHEM 111 General Chemistry I and will enable them to complete additional credits from the Major Electives list.
- <sup>2</sup> BIOL 112 and BIOL 112L are best taken within a semester of completing BIOL 111 and BIOL 111L to ensure greater success.
- <sup>3</sup> If CHEM 111 General Chemistry I was completed to fulfill your GEM 4 requirement, you should complete four (4) credits of coursework from the Major Electives course list instead.
- <sup>4</sup> This course fulfills the Ethical Reasoning requirement for an associate degree from CWI.
- <sup>5</sup> MMBS 250 and MMBS 250L are only offered in the Spring. MMBS 260 and MMBS 260L are not offered on a consistent basis. Depending on your start term and desired course, you may choose to take a course from the Major Electives list below in your third semester and the required MMBS course in your fourth semester.
- <sup>6</sup> MMBS 280 and MMBS 280L are only offered in spring. Depending on your start term you may be required to take your capstone course in your third semester and the second GEM 5 or GEM 6 course in your fourth semester.
- <sup>7</sup> Course must come from a different discipline.
- <sup>8</sup> See catalog and possible transfer institution for elective options. To determine which elective is appropriate, consult your advisor and refer to the applicable 2+2 guide.

## Biology - Microbiological, Molecular, and Biomedical Sciences: Major Electives

| Course    | Course Title  | Min Credits |
|-----------|---|-------------|
| BIOL 104  | Professions in Biology                                | 3           |
| BIOL 113  | Biology III: Principles of Structure and Function     | 3           |
| BIOL 113L | Biology III: Principles of Structure and Function Lab | 1           |
| BIOL 227  | Human Anatomy and Physiology I                        | 3           |
| BIOL 227L | Human Anatomy and Physiology I Lab                    | 1           |
| BIOL 293  | Biology Internship                                    | 1-3         |
| CHEM 253  | Quantitative Analysis                                 | 3           |
| CHEM 253L | Quantitative Analysis Lab                             | 2           |
| CHEM 298  | Organic Chemistry I                                   | 3           |
| CHEM 298L | Organic Chemistry I Lab                               | 2           |
| ENGL 202  | Technical Communication                               | 3           |
| ENVI 260  | General Ecology                                       | 3           |
| ENVI 260L | General Ecology Lab                                   | 1           |
| MATH 144  | Trigonometry  | 2           |
| MATH 147  | College Algebra and Trigonometry                      | 5           |
| MATH 153  | Statistical Reasoning                                 | 3           |
| MATH 170  | Calculus I  | 5           |
| MATH 175  | Calculus II   | 4           |
| MMBS 250  | General Microbiology                                  | 3           |
| MMBS 250L | General Microbiology Lab                              | 1           |

|           |   |   |
|-----------|---|---|
| MMBS 260  | Introduction to Cell Biology                | 3 |
| MMBS 260L | Introduction to Cell Biology Lab            | 1 |
| MMBS 270  | Introduction to Pharmacology                | 3 |
| PHYS 111  | General Physics I                           | 3 |
| PHYS 111L | General Physics I Lab                       | 1 |
| SCIE 225  | Essential Principles of Scientific Research | 1 |