RAMAPO COLLEGE OF NEW JERSEY

**School of Science, Nursing, and Health**

# Bioinformatics

Recommended Graduation Plan (Fall 2026)

The recommended graduation plan is designed to provide a blueprint for students to complete their degrees on time. Students must meet with their Academic Advisor to develop a more individualized plan to complete their degree.

**NOTE:** This recommended Graduation Plan is applicable to students admitted into the major during the 2026-2027 academic year.

| CRWT Placement |
|---|
| CRWT 101 to CRWT 102 |
| CRWT 101S to CRWT 102S |

| Math Placement |
|---|
| MATH 022 to MATH 024 to MATH 110 |

**NOTE**: CRWT and MATH courses are determined by placement testing and should be taken following the sequence above.

| First Year | | | | | |
|---|---|---|---|---|---|
| **Fall Semester** | **HRS** | **✓** | **Spring Semester** | **HRS** | **✓** |
| Gen Ed: INTD 101-First Year Seminar | 4 | | BIOL 113 & BIOL 113L-Fundamentals of Biology II Lecture & Lab* | 4+1 | |
| Gen Ed: CHEM 116 & CHEM 116L-General Chemistry I Lecture & Lab | 4+1 | | CHEM 117 & CHEM 117L-General Chemistry II Lecture & Lab* | 4+1 | |
| Gen Ed: CRWT 102 - Critical Reading & Writing II | 4 | | CMPS 130 - Sci Problem Solving-Python | 4 | |
| BIOL 111 & BIOL 111L-Fundamentals of Biology I Lecture & Lab **WI** | 4+1 | | Gen Ed: MATH 121-Calculus I* | 4 | |
| | | | SNH Pathways Module 1: (PATH-001) Career Assessment/ Advising | **Degree Rqmt.** | |
| **Total:** | 18 | | **Total:** | 18 | |

| Second Year | | | | | |
|---|---|---|---|---|---|
| **Fall Semester** | **HRS** | **✓** | **Spring Semester** | **HRS** | **✓** |
| CHEM 211 & CHEM 211L -Organic Chemistry I Lecture & Lab * OR CHEM 206 & CHEM 206L-Essentials of Organic Chemistry Lecture* & Lab* | 4+1 | | CHEM 213 & CHEM 213L-Organic Chemistry II Lecture* & Lab* OR Free Elective (minor, certificate, or second major requirement | 4+1 | |
| CMPS 240-Data Analytics in Python* | 4 | | BIOL 332 & BIOL 332L-Genetics Lecture & Lab* | 4+1.5 | |
| DATA 101-Introduction to Data Science | 4 | | PSYC 242-Statistics* OR ENSC 345-Research Design & Statistics* | 4 | |
| General Education Requirement | 4 | | | | |
| SNH Pathways Module 2: (PATH-002) Resume/ CV Writing | **Degree Rqmt.** | | SNH Pathways Module 3: (PATH-003) Interview Preparation | **Degree Rqmt.** | |
| **Total:** | 17 | | **Total:** | 14.5 | |

| Third Year | | | | | |
|---|---|---|---|---|---|
| **Fall Semester** | **HRS** | **✓** | **Spring Semester** | **HRS** | **✓** |
| BIOL 407 & BIOL 407L-Cell & Molecular Biology Lecture* & Lab* **WI** | 4+1.5 | | BIIN 430-Bioinformatics* | 4 | |
| MATH 237-Discrete Structures* | 4 | | CMPS 364-Database Design* | 4 | |
| Bioinformatics Elective (Group I) | 4 | | General Education Requirement | 4 | |
| General Education Requirement | 4 | | General Education Requirement | 4 | |
| **Total:** | 17.5 | | **Total:** | 16 | |

| Fourth Year | | | | | |
|---|---|---|---|---|---|
| **Fall Semester** | **HRS** | **✓** | **Spring Semester** | **HRS** | **✓** |
| Bioinformatics Elective (Group II) | 4 | | BIIN 450-Advanced Bioinformatics* **WI** | 4 | |
| General Education Requirement | 4 | | General Education Requirement | 4 | |
| Bioinformatics Elective (Group II) | 4 | | Bioinformatics Elective (Group I or II or second semester Honors Research) | 1 or 4 | |
| Free Elective (minor, certificate, or second major requirement) | 1-2 | | Free Elective (minor, certificate, or second major requirement) | 2-5 | |
| **Total:** | 13 | | **Total:** | 14 | |

Bioinformatics BS Major Requirements: 77-84 credits
*Required Major courses*: (*63-68 credits)*
*Required Major Electives*: (*14-16 credits)*

General Education: 40 credits
TOTAL CREDITS FOR GRADUATION: **128**

**Total Credits Required:** 128 credits
**GPA Required:** 2.0
*** This course has a pre-requisite. Please refer to the course catalog for information about pre-requisites.**
**WI: Writing Intensive-3 required in the major**

**General Education courses** can be done in any order with the exception of INTD 101, CRWT and MATH. Those three general education courses will need to be done first. First Year Seminar is taken in the first semester. Failure to complete CRWT and MATH will result in a hold when the student hits 64 credits. The following general education courses can be done in any order. For more info on these courses, please visit the General Education program requirements website in the College Catalog:

- Social Science Inquiry (SOSC 110) *[+W]*
- Scientific Reasoning
- Historical Perspectives *[+W]*
- Studies in the Arts & Humanities (*CRWT 102 is a prerequisite to this course*) *[+W]*
- Global Awareness *[+W]*
- Distribution Category (Social Systems & Society **OR** Culture & Creativity **OR** Values and Ethics)
- Distribution Category (Social Systems & Society **OR** Culture & Creativity **OR** Values and Ethics)

+W: Students transferring in with 48 or more credits are waived from these general education requirements.

**Please see the "Bioinformatics BS" Catalog Description for a complete list of courses, including elective course choices. Part of the elective course requirement can be fulfilled with appropriate research courses.**