**BACHELOR of SCIENCE (B.S.) in BIOLOGY (2023-2024)**

**BBTE -- Biotechnology Emphasis**

**Four-Year Degree Plan**

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| WRITING INTENSIVE PROGRAM: Students must complete a combined total of 9 credit hours of Writing Enriched (WE) and Writing in the Discipline (WD) coursework. One course must be a WD course (of any number of credits) and can be BIO 4700 or any other WD course. BIO 3710 (see page 2) will count as 4 WE hours, so you will need at least 2 more hours of WE or WD coursework, which can come from any discipline. Double majors need only fulfill the Writing Intensive Program requirement once. It is recommended that you “double dip” by taking a Biology elective or General Education Requirement that is also designated as WE. NOTE: Successful completion (grade of “C” or better) of ENG 1050 is a prerequisite for all WE or WD courses.  INDIGENOUS CULTURES AND COMMUNITIES (ICC): Students entering the university inFall 2023 or later shall complete the ICC requirement for graduation. Students may satisfy this requirement by completing two 3-credit hour ICC-designated courses. Students who transfer over 60 or more hoursshall complete one 3-credit hour ICC course. Designated ICC courses can satisfy other graduation requirements such as General Education and/or Writing Intensive Program requirements (see above); it is possible to “double dip” or even “triple dip” (e.g.,MUS 1210 may satisfy a Fine Arts, WE, and ICC requirement).  **\*\*\*ALL GENERAL EDUCATION COURSES CAN BE INTERCHANGED\*\*\***  C or higher is required in BIO 1000 to matriculate to other BIO courses in the major  \*Count towards 44 hours of General Education  \*\***Biotechnology Emphasis Electives:** BIO 3200, 3750, 3810, 4130, BTEC 4300, BTES 4xxx, CHM 2500&2520, 2270, 3110&3120, PHY 1500&1560, 1510&1570  QPA Requirements for Baccalaureate Graduation: “Have a minimum overall cumulative quality point average of 2.0 and have a minimum cumulative quality point average of 2.0 in all work attempted at the University of North Carolina at Pembroke; Have a minimum overall cumulative quality point average of 2.0 in the major field of study.” Note: QPA cannot be rounded up (e.g., a QPA of 1.996 is not sufficient for graduation). |

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| **Freshman Year** | | | | | | | |
| **Fall** | | | | **Spring** | | | |
|  | Course Number | Course Title | Credits |  | Course Number | Course Title | Credits |
|  | UNV 1000 | Freshman Seminar | 1 |  | ENG 1060\* | Composition II | 3 |
|  | ENG 1050\* | Composition 1 | 3 |  | CHM 1300\* | General Chemistry | 3 |
|  | BIO 1000\* | Principles of Biology | 3 |  | CHM 1100 | General Chemistry Laboratory I | 1 |
|  | BIOL 1000 | Laboratory Investigations and Experiences in General Biology | 1 |  | MAT 1070\* or  MAT 1090\* | College Algebra or Precalculus | 3 or  4 |
|  | General  Education | Social Science | 3 |  | General Education | Elective | 3 |
|  | University Wide Elective |  | 3 |  | University Wide Elective |  | 3 |
|  | General Education | Physical Education | 1 |  |  |  |  |
| **Total Credits** | | | 15 |  | **Total Credits** | | 16-17 |

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| **Sophomore Year** | | | | | | | |
| **Fall** | | | | **Spring** | | | |
|  | Course Number | Course Title | Credits |  | Course Number | Course Title | Credits |
|  | BIO 1010 or  BIO 1020 | General Botany or  General Zoology | 4 |  | MAT 2100\* | Introduction to Statistics | 3 |
|  | CHM 1310 | General Chemistry II | 3 |  | BIO 1010 or  BIO 1020 | General Botany or  General Zoology | 4 |
|  | CHM 1110 | General Chemistry Laboratory II | 1 |  | Biotech Emphasis Elective\*\* |  | 1-4 |
|  | Biotech Emphasis Elective\*\* |  | 1-4 |  | General Education | Social Science | 3 |
|  | General Education | Literature | 3 |  | University Wide Elective |  | 3 |
|  | University Wide Elective |  | 3 |  | General Education | Physical Education | 1 |
| **Total Credits** | | | 15-18 |  | **Total Credits** | | 15-18 |

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| **Junior Year** | | | | | | | |
| Fall | | | | Spring | | | |
|  | Course Number | Course Title | Credits |  | Course Number | Course Title | Credits |
|  | MAT 2150 or  MAT 2210 | Calculus with applications or  Calculus I | 4 |  | BIO 3180 | Principles of Genetics | 4 |
|  | BIO 3040 | Principles of Ecology | 4 |  | MAT 2220 | Calculus II | 4 |
|  | BTEC 3220  (*Fall Odd years only)* | Biotechnology I | 4 |  | BIO 3150 | Microbiology | 4 |
|  | University Wide Elective |  | 3 |  | BTEC 3510 or BTEC 4300 or BIO 4130  (*Spring Only?)* | Bioprocessing  or Principles of Medical Biotechnology or Molecular Biology | 3-4 |
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| **Total Credits** | | | 15 | **Total Credits** | | | 15-16 |

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| **Senior Year** | | | | | | | |
| **Fall** | | | | **Spring** | | | |
|  | Course Number | Course Title | Credits |  | Course Number | Course Title | Credits |
|  | BIO 3710 (WE) | Cell Biology | 4 |  | BTEC 4900  *Taken in last summer* | Internship | 3 |
|  | BIO 4700 (WD) | Reading and Writing in the Natural Sciences | 3 |  | Biotech Emphasis Elective\*\* |  | 3-4 |
|  | Biotech Emphasis Elective\*\* |  | 1-4 |  | General Education | Fine Arts | 3 |
|  | General Education | Philosophy and Religion | 3 |  | General Education | History | 3 |
|  | General  Education | Social Science | 3 |  | University Wide Elective |  | 3 |
| **Total Credits** | | | 14-17 | **Total Credits** | | | 15-16 |