**Bachelor of Science (B.S.) in Biology (2023-2024)**

**BAGS – Agricultural Science 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. The WE coursework 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).  \*C or higher is required in BIO 1000 to matriculate to other BIO Courses in the major  **\*\*Approved Agricultural Science Electives (Arranged by Areas of Interest):**  Students may take any of the courses from the list below, but we recommend that students consider adopting one of the Areas of Interest outlined below and take elective courses accordingly. Additionally, relevant BIOS courses (BIOS 3055- Tropical Horticulture, BIOS 3012- Small Fruit and Berry Production, BIOS xxxx- Ruminant Production can be substituted and count toward the degree electives.   * ***Area of interest – Animal Husbandry*** BIO 3190 Animal Parasitology (4), BIO 2410 Principles of Animal Nutrition (3), BTEC 4300 Principles of Medical Biotechnology (3), BIO 2060 Animal Reproductive Physiology (4) * ***Area of interest – Plant Cropping*** BIO 3540 Plant Physiology (4), BIO *3010* Entomology (4), BIO 2010 Techniques in Horticulture (4) * ***Area of interest – Niche Farming*** BIO **2080** Introductory Mycology (3), BIO 2420 Beekeeping (3), BIO 3020 Greenhouse Management (4) * ***Area of interest – Food Systems*** ENV 4100 Environmental Laws and Regulations (3) OR ECN 3080 Environmental Economics (3) [prereq. ECN 2020 (Gen. Ed.)] * ***Area of interest – Sustainable Agriculture*** BIO 3420 Pollution Ecology (3), BIO ***4320*** Conservation Biology (4), BIO 4510 Small Farming Systems (4), ENV 3100 Freshwater Ecosystems and Watershed Management (4)   ***Area of interest – Agricultural Technology*** GGY 2700 Intro to Geographic Information Science (4), GGY 4040 Remote Sensing (3),  GLY 2460 Weather and Climate (3), GLY 2620 Environmental Geology (3)  **ALL GENERAL EDUCATION COURSES CAN BE INTERCHANGED**  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 |  | BIO 1010 or  BIO 1020 | General Botany or  General Zoology | 4 |
|  | MAT 1070 or  MAT 1090 | College Algebra or Precalculus | 3 or  4 |  | 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 |  | BIO 2010 (this is an elective course – see Plant Cropping electives)  (OR  General Education) | Techniques  in Horticulture  (OR  Fine Arts  &  Physical Education) | 4  (3)  (1) |
|  | BIO 1040  (odd years only)  (OR  General Education) | Introduction to Animal Science  (OR  Fine Arts) | 3  (3) |  |
| **Total Credits** | | | 14-15 |  | **Total Credits** | | 15 |

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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 |  | ENV 2450 (spring of odd years only) | Principles of Sustainable Agriculture | 4 |
|  | CHM 1110 | General Chemistry Laboratory II | 1 |  | General Education | Literature | 3 |
|  | Agricultural Science Elective\*\* |  | 3-4 |  | ENV 3200 (spring of odd years only) | Soils and Hydrology | 4 |
|  | General Education | History | 3 |  | University Wide Electives \*\*\* |  | 3 |
| **Total Credits** | | | 14-15 |  | **Total Credits** | | 15 |

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| **Junior Year** | | | | | | | |
| **Fall** | | | | **Spring** | | | |
|  | Course Number | Course Title | Credits |  | Course Number | Course Title | Credits |
|  | BIO 3180 | Principles of Genetics | 4 |  | ENV 3250 (spring of even years only) | Plant Cropping and Weed Management | 3 |
|  | Agricultural Science Elective\*\* |  | 3-4 |  | BIO 3040 | Principles of Ecology | 4 |
|  | Agricultural Science Elective\*\* |  | 3-4 |  | University Wide Electives \*\*\* |  | 3 |
|  | General Education | Social Science | 3 |  | General Education | Elective | 3 |
|  | General Education | Physical Education | 1 |  | General Education | Philosophy and Religion | 3 |
| **Total Credits** | | | 15-16 | **Total Credits** | | | 15-16 |

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| **Senior Year** | | | | | | | |
| **Fall** | | | | **Spring** | | | |
|  | Course Number | Course Title | Credits |  | Course Number | Course Title | Credits |
|  | ENV 4200 (fall of even years only) | Pest Management | 4 |  | BIO 4700 (WD) |  | 3 |
|  | BIO 4010 | Agriculture Internship | 3 |  | General Education | Social Science | 3 |
|  | General Education | Social Science | 3 |  | University Wide Electives\*\*\* |  | 3 |
|  | University Wide Electives\*\*\* |  | 3 |  | University Wide Electives\*\*\* |  | 3 |
|  | University Wide Electives\*\*\* |  | 3 |  | University Wide Electives\*\*\* |  | 3 |
| **Total Credits** | | | 16 | **Total Credits** | | | 15 |

\*\*Approved Agricultural Science Electives

**\*\*\* Students with an interest in entrepreneurship or small business are encouraged to use some of their university electives to obtain an Entrepreneurship Certificate. The following courses are required for this certificate: ENTR 2000, ENTR 2100, ENTR 4000**