

COLLEGE OF NATURAL RESOURCES AND ENVIRONMENT
Department of Sustainable Biomaterials
Bachelor of Science in Sustainable Biomaterials
Major in Sustainable Biomaterials
For students graduating in calendar year 2020

Minimum credit hours required for graduation is 120.

Major Requirements

Sustainable Biomaterials Degree Core Requirements – 30 credit hours

- SBIO 1234 Introduction to Wood, Design, and Craftsmanship (3)
- SBIO 2124 Structure and Properties of Sustainable Biomaterials (3) (Pre: BIOL 1105, CHEM 1035)

Choose one:

- SBIO 2614 Introduction to Forest Products Marketing (3)
- SBIO 3454 Society, Sustainable Biomaterials, and Energy (3)
- SBIO 3004 Sustainable Nature-based Enterprise (3)
- SBIO 3464 Forest Products Business Systems (3)

Choose one:

- SBIO 3445 Entrepreneurial Wood Design and Innovation (3)
- SBIO 3954 Study Abroad (3)
- SBIO 3964 Field Study (3)
- SBIO 4994 Undergraduate Research (3)
- SBIO 4715 - 4716 Wood House (3, 3)
- STAT 3615 Biological Statistics (3)
- STAT 3616 Biological Statistics (3) (Pre: STAT 3615)

Track Requirements

Creating Sustainable Society Track - 18 credit hours

- AAEC 3314 Environmental Law (3)

Choose one:

- SBIO 2964 or 4964 Field Study
- SBIO 2994 or 4994 Undergraduate Research
- SBIO 3954 Study Abroad (at least 3 credit hours)
- SBIO 3324 Green Building Systems (3)
- SBIO 3554 Sustainable Biomaterials Enterprises (3)

Choose either the following 2 ENGR courses or the following 2 NR courses

- ENGR 3124 Green Engineering (3) (Pre: CHEM 1035 or 1074, ENGR 1104 or 1114, PHYS 2306)
- ENGR 4134 Environmental Life Cycle Assessment (3) (Pre: ENGR 3124)

or

- GEOG/NR 1115
- GEOG/NR 1116 Seeking Sustainability (3,3) (Pre: NR 1115 for 1116)

Free electives - 36 credit hours

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Forest Products Business Track - 18 credit hours

- ACIS 2115 Principles of Accounting (3)
- SBIO 2614 Introduction to Forest Products Marketing (3)
- SBIO 3446 Entrepreneurial Wood Design and Innovation (3) (Pre: 3445)
- SBIO 3554 Sustainable Biomaterials Enterprises (3) (Pre: 1234)
- MGT 3064 Cornerstones of Entrepreneurship and Innovation (3)
- MGT 3304 Management Theory and Leadership Practice (3) (Pre: Sophomore standing)

Free electives - 36 credit hours

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Sustainable Biomaterials Science Track - 41 credit hours

- ___ CHEM 1036 General Chemistry (3) (Pre: CHEM 1035 or 1055)
- ___ CHEM 2114 Analytical Chemistry (3) (Pre: CHEM 1036 or CHEM 1056)
- ___ CHEM 2124 Analytical Chemistry Laboratory Techniques and Practice (1) (Pre: CHEM 1046 or CHEM 1066; Co: CHEM 2114)
- ___ CHEM 2535 Organic Chemistry (3) (Pre: CHEM 1036 or CHEM 1056)
- ___ CHEM 2536 Organic Chemistry (3) (Pre: CHEM 2535 or CHEM 2565)
- ___ CHEM 2545 Organic Chemistry Laboratory (1) (Pre: CHEM 1046 or CHEM 1066; Co: CHEM 2535)
- ___ CHEM 2546 Organic Chemistry Laboratory (1) (Pre: CHEM 2545; Co: CHEM 2536)
- ___ CHEM 4615 Physical Chemistry for the Life Sciences (3) (Pre: One year of chemistry, physics, and calculus)
- ___ PHYS 2205 General Physics (3) (Pre: (MATH 1016 or MATH 1025) or (MATH 2015 or MATH 1026) or MATH 1205 or MATH 1525 or MATH 1535)
- ___ PHYS 2206 General Physics (3) (Pre: PHYS 2205 or PHYS 2305)
- ___ SBIO 3314 Wood Mechanics (4) (Pre: 2554, MATH 1016 or MATH 1025)
- ___ SBIO 3434 Chemistry and Conversion of Sustainable Biomaterials (3) (Pre: 2124, CHEM 1036)
- ___ SBIO 3444 Sustainable Biomaterials and Bioenergy (3) (Pre: CHEM 2514 or CHEM 2535, CHEM 3615 or CHEM 4615)
- ___ SBIO 4444 Sustainable Biomaterial Composites (4) (Pre: 2124, 2384, 3434)
- ___ SBIO 5424/4424G Polysaccharide Chemistry (3) (Pre: CHEM 2536 or CHEM 2566)

Free electives - 13 credit hours

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Sustainable Residential Structures Track - 18 credit hours

- ___ AHRM 2604 House Planning (2)
- ___ CHEM 1036 General Chemistry (3) (Pre: CHEM 1035 or 1055)
- ___ PHYS 2205 General Physics (3) (Pre: (MATH 1016 or MATH 1025) or (MATH 2015 or MATH 1026) or MATH 1205 or MATH 1525 or MATH 1535)
- ___ SBIO 3314 Wood Mechanics (4) (Pre: 2554, MATH 1016 or MATH 1025)
- ___ SBIO 3324 Green Building Systems (3)
- ___ SBIO/CEM 4314 Design of Wood Structures (3) (Pre: 3314 or CEE 3404)

Free electives - 36 credit hours

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Curriculum for Liberal Education Requirements – 36 credit hours

Area 1: Writing and Discourse (6 credit hours required)

- ENGL 1105 First-year Writing (3)
- ENGL 1106 First-year Writing (3) (Pre: ENGL 1105)

Area 2: Ideas, Cultural Traditions, and Values (6 credit hours required)

- CLE Area 2 course: _____
- CLE Area 2 course: _____

Area 3: Society and Human Behavior (6 credit hours required)

- ECON 2005 Principles of Economics (3)
- ECON 2006 Principles of Economics (3) (Pre: ECON 2005 or 2116 or 2126 or 2025H)

Area 4: Scientific Reasoning and Discovery (8 credit hours required)

- BIOL 1105 Principles of Biology (3) (Co: BIOL 1115)
- BIOL 1115 Principles of Biology Laboratory (1) (Co: BIOL 1105)
- CHEM 1035 General Chemistry (3)
- CHEM 1045 General Chemistry Laboratory (1) (Co: CHEM 1035)

Area 5: Quantitative and Symbolic Reasoning (6 credit hours required)

- MATH 1025 Elementary Calculus (3)
- MATH 1026 Elementary Calculus (3) (Pre: MATH 1025)

Area 6: Creativity and Aesthetic Experience (1 credit hour required)

- CLE Area 6 course: _____

Area 7: Critical Issues in a Global Context (3 credit hours required)

- SBIO/FOR 2784 Global Forest Sustainability (3)

1. **Satisfactory Progress:** By the end of the semester in which the student has attempted 60 hours (including transfer, advanced placement, advanced standing, and credit by examination), "satisfactory progress" towards a B.S. degree in the College of Natural Resources and Environment will include the following minimum criteria:
 - Having an in-major and overall grade point average of at least 2.0
 - Passing at least 24 semester credits that apply to the Curriculum for Liberal Education
 - Passing the required 1000-level courses in Biology, Chemistry, English, and Math
2. **Foreign Language Requirement:** A sequence of two (2) foreign language courses is required for graduation unless two (2) high school credits of the same foreign language or six (6) transfer credit hours of foreign language have been earned. These credits do not count toward graduation.
3. **Sequencing:** Courses should be taken in a sequence that ensures that prerequisite or corequisite requirements are met. Free elective courses may also have prerequisite requirements. Students should plan ahead and ensure that they have completed prerequisites or are enrolled in corequisite courses.
4. **In-major GPA computation:** In-major GPA computation includes all courses designated SBIO.
5. An in-major and overall GPA of 2.0 is required for graduation.
6. In accordance with university guidelines, courses satisfying the degree core requirements may not be double counted to satisfy other areas of a degree (e.g., CLE).