

Department of Sustainable Bioproducts

Major Advisor: Dr. Mike Barnes

Office: Room 5102, Building 5 Sustainable Bioproducts Laboratory at 201 Locksley Way

The bioproducts industry is one of the largest economic contributors to Mississippi, as well as in the United States. Employment in timber conversion, engineered composites, pulp and paper, logging, and furniture manufacturing is widely available. Mississippi's bioproducts industry recognizes the need for well-trained employees to help increase the conversion efficiencies and alter manufacturing processes to allow compatibility with a changing raw material base. The industry and its allied disciplines are large in terms of employment in Mississippi and nationwide.

The mission of the Department of Sustainable Bioproducts is to enhance the intellectual, cultural, social, and professional development of its students by providing them with knowledge and skills needed to utilize and conserve diverse forest and other resources effectively. In this regard, the Department's primary teaching responsibility is to provide high quality educational opportunities necessary to adequately prepare students for professional and scientific careers in sustainable bioproducts manufacturing, technology, business, and related fields.

The Department of Sustainable Bioproducts' physical plant consists of five laboratory/office buildings and other special purpose buildings and the Franklin Center for Furniture Manufacturing and Management, with a combined floor space in excess of 90,000 square feet. These buildings house the analytical and testing equipment, laboratories, pilot plants, and support facilities required for a comprehensive research program involving wood and biobased products.

Presently, students interested in a sustainable bioproducts curriculum have the option of the Sustainable Bioproducts undergraduate or graduate program.

Sustainable Bioproducts Major

Students majoring in sustainable bioproducts will develop a strong foundation in properties, manufacturing, environmental implications, sales, and trading of products derived from wood and non-wood materials that come from agricultural residues and other natural fibers. Besides structural materials, specialty chemicals such as polymers and adhesives from natural resources, and bio-based energy such as wood pellets, bio-oil and alcohols are increasingly important with respect to sustainable industrial production. In addition to utilizing timber and agricultural residues, the discipline seeks to make materials last longer and enhance sustainability via preservative treatments and improved design.

Sustainable Bioproducts Minor

A Sustainable Bioproducts minor is available to non-majors to provide students with the knowledge of wood products, and bio-based composites, polymers, chemicals and fuels. The courses focus on material properties, environmental issues, and manufacturing principles, as well as their marketing and sales. The topics complement many fields that deal with natural materials: construction, design, business and production management, and scientific fields such as chemistry, engineering and environmental and biotechnology. A minor in Sustainable Bioproducts will also provide non-major students an excellent background for entering a graduate degree program in Sustainable Bioproducts. Academic advising is available in the Department of Sustainable Bioproducts located at 201 Locksley Way. A total of 18 hours is required to obtain a Sustainable Bioproducts minor.

English (General Education)

EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	

Fine Arts (General Education)

Any General Education course		3
------------------------------	--	---

Natural Sciences

BIO 1134	Biology I	4
BIO 1144	Biology II	4

Additional Science

CH 1043	Survey of Chemistry I	3
CH 1053	Survey of Chemistry II	3
CH 1051	Experimental Chemistry	1

Math (General Education)

MA 1313	College Algebra	3
MA 1323	Trigonometry	3
ST 2113	Introduction to Statistics	3
or ST 3123	Introduction to Statistical Inference	

Humanities (General Education)

Any Gen Ed courses	6
--------------------	---

Social/Behavioral Sciences (General Education)

Any course from Gen Ed list	3
-----------------------------	---

Choose one of the following Economics courses:	3
--	---

AEC 2713	Introduction to Food and Resource Economics	
or EC 2113	Principles of Macroeconomics	
or FO 4113	Forest Resource Economics	

Oral Communicaton Requirement

CO 1003	Fundamentals of Public Speaking	3
---------	---------------------------------	---

Writing Requirement

AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
or MGT 3213	Organizational Communications	
or BIO 3013	Professional Writing for Biologists	

Major Core Courses (Required)

SBP 1103	Introduction to Sustainable Bioproducts	3
SBP 2012	Introduction to Bioproduct Industries	2
SBP 2123	Materials and Processing of Structural Bioproducts	3
SBP 3113	Biomaterial Phys Mech	3
SBP 3123	Biomass to Bioproducts	3
SBP 4253	Quantitative Methods in Sustainable Bioproducts	3
SBP 4313	Bioproducts and the Environment	3
SBP 4333	Bioproducts and Environmental Biotechnology	3
SBP 4443	Capstone Sustainable Bioproducts	3

Major Courses Professional Electives

SBP 3143	Biomass Characteristics and Production	3
SBP 4000	Directed Individual Study	6
SBP 4023	Lignocellulosic Biomass Chemistry	3
SBP 4113	Adhesives and Biocomposites	3
SBP 4133	Biorefinery Processes	3
SBP 4144	Biocomposite Application and Manufacturing	4
SBP 4153	Biological Conversion of Biomass	3
SBP 4213	Deterioration and Preservation of Biomaterials	3
SBP 4243	Sustainable Bioproducts	3
SBP 4450	Undergraduate Research in Sustainable Bioproducts	1-6

Professional Electives

Choose any class that is 3000 level or above from the following subjects: ABE, AEC, ARC 2713, BCH, BCS, BIO, BIS, BL, CE, CH, EC, EE, EG, EM, EPP, FIN, FO, GR, IE, TKI, LA, MGT, MKT, MA, ME, NREC, PH, PS, PSS, SBP, ST, WFA	18
--	----

Free Electives	8
-----------------------	----------

Total Hours	124
--------------------	------------