

ECOLOGY AND CONSERVATION BIOLOGY - BS, FOREST RESOURCES TRACK

The Department of Ecology and Conservation Biology provides one of the most advanced educational opportunities available to prepare undergraduate students for leadership in the science and stewardship of terrestrial and aquatic ecological systems. The BS in ECCB degree will emphasize acquisition of fundamental ecological knowledge and its application to biodiversity conservation, environmental health, and the management of complex systems, such as interactions involving aspects of ecology from genes to ecosystems, landscape, hydrology, and climate. Four tracks (Ecology and Conservation Biology, Ecoinformatics, Forest Resources, and Vertebrate Zoology) are offered to provide flexibility in one's chosen career path.

Forest Resources Track

The Forest Resource track builds on the ecology and conservation foundation of the ECCB major core. As such, it prepares students for a broad array of career opportunities, from that of a professional forester or natural resources specialist with government natural resource agencies, forest resources companies, conservation and environmental organizations, environmental or forestry consulting firms, urban forestry companies and agencies, or pursuing a graduate degree in natural resources. Students obtaining a degree in Ecology and Conservation Biology gain an understanding of ecological concepts and practices, human-environmental interactions and principles of conservation. Students in the ECCB Forest Resources track also learn important concepts in forest biology and ecology, assessment, and management and are exposed to exciting areas of increasing importance such as climate change, forest fire management, remote sensing, forest insects and diseases, and forest genetics. Students may use free electives to broaden their experience outside of natural resources or to add additional courses of interest within the other ECCB tracks, including Education Abroad.

Program Requirements

First Year

Fall		Semester Credit Hours
BIOL 111	Introductory Biology I	4
ESSM 201	Exploring Ecosystem Science and Management	1
MATH 140	Mathematics for Business and Social Sciences	3
RENr 205	Fundamentals of Ecology	3
General elective ¹		3
Semester Credit Hours		14
Spring		
BIOL 112	Introductory Biology II	4
MATH 142	Business Calculus	3

American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) ²	3	
Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) ²	3	
Social and behavioral sciences (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences) ²	3	
Semester Credit Hours		16

Second Year

Fall

CHEM 119	Fundamentals of Chemistry I	4
ESSM 203	Forest Trees of North America	3
WFSC 302	Natural History of the Vertebrates	3
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) ²	3	
Creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts) ²	3	
Semester Credit Hours		16

Spring

CHEM 222	Elements of Organic and Biological Chemistry	3
ESSM 310	Forest Tree Improvement and Regeneration	3
RENr 215	Fundamentals of Ecology–Laboratory	1
STAT 302	Statistical Methods	3
WFSC 304	Wildlife and Fisheries Conservation	3
Government/Political science (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science) ²	3	
Semester Credit Hours		16

Third Year

Fall

ESSM 309	Forest Ecology	3
ESSM 351/ RENr 405	Geographic Information Systems for Resource Management	3
WFSC 403	Animal Ecology	3
Select one of the following:		4
CHEM 120	Fundamentals of Chemistry II	
GEOL 101 & GEOL 102	Principles of Geology and Principles of Geology Laboratory	
PHYS 201	College Physics	
SCSC 301	Soil Science	
Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication) ²		3
Semester Credit Hours		16

Spring

AGEC 350	Environmental and Natural Resource Economics	3
ESSM 304	Rangeland Plant Taxonomy	3
ESSM 311	Biogeochemistry and Global Change	3
ESSM 324	Forest Measurements	2

Government/Political science (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science) ²	3
Semester Credit Hours	14
Fourth Year	
Fall	
ESSM 319 Principles of Forestry	3
ESSM 406 Natural Resources Policy	3
ESSM 416 Fire Ecology and Natural Resource Management	3
ESSM 444 Remote Sensing of the Environment	3
WFSC 433 Molecular Ecology in Wildlife and Fisheries	3
Semester Credit Hours	15
Spring	
ESSM 307 Forest Protection	3
ESSM 405 Forest Resource Assessment and Management	3
ESSM 485 Directed Studies	1
Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication) ²	3
General elective ¹	3
Semester Credit Hours	13
Total Semester Credit Hours	120

¹ Select from any 100-499 course not used elsewhere.

² Graduation requirements include a requirement for 3 hours of International and Cultural Diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/>) courses and 3 hours of Cultural Discourse (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/>) courses. A course satisfying a Core category, a college/department requirement, or a general elective can be used to satisfy this requirement.

Must make a grade of C or better in BIOL 111, BIOL 112, and all ECCB major core coursework (ESSM 201, ESSM 304, ESSM 311, ESSM 485, RENR 205, WFSC 302, WFSC 304, WFSC 403, and WFSC 433.)