

# SPATIAL SCIENCES - BS

## Program Requirements

### First Year

Fall		Semester Credit Hours
AGEC 105	Introduction to Agricultural Economics	3
ESSM 201	Exploring Ecosystem Science and Management	1
RENr 205 & RENr 215	Fundamentals of Ecology and Fundamentals of Ecology-Laboratory	4
Select one of the following:		4
BIOL 101	Botany	
BIOL 113	Essentials in Biology	
HORT 201 & HORT 202	Horticultural Science and Practices and Horticultural Science and Practices Laboratory	
Communication ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication</a> ) <sup>1</sup>		3
Semester Credit Hours		15

### Spring

CHEM 119	Fundamentals of Chemistry I	4
ESSM 281	Seminar in Ecosystem Science and Management	1
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> ) <sup>1</sup>		3
Communication ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication</a> ) <sup>1</sup>		3
Mathematics ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#mathematics">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#mathematics</a> )		3
Semester Credit Hours		14

### Second Year

Fall		
ESSM 351/ RENr 405	Geographic Information Systems for Resource Management	3
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> ) <sup>1</sup>		3
Government/Political science ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science</a> ) <sup>1,3</sup>		3
Mathematics ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#mathematics">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#mathematics</a> )		3
Emphasis area elective <sup>2</sup>		3
Semester Credit Hours		15

### Spring

ESSM 301	Wildland Watershed Management	3
ESSM 306 or ESSM 311	Plant Functional Ecology and Adaptation or Biogeochemistry and Global Change	3

ESSM 313	Vegetation Sampling Methods and Designs in Ecosystems	3
Government/Political science ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science</a> ) <sup>1,3</sup>		3
Emphasis area elective <sup>2</sup>		3
Semester Credit Hours		15

### Summer

SCSC 301	Soil Science	4
Language, philosophy and culture ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture</a> ) <sup>1</sup>		3
Semester Credit Hours		7

### Third Year

Fall		
ESSM 203 or ESSM 302	Forest Trees of North America or Wildland Plants of North America	3
ESSM 444	Remote Sensing of the Environment	3
ESSM 461	Spatial Databases for Data Storage, Manipulation and Analysis	3
Select one of the following:		3
ESSM 318	Coupled Social and Ecological Systems	
ESSM 404	Changing Natural Resource Policy	
ESSM 406	Natural Resources Policy	
AGEC 350	Environmental and Natural Resource Economics	
RENr 470	Environmental Impact Assessment	
Emphasis area elective <sup>2</sup>		3
Semester Credit Hours		15

### Spring

ESSM 459	Programming for Spatial Data Applications	3
Select one of the following:		3
AGEC 350	Environmental and Natural Resource Economics	
ESSM 318	Coupled Social and Ecological Systems	
ESSM 406	Natural Resources Policy	
RENr 470	Environmental Impact Assessment	
Select one of the following:		3
ESSM 317	Vegetation Management	
ESSM 319	Principles of Forestry	
ESSM 320	Ecosystem Restoration and Management	
Creative arts ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts</a> ) <sup>1</sup>		3
Emphasis area elective <sup>2</sup>		3
Semester Credit Hours		15

### Fourth Year

Fall		
ESSM 481	Senior Seminar	1
Emphasis area elective <sup>2</sup>		3
Emphasis area elective <sup>2</sup>		3
General elective		3
General elective		2
Semester Credit Hours		12

**Spring**

ESSM 462/	Advanced GIS Analysis for Natural	3
GEOG 462	Resource Management	
ESSM 464	Spatial Project Management	3
Emphasis area elective <sup>2</sup>		3
Emphasis area elective <sup>2</sup>		3
Semester Credit Hours		12
Total Semester Credit Hours		120

<sup>1</sup> Graduation requirements include a requirement for three hours of International and Cultural Diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/>) courses and three 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 free elective can be used to satisfy this requirement. See an academic advisor.

<sup>2</sup> To be selected from an approved list in consultation with an academic advisor.

<sup>3</sup> Credit by examination may be used to substitute 3 hours of POLS 206 or POLS 207.