

**OFFICE OF ACADEMIC AFFAIRS  
PROGRAM APPROVAL FORM**



Undergraduate   
  Graduate   
  New Program   
  Program Change  
 College: CoS                      Department: Atmospheric Science

Program Title: Minor in Geographic Information Systems / Remote Sensing

Program Type:     Major     Minor     Concentration     Certificate

Total Credit Hours: 21                      Effective Date: 08/01/2017

Is the new program or change in existing program part of an accreditation requirement? *If so, please explain.*                      Yes     No

Does this course involve academic units external to the originating college?                      Yes     No   
*If so, deans of all colleges involved must sign this form.*

**Attach a detailed description of proposed program to include the following:** background information, academic justification, student need and demand, listing of courses with credit hour requirements or deletions, facility requirements, and any other pertinent information.

Department Chair: *Lawrence D. Carey*                      Grad. Council: \_\_\_\_\_  
Digitally signed by Lawrence Carey  
DN: cn=Lawrence Carey, o=UAH,  
ou=ATS,  
email=chair@nsstc.uah.edu, c=US  
Date: 2016.10.14 09:20:47 -0500'

College Dean: *Emanuel A. Waddell Jr.*                      Graduate Dean: \_\_\_\_\_

College Curriculum Committee: *Emanuel A. Waddell Jr.* \_\_\_\_\_

Undergrad Curriculum Cmte: \_\_\_\_\_                      Provost: \_\_\_\_\_

**Acknowledgements from other units:**

Department Chair: \_\_\_\_\_                      College Dean: \_\_\_\_\_

## **Earth System Science Minors – Justification of Proposed Program**

***Attach a detailed description of proposed program to include the following: background information, academic justification, student need and demand, listing of courses with credit hour requirements or deletions, facility requirements, and any other pertinent information.***

Earth System Science Minor tracks were removed from the UAH Catalog in 2013/2014. Since that time, students from other departments continue to request minors or cognates in the following areas: Atmospheric Science, Geographic Information Systems / Remote Sensing, Natural Disasters Impacts & Policy, and Earth Ecosystems. In order to service these requests, minors in these following Earth System Science areas of study are proposed. Each one of these minor tracks in ESS has been tailored to take advantage of the diverse undergraduate course offerings in the Earth System Science program. These minor tracks will utilize existing course offerings and facilities. These minor tracks complement, and have been already requested by, students studying Physics, Biological Sciences, Engineering, Computer Science, Political Science, Sociology, and World Languages and Cultures.

### Minor in Geographic Information Systems / Remote Sensing

<b>Geographic Information Systems / Remote Sensing</b>		
<b>CRN</b>	<b>Course Name</b>	<b>CR</b>
<b>Required Courses</b>		
ESS 103	Environmental Earth Science	4
ESS 111	Weather, Climate, & Global Change	4
ESS 370	Remote Sensing	3
ESS 313	Geographic Information Systems	3
ESS 414	Geospatial Applications	3
<b>Elective Courses (Choose at least 4 credit hours from Elective List)</b>		
ESS 200-400	Choose from below	4
		21
<b>Elective Course List</b>		
ESS 212	Severe Weather Analysis	4
ESS 301	Earth & Atmos Physics	3
ESS 303	Physical & Class. Climate	3
ESS 305	Hydrology	3
ESS 321	Pollution Problems	3
ESS 402	Natural Disasters	3
ESS 408	Python for GIS	3
ESS 409	Computers Apps in Met	3
ESS 415	Advanced GIS	3