

PROGRAM SUMMARY

- **Credit Hours:** 120 hours
 - **Concentrations:** Yes. The degree can be General and diverse or focused into one of three Concentrations – Atmospheric, Environmental, or Hydrologic Sciences
 - **Declaring the Major:** GPA requirements, pre-requisite courses, application deadlines, pre-enrollment advising etc. Students may declare the major at any time before graduation.
 - **Advising (For the Major):** Each major is assigned an advisor from within the department. Majors will meet with this advisor before each subsequent semester to define the most advantageous course schedule for the student. An advising hold will be in place until the student completes their advising meeting, at which time it will be removed for registration.
 - **Advising (For General Education):** General Education course advising can be done within the department by your major advisor.
 - **Minimum Grades/GPA:** minimum GPA is 2.0
 - **Teacher Licensure:** No. Only in B.A. in Environmental Studies. Students preparing to teach high school earth science may become licensed by earning the B.A. in Environmental Studies degree with the Secondary Teaching Option. Licensure applications are the responsibility of the student and the Office of Student Academic Services in the College of Education.
 - **Evening Classes Available:** No
 - **Weekend Classes Available:** No
 - **Other Information:** GEO (Geology & Earth Science Organization); GTU (Gamma Theta Upsilon, which is an international honor society in geography); STORM (Student Organization of Meteorology).
 - **Contact(s):** Mr. Jake Armour, undergraduate coordinator for ESCI/GEOL, jarmour@uncc.edu; Ms. Jamie Strickland, undergraduate coordinator for GEOG, jstrickl@uncc.edu; Mr. Terry Shirley, undergraduate coordinator for METR, thsirle@uncc.edu
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PROGRAM REQUIREMENTS

Our Earth & Environmental Sciences degrees are for students who are interested in things like environmental sciences, streams and rivers, groundwater, soil, erosion, and the oceans. With a BS in Earth & Environmental Sciences you might consult for an environmental firm or work for a government agency like Fish and Wildlife, DOT, or the Forestry division. If you are interested in going on to graduate school or working in the industry as a scientist, you might choose to focus on one of the three concentrations within this B.S.: Atmospheric, Environmental, or Hydrologic Sciences. Requirements for these degrees include courses in topics like soil science, meteorology, hydrology, and environmental sciences.

Students considering a career as a licensed professional soil scientist should complete the Bachelor of Science degree with 15 hours of soil science course work as well as meet the work experience and examination requirements of the NC licensure board.

Extracurricular experiences are important components of the earth sciences program at UNC Charlotte. Our students hold internships at local geotechnical engineering and environmental consulting firms and are also involved in earth science research and field work in the subjects of geomorphology, soil science, GIS and hydrology. In addition, students at UNC Charlotte participate in regional and national professional organizations and conferences. Also available to students is participation in the Geology and Earth Science Organization (GEO), an official student chapter of the Association of Engineering and Environmental Geologists (AEG), which is aimed to help students network with geoscience professionals in the surrounding area and around the country.

Areas	Credit Hours	Description
Pre-Major/ Prerequisites	-	
Major	46	22 hours required courses in Earth Science (ESCI), Meteorology (METR), and Geology (GEOL) courses; 24 hours of electives within the department; and 18 hours of required extra departmental courses to complete the General Degree. See specific concentrations for variations in number of required and elective courses within the department.
General Education <i>(not satisfied by other major requirements)</i>	21-24	Hours do not include those requirements which are satisfied within the major. Transfer students with an associate's degree are exempt from most General Education, but must complete Writing Intensive requirement.
Related Work	18	Required extra departmental courses in chemistry, physics, mathematics and statistics.
Foreign Language	0-8	Foreign language: Proficiency at the introductory level (1202) by coursework, placement test, or high school coursework.
Electives	24-35	As needed to complete 120 hours total.
Total Credit Hours	120	

SUGGESTED PLAN OF STUDY – B.S. IN EARTH & ENVIRONMENTAL SCIENCES

Freshman Year					
Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
MATH 1241	Calculus I	3	X		
CHEM 1251	Principles of Chemistry	3	X		
CHEM 1251L	Principles of Chemistry Lab	1	X		
UWRT 1103	Writing and Inquiry in Academic Contexts (or UWRT 1104)	3	X		
ESCI 1101	Earth Science-Geography	3	X		
ESCI 1101L	Earth Science-Geography Lab	1			
<i>Spring Semester</i>					
MATH or STAT	MATH 1242 or STAT 12xx	3	X		
PHYS 1101	Introductory Physics	3			
PHYS 1101L	Introductory Physics Lab	1			
XXXX XXXX	Elective	3			
GEOL 1200	Introduction to Physical Geology	3			
GEOL 1200L	Introduction to Physical Geology Lab	1			

28 Credit Hours for Year

Sophomore Year					
Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
CHEM or PHYS	CHEM 1252 or PHYS 1102	3			
Laboratory	CHEM 1252L or PHYS 1102L	1			
G&ES Elective	Major Elective	3			Approved G&ES Dept. Elective
LBST 11XX	Arts and Society	3	X		
FORL 1201	Foreign Language Elective	3-4			Or demonstrate proficiency
XXXX XXXX	General Elective	3			
<i>Spring Semester</i>					
ESCI 2210	Field Methods in the Earth & Environmental Sciences	3			
ESCI 2101	Environmental Dilemma	3			
FORL 1202	Foreign Language Elective	3-4			Or demonstrate proficiency
LBST 2301	Critical Thinking and Communication	3	X		
Social Sci.	Social Science Elective	3	X		

31-33 Credit Hours for Year

Junior Year					
Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ESCI 3101	Global Environmental Change	3			
XXXX XXXX	General Elective	4			
XXXX XXXX	General Elective	3			
G&ES Elective	Major Elective	3			Approved G&ES Dept. Elective
LBST 2102	Global and Intercultural Connections (or LBST 2101 or 22XX)	3	X		
<i>Spring Semester</i>					
LBST 22XX	Ethical and Cultural Critique (or LBST 2101 or 2102)	3	X		
XXXX XXXX	Writing Intensive Elective	3	X	W	
G&ES Elective	Major Elective	3			Approved G&ES Dept. Elective
GEOG 3120	Fundamentals of GIS	4			
XXXX XXXX	General Elective	3			

32 Credit Hours for Year

Senior Year					
Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
G&ES Elective	Major Elective	3			Approved G&ES Dept. Elective
G&ES Elective	Major Elective	4	X	W	Approved G&ES Dept. Elective
XXXX XXXX	General Elective	4			
XXXX XXXX	General Elective	3			
<i>Spring Semester</i>					
ESCI 4600	Earth Science Seminar	1	X	O	
G&ES Elective	Major Elective	4			Approved G&ES Dept. Elective
G&ES Elective	Major Elective	4			Approved G&ES Dept. Elective
XXXX XXXX	General Elective	3			
XXXX XXXX	General Elective	3			

29 Credit Hours for Year

ADVISING RESOURCES

- General Education Requirements for ALL Students: ucol.uncc.edu/general-education
- Undergraduate Catalog: catalog.uncc.edu
- CentralAdvising website: advising.uncc.edu
- College of Liberal Arts & Sciences advising website: clas.uncc.edu/students/Advising-News/
- University Advising Center website: advisingcenter.uncc.edu

SUGGESTED PLAN OF STUDY – B.S. WITH CONCENTRATION IN ATMOSPHERIC SCIENCES

Freshman Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
MATH 1241	Calculus I	3	X		
CHEM 1251	Principles of Chemistry	3	X		
CHEM 1251L	Principles of Chemistry Lab	1	X		
UWRT 1103	Writing and Inquiry in Academic Contexts (or UWRT 1104)	3	X		
ESCI 1101	Earth Science-Geography	3	X		
ESCI 1101L	Earth Science-Geography Lab	1			
<i>Spring Semester</i>					
MATH or STAT	MATH 1242 or STAT 12xx	3	X		
PHYS 1101	Introductory Physics	3			
PHYS 1101L	Introductory Physics Lab	1			
XXXX XXXX	Elective	3			
GEOL 1200	Introduction to Physical Geology	3			
GEOL 1200L	Introduction to Physical Geology Lab	1			

28 Credit Hours for Year

Sophomore Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
CHEM or PHYS	CHEM 1252 or PHYS 1102	3			
Laboratory	CHEM 1252L or PHYS 1102L	1			
METR 3140	Introduction to Meteorology and Climatology	3			
LBST 11XX	Arts and Society	3	X		
FORL 1201	Foreign Language Elective	3-4			Or demonstrate proficiency
XXXX XXXX	General Elective	3			
<i>Spring Semester</i>					
ESCI 2210	Field Methods in the Earth & Environmental Sciences	3			
ESCI 2101	Environmental Dilemma	3			
FORL 1202	Foreign Language Elective	3-4			Or demonstrate proficiency
LBST 2301	Critical Thinking and Communication	3	X		
METR 3210	Atmospheric Thermodynamics	3			

31-33 Credit Hours for Year

Junior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
METR 3220	Physical Meteorology	3			
METR 3245	Synoptic Meteorology	4			
XXXX XXXX	General Elective	3			
XXXX XXXX	General Elective	1			
LBST 2102	Global and Intercultural Connections (or LBST 2101 or 22XX)	3	X		
<i>Spring Semester</i>					
LBST 22XX	Ethical and Cultural Critique (or LBST 2101 or 2102)	3	X		
XXXX XXXX	Writing Intensive Elective	3	X	W	
Social Sci.	Social Science Elective	3	X		
GEOG 3120	Fundamentals of GIS	4			
XXXX XXXX	General Elective	3			

30 Credit Hours for Year

Senior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ESCI 3101	Global Environmental Change	3			
ESCI 4170	Fundamentals of Remote Sensing	4			
G&ES Elective	Major Elective	3	X	W	Approved G&ES Dept. Elective
XXXX XXXX	General Elective	3			
XXXX XXXX	General Elective	3			
<i>Spring Semester</i>					
ESCI 4600	Earth Science Seminar	1	X	O	
G&ES Elective	Major Elective	4			Approved G&ES Dept. Elective
XXXX XXXX	General Elective	4			Approved G&ES Dept. Elective
XXXX XXXX	General Elective	3			
XXXX XXXX	General Elective	3			

31 Credit Hours for Year

ADVISING RESOURCES

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- University Advising Center website: advisingcenter.uncc.edu

SUGGESTED PLAN OF STUDY – B.S. WITH CONCENTRATION IN ENVIRONMENTAL SCIENCES

Freshman Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
MATH 1241	Calculus I	3	X		
CHEM 1251	Principles of Chemistry	3	X		
CHEM 1251L	Principles of Chemistry Lab	1	X		
UWRT 1103	Writing and Inquiry in Academic Contexts (or UWRT 1104)	3	X		
ESCI 1101	Earth Science-Geography	3	X		
ESCI 1101L	Earth Science-Geography Lab	1			
<i>Spring Semester</i>					
MATH or STAT	MATH 1242 or STAT 12xx	3	X		
CHEM 1252	General Chemistry II	3			
CHEM 1252L	General Chemistry II Lab	1			
XXXX XXXX	Elective	3			
GEOL 1200	Introduction to Physical Geology	3			
GEOL 1200L	Introduction to Physical Geology Lab	1			

28 Credit Hours for Year

Sophomore Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
BIOL 2120	General Biology I	3			
ESCI 2210	Field Methods in the Earth & Environmental Sciences	3			
ESCI 3101	Global Environmental Change	3			
LBST 11XX	Arts and Society	3	X		
FORL 1201	Foreign Language Elective	3-4			Or demonstrate proficiency
XXXX XXXX	General Elective	1			
<i>Spring Semester</i>					
BIOL 2130	General Biology II	3			
BIOL 2130L	General Biology II Lab	2			
ESCI 2101	Environmental Dilemma	3			
FORL 1202	Foreign Language Elective	3-4			Or demonstrate proficiency
LBST 2301	Critical Thinking and Communication	3	X		
XXXX XXXX	General Elective	1			

31-33 Credit Hours for Year

Junior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
BIOL 3144	Ecology	3			
BIOL 3144L	Ecology Lab	1	X	W	
G&ES Elective	Major Elective	3			Approved G&ES Dept. Elective
XXXX XXXX	General Elective	4			
LBST 2102	Global and Intercultural Connections (or LBST 2101 or 22XX)	3	X		
<i>Spring Semester</i>					
LBST 22XX	Ethical and Cultural Critique (or LBST 2101 or 2102)	3	X		
GEOL Elective	GEOL 3105 OR GEOL 3190	3			
G&ES Elective	Major Elective	3			Approved G&ES Dept. Elective
GEOG 3120	Fundamentals of GIS	4			
Social Sci.	Social Science Elective	3	X		

30 Credit Hours for Year

Senior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ESCI 3205	Water Resources	3			
GEOG 3190	Biogeography	3	X	W	
GEOG 4131	Environmental Modeling with GIS	4			
XXXX XXXX	General Elective	3			
XXXX XXXX	General Elective	3			
<i>Spring Semester</i>					
ESCI 4600	Earth Science Seminar	1	X	O	
GEOG 4215	Urban Ecology	3			
XXXX XXXX	General Electives	11			

31 Credit Hours for Year

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- University Advising Center website: advisingcenter.uncc.edu

SUGGESTED PLAN OF STUDY – B.S. WITH CONCENTRATION IN HYDROLOGICAL SCIENCES

Freshman Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
STAT 12xx	Statistics	3	X		
CHEM 1251	Principles of Chemistry	3	X		
CHEM 1251L	Principles of Chemistry Lab	1	X		
UWRT 1103	Writing and Inquiry in Academic Contexts (or UWRT 1104)	3	X		
ESCI 1101	Earth Science-Geography	3	X		
ESCI 1101L	Earth Science-Geography Lab	1			
<i>Spring Semester</i>					
Social Sci.	Social Science Elective	3	X		
CHEM or PHYS	CHEM 1252 or PHYS 1102	3			
Laboratory	CHEM 1252L or PHYS 1102L	1			
XXXX XXXX	Elective	3			
GEOL 1200	Introduction to Physical Geology	3			
GEOL 1200L	Introduction to Physical Geology Lab	1			

28 Credit Hours for Year

Sophomore Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
MATH 1241	Calculus I	3			
ESCI 2210	Field Methods in the Earth & Environmental Sciences	3			
ESCI 3105	Oceanography	3			
LBST 11XX	Arts and Society	3	X		
FORL 1201	Foreign Language Elective	3-4			Or demonstrate proficiency
XXXX XXXX	General Elective	1			
<i>Spring Semester</i>					
MATH Elective	MATH 1242 OR STAT 2223	3			
ESCI 2101	Environmental Dilemma	3			
FORL 1202	Foreign Language Elective	3-4			Or demonstrate proficiency
LBST 2301	Critical Thinking and Communication	3	X		
XXXX XXXX	Writing Intensive Elective	3	X	W	

31-33 Credit Hours for Year

Junior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ESCI 3101	Global Environmental Change	3			
ESCI 3105	Water Resources	3			
XXXX XXXX	General Elective	3			
XXXX XXXX	General Elective	2			
LBST 2102	Global and Intercultural Connections (or LBST 2101 or 22XX)	3	X		
<i>Spring Semester</i>					
LBST 22XX	Ethical and Cultural Critique (or LBST 2101 or 2102)	3	X		
ESCI 4155	Fluvial Processes	4			
GEOG 3120	Fundamentals of GIS	4			
XXXX XXXX	General Elective	3			
XXXX XXXX	General Elective	2			

30 Credit Hours for Year

Senior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ESCI 4140	Hydrologic Processes	4			
G&ES Elective	Major Elective	4			Approved G&ES Dept. Elective
XXXX XXXX	General Elective	4			
XXXX XXXX	General Elective	3			
XXXX XXXX	General Elective	1			
<i>Spring Semester</i>					
ESCI 4600	Earth Science Seminar	1	X	O	
ESCI 4222	Watershed Science	3			
GEOL 4145	Fundamentals of Hydrogeology	4	X	W	
XXXX XXXX	General Electives	7			

31 Credit Hours for Year

ADVISING RESOURCES

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- University Advising Center website: advisingcenter.uncc.edu