

# BACHELOR OF SCIENCE EARTH SYSTEM SCIENCE

Earth System Science is an interdisciplinary degree program that examines the earth, atmosphere, hydrosphere, cryosphere and space as a completely connected system. Changes in one of these parts of the Earth ultimately influences all others. The curriculum gives graduating students a balanced view of the Earth as a whole.

An Earth System Science degree prepares a diverse community of scientists, geologists, meteorologists, oceanographers, hydrologists, environmental scientists, public health scientists, educators and policy makers. Graduates of our program have geoscience knowledge that is needed to confront critical environmental issues facing society and to protect the Earth in a collective effort.

The program provides students with opportunities to conduct research on a large number of topics including environmental geology, coastal and ocean related topics, atmospheric science, remote sensing, geospatial information science and modern climate variability.

*College of  
Science,  
Engineering,  
and Technology*



## COURSE TYPE DESCRIPTIONS

General Education Core	GEC	<b>General Education Core (GEC)</b> courses are courses that every student must take in order to obtain a degree from Jackson State University. GEC courses are essential to every undergraduate degree at Jackson State University. Collectively, there are 30 credit hours of GEC course requirements.
General Education Pathway	PATH	<b>General Education Pathway (PATH)</b> courses are courses that are connected through interdisciplinary themes and are selected at the student's discretion to fulfill the general education curriculum. Through experiential learning and reflective writing, students will have the opportunity to integrate knowledge across courses, develop their skills and an enhanced sense of civic responsibility. Students select nine (9) hours from the pathway of choice. Each pathway concludes with a related one (1) credit hour a University Required (UR) course.
University Required	UR	<b>University Required (UR)</b> courses are courses that are specific to Jackson State University and are designed to integrate students within the Jackson State University community by promoting student success resources, strategies and high impact practices.
Degree Program Requirement	DPR	<b>Degree Program Required (DPR)</b> courses are courses that are required for completion of a degree program within the specified major.
Electives	DPE or GEL	<b>Electives</b> are courses selected at a student's discretion and provide opportunities for students to pursue their academic interests. There are two types of electives. <b>Degree Program Elective (DPE)</b> courses are elective courses that are partially restricted such that students select courses from a specified group of identified courses (e.g., departmental elective courses) to fulfill a particular requirement. <b>General Elective (GEL)</b> courses are courses that may be selected from any program for which the student has fulfilled the proper prerequisites.
Professional Concentrations	PC	<b>Professional Concentration (PC)</b> courses complement Degree Program Required courses and allow students to have a concentrated area of study within the major.



**COLLEGE OF  
SCIENCE, ENGINEERING, AND TECHNOLOGY  
EARTH SYSTEM SCIENCE**

Students must choose twelve (12) hours of restrictive elective course options from the list below:

Earth System Science Restrictive Elective Options		
COURSE	COURSE TITLE	CREDIT HOURS
BIO 103	Environmental Science	3
BIO 201	Introduction to Environmental Science	3
BIO 404	Environmental Science	3
BIO 412	Natural Resources and Conservation	3
BIO 414	Methods of Environmental Analysis	3
BIO 452	Advanced Principles of Environmental Science	3
BIO 481	Research in Environmental Science	3
CHEM 410	Environmental Chemistry	3
PHY 361	Mathematical Methods of Physics and Chemistry	3
PHY 363	Mathematical Methods of Physics and Chemistry II	3
PHY 380	Independent Study	3
PHY 480	Research Project	3
MET 303	Measurements and Obs.	3
CIV 222	Engineering Mechanics I	3
CIV 310	Engineering Surveying and CIVL Engineering Surveying Laboratory	3
CIV 380	Geotech. Engr. Laboratory	3
CSC 118	Computer Science I	3
CSC 119	Computer Science II	3
CSC 215	Data Analytics	3
CSC 245	Introduction to Bioinformatics	3
Comments:		

Student Name: \_\_\_\_\_

Expected Graduation Date: \_\_\_\_\_

J-Number: \_\_\_\_\_

**COLLEGE OF  
SCIENCE, ENGINEERING, AND TECHNOLOGY  
EARTH SYSTEM SCIENCE**

Advisor: \_\_\_\_\_

Pathway: \_\_\_\_\_

**FRESHMAN YEAR FALL 1ST SEMESTER**

COURSE	COURSE TITLE	CREDIT HOURS	COURSE TYPE	GRADE	SUCCESS MARKER/NOTE
UNIV 100	University Success	2	UR		
ENG 104	Composition I	3	GEC		
MATH 118	College Algebra & Trigonometry	5	GEC		
CHEM 141 & CHML 141	General Chemistry I & Lab	4	GEC		
	Humanities & Fine Arts Option	3	GEC		
	<b>TOTAL CREDIT HOURS</b>	<b>17</b>	<b>TERM GPA:</b>		

Comments: \_\_\_\_\_

**FRESHMAN YEAR SPRING 2nd SEMESTER**

COURSE	COURSE TITLE	CREDIT HOURS	COURSE TYPE	GRADE	SUCCESS MARKER/NOTE
ENG 105	Composition II	3	GEC		
CHEM 142 & CHML 142	General Chemistry II & Lab	4	GEC		
MATH 241	Calculus I with Lab	3	DPR		
BIO 114	Marine & Environmental Science	2	DPR		
	Pathway Option	3	PATH		
	<b>TOTAL CREDIT HOURS</b>	<b>15</b>	<b>TERM GPA:</b>		

Comments: \_\_\_\_\_

**SOPHOMORE YEAR FALL 1ST SEMESTER**

COURSE	COURSE TITLE	CREDIT HOURS	COURSE TYPE	GRADE	SUCCESS MARKER/NOTE
MATH 242	Calculus II	3	DPR		
PHY 211 & PHYL 211	General Physics I & Lab	4	DPR		
SCI 215	Global Change	3	DPR		
MET 200	Introduction to Meteorology	3	DPR		
	Pathway Option	3	PATH		
	<b>TOTAL CREDIT HOURS</b>	<b>16</b>	<b>TERM GPA:</b>		

Comments: \_\_\_\_\_

**SOPHOMORE YEAR SPRING 2ND SEMESTER**

COURSE	COURSE TITLE	CREDIT HOURS	COURSE TYPE	GRADE	SUCCESS MARKER/NOTE
UNIV 200	Civic Engagement	1	UR		
SCI 205 & SCIL 205	Earth & Space Science & Lab	4	DPR		
PHY 212 & PHYL 212	General Physics II & Lab	4	DPR		
	Restricted Elective	3	DPE		
	Pathway Option	3	PATH		
	<b>TOTAL CREDIT HOURS</b>	<b>15</b>	<b>TERM GPA:</b>		

Comments: \_\_\_\_\_

JUNIOR YEAR FALL 1ST SEMESTER					
COURSE	COURSE TITLE	CREDIT HOURS	COURSE TYPE	GRADE	SUCCESS MARKER/NOTE
SCI 310 & SCIL 310	Earth History & Lab	4	DPR		
PHY 241	Introduction to Astronomy	4	DPR		
BIO 111	General Biology I & Lab	4	DPR		
	Social & Behavioral Science Option	3	GEC		
	TOTAL CREDIT HOURS	15	TERM GPA:		

Comments:

JUNIOR YEAR SPRING 2ND SEMESTER					
COURSE	COURSE TITLE	CREDIT HOURS	COURSE TYPE	GRADE	SUCCESS MARKER/NOTE
MET 210	Climatology	3	DPR		
SCI 320	Sed. Environments	3	DPR		
SCI 325	Mineralogy Petrology	3	DPR		
	Social & Behavioral Science Option	3	GEC		
	Restricted Elective	3	DPE		
	TOTAL CREDIT HOURS	15	TERM GPA:		

Comments:

SENIOR YEAR FALL 1ST SEMESTER					
COURSE	COURSE TITLE	CREDIT HOURS	COURSE TYPE	GRADE	SUCCESS MARKER/NOTE
SCI 410	Oceanography	3	DPR		
SCI 415	Geochemistry	2	DPR		
SCI 420	Structural Geology	3	DPR		
SCI 430	Introduction to GIS and Remote Sensing	3	DPR		
	Restrictive Elective	3	DPE		
	TOTAL CREDIT HOURS	14	TERM GPA:		

Comments:

SENIOR YEAR SPRING 2ND SEMESTER					
COURSE	COURSE TITLE	CREDIT HOURS	COURSE TYPE	GRADE	SUCCESS MARKER/NOTE
SCI 425	Environmental Geology	2	DPR		
SCI 432	Hydrology	3	DPR		
SCI 480	Earth Science Seminar	1	DPR		
	Restricted Elective	3	DPE		
	Humanities & Fine Arts Option	3	GEC		
	Humanities & Fine Arts Option	3	GEC		
	TOTAL CREDIT HOURS	15	TERM GPA:		

Comments:

TOTAL HOURS: 122 REQUIRED

Candidates that transfer 12 or more hours of college credit are exempt from UNIV 100: University Success; however, the student must take 2 hours of general electives to replace UNIV 100.

Student Signature: \_\_\_\_\_

Advisor Signature: \_\_\_\_\_