

Mathematics and Physical Sciences

B.S. in Earth Science: Climate Science Concentration

Program Description

The Climate Science concentration of the Bachelor of Science in Earth Science degree builds skills and knowledge related to collecting, analyzing and interpreting climate data and understanding long-term trends. Through this program, students explore atmospheric processes, climate change issues and factors that influence climate systems.

Delivery Mode

Traditional (on campus)

Curriculum

The following eight-semester schedule of courses provides a recommended framework for completing this program of study in four years.

Course	Credits
Freshman Year	
First Semester	17
CIS 120 Problem Solving and Programming	3
EAS 104 Intro to Meteorology	4
ENG 101 English Composition I	3
MAT 281 Calculus I	3
UNI 100 First-Year Seminar	1
General Education OR Free Elective Course	3
Second Semester	16
COM 101 Oral Communication	3
EAS 142 Introduction to Climate Science	3
EAS 163 Intro to Oceans and Climate	3
PHY 101 College Physics I	4
MAT 282 Calculus II	3
Sophomore Year	
Third Semester	16
EAS 245 Weather Analysis and Forecasting I	4
GEO 220 Geography of North America	3
MAT 215 Statistics	3
PHY 202 College Physics II	4

Mathematics and Physical Sciences

Course	Credits
General Education OR Free Elective Course	3
Fourth Semester	17
EAS 150 Introduction to Geology	4
EAS 300 Natural Hazards	3
GIS 311 Geographic Information Systems	3
PHS 137 Envi Chemistry	4
Any Recommended OR Free Elective Course	3
Junior Year	
Fifth Semester	15
EAS 323 Atmos Instrument and Measurement	3
EAS 369 Climate Dynamics	3
EAS 419 Applied Climatology	3
Any Recommended OR Free Elective Courses	6
Sixth Semester	15
EAS 414 Synoptic Climatology	3
EAS 431 Digital Media for Weather and Climate	3
Any Recommended OR Free Elective Courses	9
Senior Year	
Seventh Semester	15
EAS 452 Atmos Thermodynamics and Radiation	3
EAS 469 Global Climate Change	3
Any Recommended OR Free Elective Courses	9
Eighth Semester	12
EAS 465 Seminar in Atmospheric Science	3
Any Recommended OR Free Elective Courses	9

Mathematics and Physical Sciences

Course	Credits
Total	120

Program Notes

- 42 credits of advanced coursework at the 300- or 400-level are required.

Recommended Electives

(at least 12 credits)

- **BIO 248** General Ecology (3 credits)
- **EAS 200** Historical Geology (3 credits)
- **EAS 303** Hydrology (3 credits)
- **EAS 316** Subsurface Geology Land Mgmt (3 credits)
- **EAS 323** Atmos Instrument and Measurement (3 credits)
- **EAS 342** Dynamic Meteorology I (3 credits)
- **EAS 346** Tropical Meteorology & Climate (3 credits)
- **EAS 442** Dynamic Meteorology II (3 credits)
- **EAS 453** Cloud Physics (3 credits)
- **ENS 101** Introduction to Environ Science (3 credits)
- **ENS 399** Conservation Biology (3 credits)
- **ENS 440** Environ Pollution Control (3 credits)
- **GIS 350** Remote Sensing of Environment (3 credits)
- **GIS 413** Environmental Applications GIS (3 credits)
- **MAT 360** Non-Parametric Statistics (3 credits)

Program Webpage

<https://www.calu.edu/academics/undergraduate/bachelors/climate-science/index.aspx>