



# DRIVING CLIMATE STUDIES CURRICULUM THROUGH A HIGH TRAFFIC TEXAS COMMON COURSE NUMBERING SYSTEM ENVIRONMENT



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## Historical Infrastructure

### College History

Founded in 1978, Brookhaven College is one of the seven colleges of the Dallas County Community College District. Brookhaven College is a diverse, progressive educational environment enriching the lives of students, employees and community members. Many students each year successfully transfer to four-year universities, while others enter directly into the workforce with a technical degree, certificate or skills award. Recent enrollments included 12,900 credit and more than 8,000 continuing education, or noncredit, students. The Core Curriculum allows students to complete foundational courses and take advantage of affordable tuition before transferring to a four-year university, guaranteeing the transfer of the Core to any public university in Texas.



Brookhaven College

DALLAS COUNTY COMMUNITY COLLEGE DISTRICT



### Fall 1978 Science Classes Offered

Discipline/Course	Title	Discipline/Course	Title
<b>BIOLOGY</b>		<b>ECOLOGY</b>	
Biology 101	General Biology	Ecology 291	Man and His Environment II
Biology 102	General Biology	<b>GEOGRAPHY</b>	
Biology 115	Biological Science	Geography 101	Physical Geography
Biology 116	Biological Science	Geography 102	Economic Geography
Biology 203	Intermediate Botany	Geography 103	Cultural Geography
<b>Biology 216</b>	<b>General Microbiology</b>	<b>GEOLOGY</b>	
Biology 221	Anatomy and Physiology I	Geology 101	Physical Geology
Biology 222	Anatomy and Physiology II	Earth Sciences 117	Earth Science
Biology 224	Environmental Biology	<b>PHYSICS</b>	
Biology 226	Genetics	Physics 111	Introductory General Physics
<b>CHEMISTRY</b>		Physics 112	Introductory General Physics
Chemistry 101	General Chemistry	Physics 115	Physics for Liberal Arts
Chemistry 102	General Chemistry	Physics 116	Physics for Liberal Arts
Chemistry 115	General Chemistry	Astronomy 101	Desc Astronomy
Chemistry 116	General Chemistry	Physical Science 119	Physical Science
Chemistry 201	Organic Chemistry I		
Chemistry 202	Organic Chemistry II		
Chemistry 203	Quantitative Analysis		

### 1978 Geology Courses/Descriptions

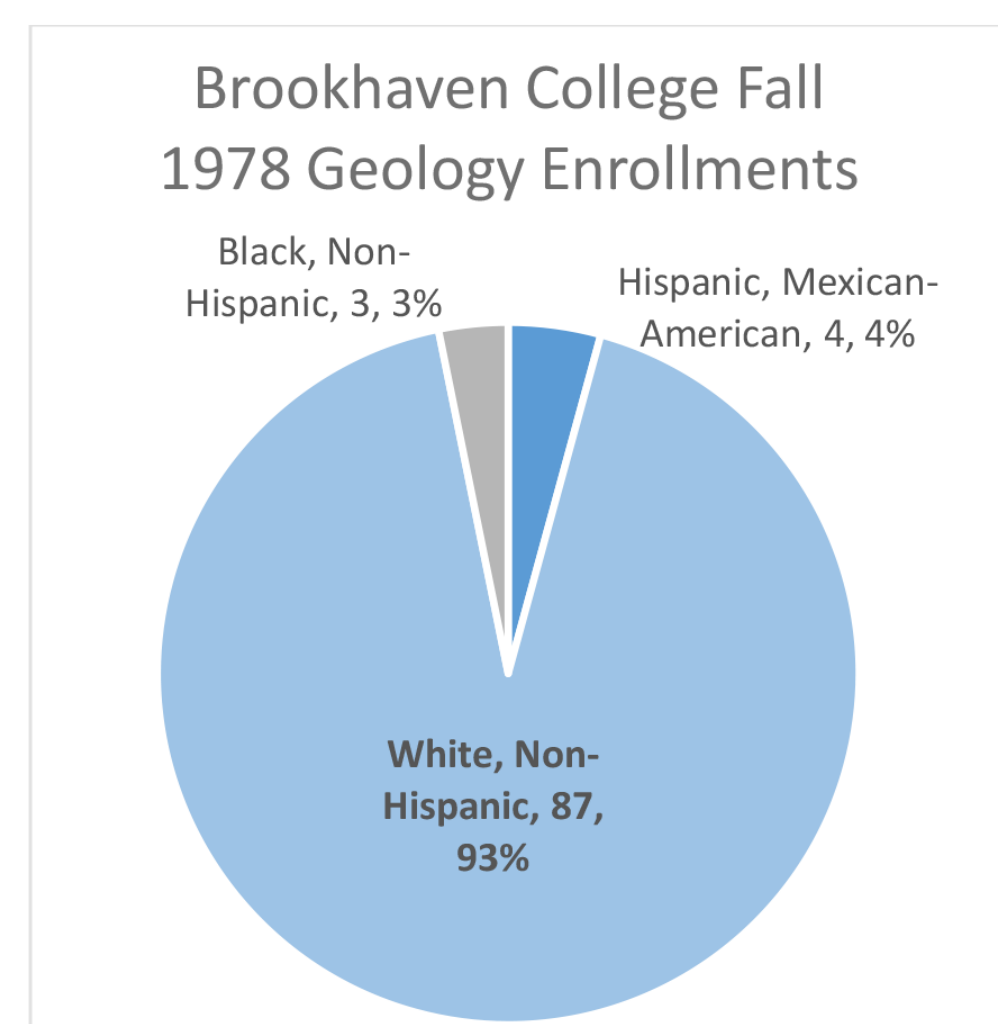
**Earth Science 117, Earth Science**, was a 4-credit hour course with 3 hours of lecture and 3 hours of lab. The course description in the catalog was as follows.

The course encompasses the interaction of the Earth sciences and man's physical world. Geology, astronomy, meteorology and space science are emphasized through the application of selected principles and concepts of the applied sciences. The course is directed toward the non-science major.

**Geology 101, Physical Geology**, was a 4-credit hour course with 3 hours of lecture and 3 hours of lab. The course description in the catalog was as follows.

Study of the Earth materials and processes for science and non-science majors. Includes introduction to geochemistry, geophysics and examinations of the Earth's interior, magnetism, setting in space, minerals, rocks, structure and geologic process.

### 1978 Geology Ethnicity Statistics



Brookhaven College Fall 1978

Ethnicity	ES-117	GEO-101	Total
Black, Non-Hispanic	2	1	3
Hispanic, Mexican-American		4	4
White, Non-Hispanic	21	66	87
<b>Grand Total</b>	<b>23</b>	<b>71</b>	<b>94</b>

### Texas Common Course Numbering System/ Academic Course Guide Manual

- All decisions, processes, and changes regarding higher education flows through the Texas Higher Education Coordinating Board
- Grassroots idea among junior/community colleges and universities in Texas
- Provides uniform course codes for all post secondary institutions
- Course code index proposed and adopted by several of those institutions during the mid-1970s
- Shared numbering system in 1989 coordinated the THECB's Academic Course Guide Manual (ACGM), lower division branch of TCCNS
- 1991 conference led most community colleges in the state to convert their course numbers to follow that of the TCCNS
- Statewide acceptance of the TCCNS occurred in 1993.
- The Dallas County Community College District converted all of its course codes to match the TCCNS/ACGM in 1995.
- Lower Division ACGM remains mandate today for what courses community colleges offer
- Provides lower level institutions, like Brookhaven College, a pre-approved listing of courses that may be offered for ease of transferability and without the need to request funding

## Current Pathways

### Courses and Descriptions

**GEOL 1401 Earth Science for Non-Science Majors I** – This course is an introductory survey of physical geology, historical geology, oceanography, meteorology, and astronomy. It relates the interaction of the earth sciences to the physical world.

**GEOL 1402 Earth Science for Non-Science Majors II** – This course continues the study of the interaction of the earth sciences and the physical world, focusing on natural resources, natural hazards, and climate variability.

**GEOL 1403 Physical Geology** – It is an integrated study of earth materials and processes and interactions between solid earth, oceans, atmosphere, and biosphere. Included is an introduction to plate tectonic theory, geochemistry, geophysics, hydrology, geomorphology, and the earth's setting in space.

**GEOL 1404 Historical Geology** – It is a study of earth materials and processes within a developmental time perspective. Topics include: fossil taxonomy and preservation, stratigraphy, geologic time scale, relative and absolute age dating, geologic maps, plate tectonics, astronomy, events during each major interval of the geologic time scale, glaciation, evolution, and energy.

**GEOL 1405 Environmental Science** – This course covers the earth as a habitat and the interrelationships between humans and the physical environment. Topics include: geologic factors in land use planning, hydrology, geologic hazards, waste disposal and pollution, conservation, climate, energy, geologic resource development, population dynamics, and issues in environmental geosciences.

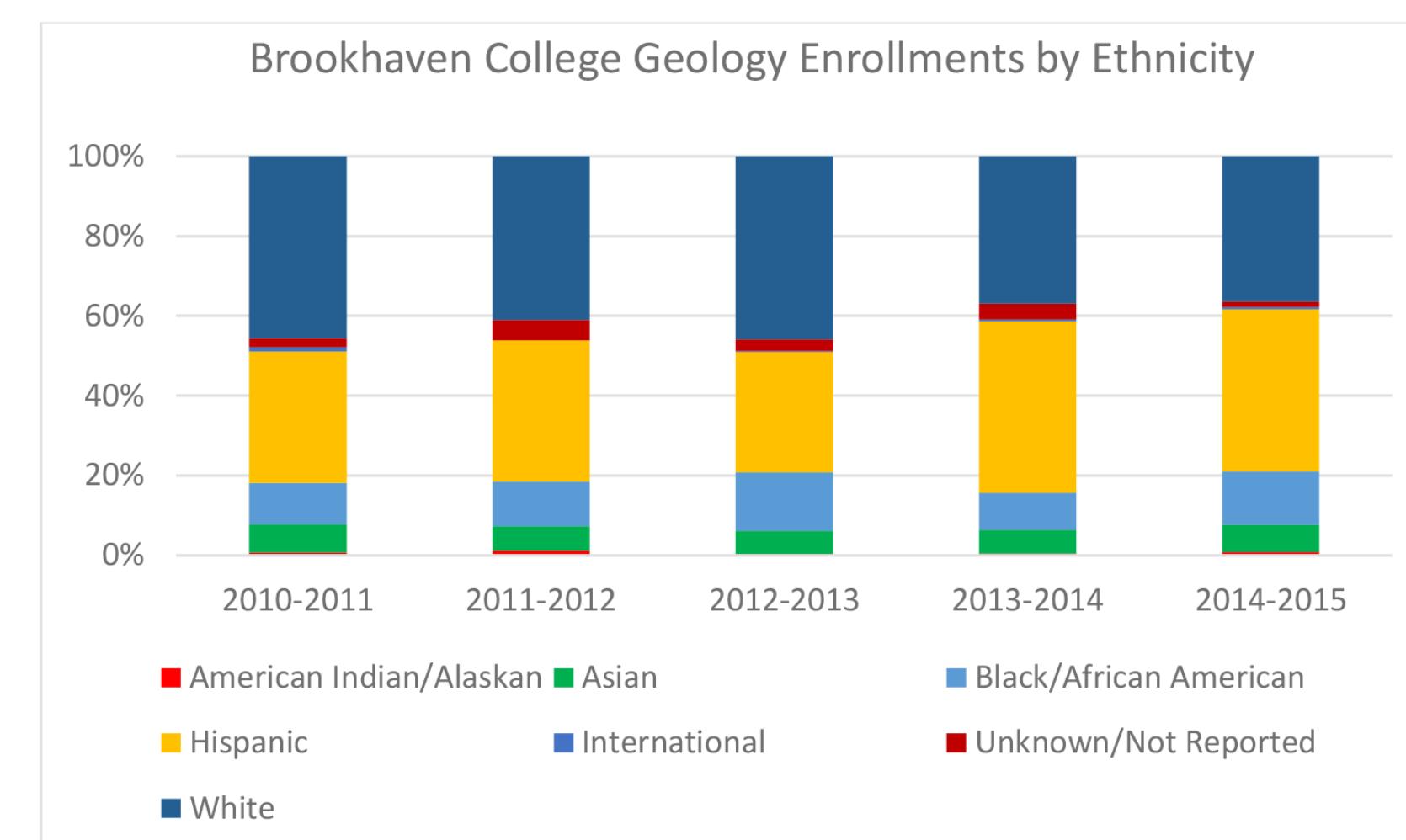
**GEOL 1445 Oceanography** – This is an introductory study of the geological, chemical, physical and biological characteristics and processes of earth's oceans. Topics include the formation of ocean basins and geologic materials, composition of seawater, currents, waves and tides, oceanic interaction with the atmosphere, marine pollution, marine resources, and life in the ocean.

**GEOL 1447 Meteorology** – This course will survey weather phenomena, climate, and the processes that control them. Topics covered include composition and structure of the atmosphere, interaction of the ocean and the atmosphere, climate, hazards of severe weather, and methods of forecasting weather.



### 2010-2015 Geology Ethnicity Statistics

	American Indian/Alaskan	Asian	Black/African American	Hispanic	International	Unknown/Not Reported	White
2010-2011	0.6%	7.1%	10.4%	32.9%	1.0%	2.3%	45.6%
2011-2012	1.2%	6.1%	11.2%	35.4%	0.0%	5.2%	41.0%
2012-2013	0.3%	5.8%	14.8%	30.1%	0.3%	2.9%	45.9%
2013-2014	0.5%	5.8%	9.3%	43.0%	0.5%	4.0%	36.9%
2014-2015	0.8%	6.9%	13.4%	40.6%	0.6%	1.3%	36.4%
5-year average	0.7%	6.4%	11.8%	36.6%	0.5%	3.0%	41.0%



Dallas County Ethnicity



### TCCNS/ACGM Challenge for Climate Studies Curriculum

- The ACGM is the Lower Division guide for all courses currently allowed on the community college level of higher education in Texas.
- Among all courses currently labeled as Geology, in which Climate Studies would fall, there is no course code to allow a separate Climate Studies course.
- Updates on the ACGM are done on a yearly basis.
- Courses are offered based on varying factors including, but not limited to, the following: need for the course, transferability to the university level, enrollment opportunity, etc.
- Adding a new course/course code is a difficult and time-consuming process (discussed in the next column).

## Alternative Routes Ahead

### Applying for a New Course Code

In order to receive funding, a course offered must be listed in the Lower-Division ACGM Manual.

- Brookhaven College's Geology Department has expressed interest in applying for a new code for climate studies.
- Coordinating Board staff/ACGM Advisory Committee considers courses for placement in the ACGM.
- Institutions requesting a new course must fill out a form to submit to the committee to show a unique need.



Information for consideration may include the following:

- Unique need approval history
- Applicability to baccalaureate degree plans
- Letters of support from at least 5 colleges
- Application to the TCCNS
- Frequency and level of similar course offerings
- Course description and learning outcomes

The committee will accept or reject the request. If rejected the course may still be offered on a unique needs basis.

### Using Current Course Options

**GEOL 1401** – Current faculty have agreed to substitute the climate portion of the current textbook with the more direct/updated Current Climate Studies/Climate Studies investigations from the AMS.

**GEOL 1402** - This course has a climate variability element. While no current commitment has been gained from faculty in the course, it will be pursued in Spring 2016.

**GEOL 1403** – Current faculty have agreed to add a discussion board thread/topic regarding Current Climate Studies as a focus on several weeks in the course. A portion of the student's grade will come from postings.

**GEOL 1405** - This course has a climate chapter. While no current commitment has been gained from faculty in the course, it will be pursued in Spring 2016.

**GEOL 1447** – As the meteorology (AMS Weather Studies) faculty member at Brookhaven, I plan to use various elements of Climate Studies as the lab portion of this course's grade in the summer semester. This will be experimental.

**GEOL 2289/2389** – This course varies in title, description and by semester. It presents a unique option for creating a climate "Academic Cooperative" as an elective in which students would partner with a local company involved in climate initiatives.

### Workforce and Continuing Education

The WCE Division is uniquely qualified and prepared to be an innovative and responsive partner in our community.

As it stands, there is only once science class offered in this division: Chemistry Basics.

- "Weather, Climate and Sustainability" has been proposed as a course, combining elements from AMS Weather Studies, AMS Climate Studies, and DCCCD's current sustainability practices and policies.
- Communication between Sustainable Brookhaven and the Workforce and Continuing Education Division is underway

The process of creating a new non-credit course to include Climate Studies

- Completing a Course Proposal Form
- Meeting arranged between faculty, program manager, and curriculum developer
- Variables of setting up the course are discussed
- If variable are met, a course outline and standard syllabus are created



### Service Learning Possibilities

#### 6th Annual DCCCD Sustainability Summit, April 15, 2016

DCCCD  
**Sustainability Summit**



The Dallas County Community College District's annual Sustainability Summit is a public, one day event with speakers, vendors and exhibitions focusing on green practices for daily living.

- GEOL 1401 and GEOL 1447 students create a sustainability presentation project to create a sustainability presentation based on Climate Studies
- Discussed with various faculty and the sustainability summit committee.
- All are in agreement to move forward on this venture.

#### Earth Day Texas, April 22-24, 2016

Earth Day Texas is a Texas-based nonprofit organization focused on environmental education. It is an annual event that provides forums for businesses, nonprofits, academic institutions, and government agencies in which to network and engage the public in environmental topics.

- Students volunteer in shifts to present on environmental topics
- Geology students present regarding climate studies as extra credit or a lab
- Similar presentations have occurred at past Earth Day events
- No focus specifically on climate studies in the past



### Conclusions

- Brookhaven College is a Minority Serving Institution. Since its Geology Department's creation in 1978, the number of minority students has greatly increased in the department to near or greater than current Dallas County statistics. No statistically significant difference is seen in minority enrollment over a five-year trend.

- The geology department now offers seven courses, several of which offer minor climate curriculum embedded within them.
- There is currently no course code for offering a stand-alone Climate Studies course. This is governed by the TCCNS/ACGM.

- Plans are in progress to proceed without a course, using alternative methods to implement climate studies in current courses and in creative manners elsewhere.

- Ultimately, Brookhaven College has expressed interest in pursuing the creation of a new course code that would allow Climate Studies to be added to the ACGM manual and offered as a separate and new course in the geology department. As mentioned, this will take great time and effort.