

**Fiscal Unit/Academic Org** Geography - D0733  
**Administering College/Academic Group** Social And Behavioral Sciences  
**Co-administering College/Academic Group**  
**Semester Conversion Designation** Converted with minimal changes to program goals and/or curricular requirements (e.g., sub-plan/specialization name changes, changes in electives and/or prerequisites, minimal changes in overall structure of program, minimal or no changes in program goals or content)  
**Current Program/Plan Name** Geography  
**Proposed Program/Plan Name** Geography - GEOG-BS  
**Program/Plan Code Abbreviation** GEOG-BS  
**Current Degree Title** Bachelor of Science

**Credit Hour Explanation**

Program credit hour requirements		A) Number of credit hours in current program (Quarter credit hours)	B) Calculated result for 2/3rds of current (Semester credit hours)	C) Number of credit hours required for proposed program (Semester credit hours)	D) Change in credit hours
Total minimum credit hours required for completion of program		53	35.3	32	3.3
Required credit hours offered by the unit	Minimum	38	25.3	24	1.3
	Maximum	53	35.3	32	1.3
Required credit hours offered outside of the unit	Minimum	0	0.0	0	0.0
	Maximum	15	10.0	11	0.0
Required prerequisite credit hours not included above	Minimum	20	13.3	18	4.7
	Maximum	30	20.0	23	4.7

**Explain any change in credit hours if the difference is more than 4 semester credit hours between the values listed in columns B and C for any row in the above table**

NOTE: Credit hours "offered by the unit" include courses in Geography and in Atmospheric Sciences.  
 RATIONALE: Minimum prerequisite credit hour requirements are slightly higher due to repackaging of math sequence.

**Program Learning Goals**

Note: these are required for all undergraduate degree programs and majors now, and will be required for all graduate and professional degree programs in 2012. Nonetheless, all programs are encouraged to complete these now.

- Program Learning Goals**
- Students acquire fundamental concepts of geography
  - Students achieve familiarity with methods used in geography
  - Students can communicate geographical concepts and methods orally, visually, and/or in writing
  - Students apply geographical concepts and methods in experiential settings, including internships, field work, study abroad, research, and through international experience.

**Assessment**

Assessment plan includes student learning goals, how those goals are evaluated, and how the information collected is used to improve student learning. An assessment plan is required for undergraduate majors and degrees. Graduate and professional degree programs are encouraged to complete this now, but will not be required to do so until 2012.

**Is this a degree program (undergraduate, graduate, or professional) or major proposal? Yes**

**Does the degree program or major have an assessment plan on file with the university Office of Academic Affairs? Yes**

Summarize how the program's current quarter-based assessment practices will be modified, if necessary, to fit the semester calendar.

For our assessment, we use a variety of direct and indirect methods, none of which depend upon whether the program is run under quarters or semesters. As a result, we do not anticipate any changes to our assessment practices under the semester system.

## Program Specializations/Sub-Plans

If you do not specify a program specialization/sub-plan it will be assumed you are submitting this program for all program specializations/sub-plans.

**Program Specialization/Sub-Plan Name**                      Climate and Physical Geography (Existing)  
**Program Specialization/Sub-Plan Goals**

## Pre-Major

Does this Program have a Pre-Major? No

## Attachments

- Attachment 2\_Undergrad CPG\_110210.docx: Attachment 2  
*(Program Rationale Statement. Owner: Pernik, Juliana Christine)*
- Attachment 3\_Undergrad CPG\_110210.docx: Attachment 3  
*(Curricular Map(s). Owner: Pernik, Juliana Christine)*

## Comments

## Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Pernik, Juliana Christine	09/30/2010 03:17 PM	Submitted for Approval
Revision Requested	Mansfield, Becky Kate	09/30/2010 03:25 PM	Unit Approval
Submitted	Pernik, Juliana Christine	09/30/2010 04:07 PM	Submitted for Approval
Approved	Mansfield, Becky Kate	09/30/2010 04:11 PM	Unit Approval
Revision Requested	Mumy, Gene Elwood	10/14/2010 12:04 PM	College Approval
Submitted	Pernik, Juliana Christine	11/02/2010 11:43 AM	Submitted for Approval
Approved	Mansfield, Becky Kate	11/02/2010 12:47 PM	Unit Approval
Approved	Vanarsdale, Sonya Renee	11/02/2010 02:37 PM	College Approval
Pending Approval	Hanlin, Deborah Kay Vankeerbergen, Bernadette Chantal Meyers, Catherine Anne Jenkins, Mary Ellen Bigler Nolen, Dawn	11/02/2010 02:37 PM	ASCCAO Approval

## Undergraduate CPG Semester Proposal – Attachment 2

To: OAA

Date: 6/14/2010

### Cover Letter for Proposals from the Department of Geography

This is the transmittal cover letter to the Office of Academic Affairs that reflects the efforts by the Department of Geography under Quarter to Semester Conversion.

The department used a series of committee and special purpose task forces to review programs and courses. Having recently proposed substantial revisions to our majors, we were in relatively good position to begin the Q to S process.

There has been a tremendous effort to accomplish these planned changes, with commendable input from Professor Becky Mansfield (Undergraduate), Jay Hobgood (Atmospheric Science), and Darla Munroe (Graduate). The graduate level documents are still being finalized.

The department recommends approval of these changes, which by and large are converted with minimal changes to program goals and/or curricular requirements at the undergraduate level. A recently approved set of revisions to the Majors has been incorporated into our planned semester version. *[There are minimal name changes, changes in electives and/or prerequisites, minimal changes in overall structure of program, minimal or no changes in program goals or content.]*

The graduate courses are minimally changed, but there is expected to be a complete re-write of our graduate manual to organize these classes in a way that conveys greater advisor flexibility. The department will seek appropriate approval for any substantive track or programs changes built around our existing graduate courses.

### The following are the programs in the department:

#### a. Undergraduate bachelor's degree programs and/or majors

1. Environment and Society (BA)
2. Climatology and Physical Geography Specialization (BS)
3. Spatial Analysis (BS)
4. Urban, Regional and Global Studies (BA)
5. Geographic Information Science (BS) Tagged Major, pending
6. Atmospheric Science (BS) Tagged Major, pending

#### b. Undergraduate minors

A minor in geography is available to any Arts and Sciences student who is not already majoring in geography.

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The omission of a matching minor for the two new majors (5-6 above) was a technical oversight and we plan to correct this once the majors themselves are approved. Even without that correction, a student wishing to minor in areas related to atmospheric science or geographic information science has similar options in cognate fields (items 2 & 3: Climatology and Physical Geography Specialization (BS) and Spatial Analysis (BS) respectively).

### c. Undergraduate associate degree programs

n/a

### d. Graduate degree programs

1. M.A. in Geography
2. Ph.D. in Geography
3. M.S. in Atmospheric Science
4. Ph.D. in Atmospheric Science

### e. Graduate minors

n/a

### f. Graduate certificate programs

n/a

### g. Graduate interdisciplinary specializations

Graduate Interdisciplinary Specialization in Geo-Spatial Data Analysis.

Since the interdisciplinary specialization requires elements from many other degree programs, we plan to finalize these syllabi and arrangements after the initial round of graduate degree courses has been screened.

### h. Professional degree programs

n/a

### i. Combined programs (e.g., BS/MS, Ph.D./ MD)

n/a

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For the record, no programs are being withdrawn. The details in the balance of the template are incorporated by reference, and are being revised to ensure technical compliance with the templates.

Thank you for attention to these proposals

Morton O'Kelly  
Professor & Chair  
Department of Geography

## Program Rationale

The Geography major (all four specializations) was last revised in 2010 (approved in January), with implementation in spring term. Proposed in autumn 2008, this extensive revision was the result of extensive consultation with faculty and students, and responds to suggestions from an external review in 2006. Because we are only now implementing this revised program, very few changes are being made to the curriculum for semesters except where necessary to address sequencing concerns and ensure timely graduation for our students.

For the climate studies path of this specialization, there are no changes for semesters. For the physical geography path, we moved one course from the required core to the electives, added a choice of methods courses to the required core, and slightly revised the list of electives.

## List of semester courses in the program

Students choose one of two paths: Climatic Studies or Physical Geography. Courses for both are in the table below.

Segment of Major	Semester #	Semester course name	Units
<b>Required Prerequisites or Supplements to the Major</b>			
<b>1. For Climatic Studies path (23 hours)</b>			
	MATH 1252	Calculus 1	5
	MATH 1252	Calculus 2	5
	PHYS 1250	Intro to Calculus-based Physics 1	5
	PHYS 1251	Intro to Calculus-based Physics 2	5
	STAT 2450	Introduction to Statistical Analysis	3
<b>2. For the Physical Geography path (18 hours)</b>			
	MATH 1251	Calculus 1	5
	MATH 1252	Calculus 2	5
	PHYS 1250	Intro to Calculus-based Physics 1	5
	STAT 2450	Introduction to Statistical Analysis	3
<b>Required courses</b>			
<b>1. For Climatic Studies path (17 hours)</b>			
	AS 2940 OR GEOG 5900	Basic Meteorology <u>OR</u> Climatology	3
	5921	Boundary Layer Climatology	3
	5922	Microclimatological Measurements	3
	AS/GEOG 5940	Synoptic Meteorology Laboratory	2
	5941	Synoptic Analysis and Forecasting	3
	5942	Severe Storm Forecasting	3
<b>2. For Physical Geography path (19-20 hours)</b>			
	2960 OR 2800	Introduction to Physical Geography (4 credits) <u>Or</u> Physical Geography and Environmental Issues (3 credits)	3 or 4
	3980	Biogeography: An Introduction to Life on Earth	3
	3900 OR 3901H	Global Climate Change: Causes and Consequences OR Global Climate and Env't'l Change	3
	AS 2940 OR	Basic Meteorology OR Climatology	3

Undergraduate CPG Semester Proposal – Attachment 2

	GEOG 5900		
	5100 OR 5200 OR 5220	Quantitative Geographical Methods OR Elements of Cartography OR Fundamentals of Geographic Information Systems	3
Successor to	ES	Geomorphology	4
<b>Electives</b>			
<b>1. For Climatic Studies path. Choose five of the following courses (15-16 hours)</b>			
	2960 OR 2800	Introduction to Physical Geography <u>OR</u> Physical Geography and Environmental Issues	3
	3900 OR 3901H	Global Climate Change: Causes and Consequences OR Global Climate and Env't'l Change	3
	3980	Biogeography: An Introduction to Life on Earth	3
	AS 5901	Climate System Modeling: Basics and Applications	3
	AS 5950	Atmospheric Thermodynamics	3
	AS 5951	Dynamic Meteorology I	3
	AS 5952	Dynamic Meteorology II	3
	3882	Integrated Earth Systems: Confronting Global Change	3
	5200	Elements of Cartography	3
	5220	Fundamentals of Geographic Information Systems	3
	4101	Undergraduate Research and Professionalization Seminar	3
Successor to	ES	Principles of Oceanography	3
Successor to	ES	The Cryosphere Earth Sci (3 credits) <u>or</u> Glaciers and Landscapes Earth Sci (4 credits)	3 or 4
<b>2. For Physical Geography path. Choose five of the following courses (at least three must be from Geography or Atmospheric Sciences) (15-16 hours):</b>			
<b>Note that some courses may have prerequisites beyond those required for the major</b>			
	5200	Elements of Cartography	3
	5201	Computer Cartography and Geographic Visualization	3
	5220	Fundamentals of Geographic Information Systems	3
	5221 OR 5222 OR 5223	Spatial Simulation and Modeling in GIS; GIS Applications in Social Science and Business; Design and Implementation of GIS	3
	5270	Geographic Applications in Remote Sensing	3
	4101	Undergraduate Research and Professionalization Seminar	3
		One Human Geography course 4000-level or higher	3
	5921	Boundary Layer Climatology	3
	5922	Microclimatological Measurements	3
	AS/GEOG 5940	Synoptic Meteorology Laboratory	3
	5941	Synoptic Analysis and Forecasting	3
	5942	Severe Storm Forecasting	3
	AS 5901	Climate System Modeling: Basics and Applications	3
	AS 5950	Atmospheric Thermodynamics	3

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	AS 5951	Dynamic Meteorology I	3
	AS 5952	Dynamic Meteorology II	3
	3882	Integrated Earth Systems: Confronting Global Change	3
Successor to	ES	Principles of Oceanography	3
Successor to	ES	Water in the Basin Hydrologic Cycle	3
Successor to	ES	The Cryosphere	3
Successor to	ES	Glaciers and Landscapes	4

## Curriculum Advising Sheets – Semester – Climatic Studies

<b>Climatic Studies Advising Sheet, CPG Specialization SEMESTERS</b>			
<b>Segment of Major Program and Course Number</b>	<b>Course name</b>	<b>Credit hours</b>	<b>Grade</b>
<b>Required Prerequisites or Supplements to the Major</b>			
Math 1251	Calculus 1	5	
Math 1252	Calculus 2	5	
Physics 1250	Introduction to Calculus-Based Physics 1	5	
Physics 1251	Introduction to Calculus-based Physics 2	5	
Statistics 2450	Introduction to Statistical Analysis	3	
<b>Required courses (17 hours)</b>			
AS 2940 OR GEOG 5900	Basic Meteorology <u>OR</u> Climatology	3	
5921	Boundary Layer Climatology	3	
5922	Microclimatological Measurements	3	
AS/GEOG 5940	Synoptic Meteorology Laboratory	2	
5941	Synoptic Analysis and Forecasting	3	
5942	Severe Storm Forecasting	3	
<b>Electives. Choose five of the following courses (15-16 hours)</b>			
2960 OR 2800	Introduction to Physical Geography <u>OR</u> Physical Geography and Environmental Issues	3	
3900 OR 3901H	Global Climate Change: Causes and Consequences OR Global Climate and Env't'l Change	3	
3980	Biogeography: An Introduction to Life on Earth	3	
AS 5901	Climate System Modeling: Basics and Applications	3	
AS 5950	Atmospheric Thermodynamics	3	
AS 5951	Dynamic Meteorology I	3	
AS 5952	Dynamic Meteorology II	3	
3882	Integrated Earth Systems: Confronting Global Change	3	
5200	Elements of Cartography	3	
5220	Fundamentals of Geographic Information System	3	
4101	Undergraduate Research and Professionalization Seminar	3	
Successor to ES	Principles of Oceanography	3	
Successor to ES	The Cryosphere Earth Sci (3 credits) <u>or</u> Glaciers and Landscapes Earth Sci (4 credits)	3 or 4	
	<b>Total Program Hours</b>		
	<b>Minimum Program Hours</b>	32-33	
	<b>Prerequisite Hours</b>	23	
Advisor Signature and Date:			
Name:			
Major/Specialization:			
Campus ID:			

**Curriculum Advising Sheets – Semester – Physical Geography**

<b>Physical Geography Advising Sheet, CPG Specialization SEMESTERS</b>			
<b>Segment of Major Program and Course Number</b>	<b>Course name</b>	<b>Credit hours</b>	<b>Grade</b>
<b>Required Prerequisites or Supplements to the Major</b>			
Math 1251	Calculus 1	5	
Math 1252	Calculus 2	5	
Physics 1250	Introduction to Calculus-based Physics 1	5	
Statistics 2450	Introduction to Statistical Analysis	3	
<b>Required Courses (19-20 hours)</b>			
2960 OR 2800	Introduction to Phys Geog OR Phys Geog and Environmental Issues	3 or 4	
3980	Biogeography: An Introduction to Life on Earth	3	
3900 OR 3901H	Global Climate Change: Causes and Consequences OR Global Climate and Envt'l Change	3	
AS 2940 OR GEOG 5900	Basic Meteorology OR Climatology	3	
5100 OR 5200 OR 5220	Quantitative Geographical Methods OR Elements of Cartography OR Fundamentals of Geographic Information Systems	3	
Successor to ES	Geomorphology	4	
<b>Electives. Choose five of the following courses (at least three must be from Geography or Atmospheric Sciences) (15-16 hours)</b>			
<b>Note that some courses may have prerequisites beyond those required for the major.</b>			
5200	Elements of Cartography	3	
5201	Computer Cartography and Geographic Visualization	3	
5220	Fundamentals of Geographic Information Systems	3	
5221 OR 5222 OR 5223	Spatial Simulation and Modeling in GIS; GIS Applications in Social Science and Business; Design and Implementation of GIS	3	
5270	Geographic Applications in Remote Sensing	3	
4101	Undergraduate Research and Professionalization Seminar	3	
Choice	One Human Geography course 4000-level or higher	3	
5921	Boundary Layer Climatology	3	
5922	Microclimatological Measurements	3	
AS/GEOG 5940	Synoptic Meteorology Laboratory	3	
5941	Synoptic Analysis and Forecasting	3	
5942	Severe Storm Forecasting	3	
AS 5901	Climate System Modeling: Basics and Applications	3	
AS 5950	Atmospheric Thermodynamics	3	
AS 5951	Dynamic Meteorology I	3	
AS 5952	Dynamic Meteorology II	3	
3882	Integrated Earth Systems: Confronting Global Change	3	
Successor to ES	Principles of Oceanography	3	
Successor to ES	Water in the Basin Hydrologic Cycle	3	
Successor to ES	The Cryosphere	3	
Successor to ES	Glaciers and Landscapes	4	
<b>Total Program Hours</b>			
<b>Minimum Program Hours</b>		34-36	
<b>Prerequisite Hours</b>		18	
Advisor Signature and Date:			
Name:			
Major/Specialization:			
Campus ID:			

**Curriculum Advising Sheets – Quarter – Climatic Studies**

<b>Climatic Studies Advising Sheet, CPG Specialization QUARTERS</b>			
<b>Segment of Major Program and Course Number</b>	<b>Quarter course name</b>	<b>Credit hours</b>	<b>Grade</b>
<b>Required Prerequisites or Supplements to the Major</b>			
Math 151, 152, 153	Calculus and Analytical Geometry I-III	15	
Physics 131, 132	Introductory Physics	10	
Statistics 245	Introduction to Statistical Analysis	5	
<b>Required courses (28-30 Hours)</b>			
AS230 or Geog520	Basic Meteorology OR Climatology	5	
620	Synoptic Meteorology Laboratory	3	
622.01	Boundary Layer Climatology	5	
622.02	Microclimatological Measurements	5	
623.01	Synoptic Analysis and Forecasting	5	
623.02	Severe Storm Forecasting	5	
<b>Electives. Choose five of the following courses (25 Hours)</b>			
AS 629	Climate System Modeling: Basics and Applications	5	
AS 631	Atmospheric Thermodynamics	5	
AS 637	Dynamic Meteorology I	5	
AS 638	Dynamic Meteorology II	5	
210	Physical Geography and Environmental Issues	5	
420	Global Climate Change: Causes and Consequences	5	
490	Biogeography: An Introduction to Life on Earth	5	
580	Elements of Cartography	5	
597.02	Integrated Earth Systems: Confronting Global Change	5	
607	Fundamentals of Geographic Information Systems	5	
795	Undergraduate Research and Professionalization Seminar OR Seminar in Geography	5	
ES 206	Principles of Oceanography	5	
ES 650	The Cryosphere Earth Sci <u>or</u> Glaciers and Landscapes	5	
	<b>Total Program Hours</b>		
	<b>Minimum Program Hours (including prereqs)</b>	53-55	
	<b>Prerequisite Hours</b>	15	
Advisor Signature and Date:			
Name:			
Major/Specialization:			
Campus ID:			

**Curriculum Advising Sheets – Quarter – Physical Geography**

<b>Physical Geography Advising Sheet, CPG Specialization QUARTERS</b>			
<b>Segment of Major Program and Course Number</b>	<b>Quarter course name</b>	<b>Credit hours</b>	<b>Grade</b>
<b>Required Prerequisites or Supplements to the Major</b>			
MATH 151,152	Calculus and Analytical Geometry I-II	10	
PHYS 131	Introductory Physics	5	
STATS 245	Introduction to Statistical Analysis	5	
<b>Required Courses (30 hours)</b>			
220	Introduction to Physical Geography Geog 220	5	
420	Global Climate Change: Causes and Consequences Geog 420	5	
490	Biogeography: An Introduction to Life on Earth Geog 490	5	
520	Basic Meteorology AS 230 OR Climatology Geog 520	5	
597.02	Integrated Earth Systems: Confronting Global Change Geog 597.02	5	
ES 550	Geomorphology Earth Sci 550	5	
<b>Electives. Choose five of the following courses (at least three must be from Geography or Atmospheric Sciences): (23-25 hours)</b>			
210	Physical Geography and Environmental Issues	5	
580	Elements of Cartography	5	
680	Computer Cartography and Geographic Visualization	5	
607	Fundamentals of GIS	5	
685	Intermediate Geographic Information Systems	5	
795	Undergraduate Research and Professionalization Seminar OR Seminar in Geography	5	
600+	One Human Geography course 600-level or higher	5	
620	Synoptic Meteorology Laboratory	3	
622.01	Boundary Layer Climatology	5	
622.02	Microclimatological Measurements Geog	5	
623.01	Synoptic Analysis and Forecasting Geog	5	
623.02	Severe Storm Forecasting 623.02	5	
AS 629	Climate System Modeling: Basics and Applications	5	
AS 631	Atmospheric Thermodynamics	5	
AS 637	Dynamic Meteorology I	5	
AS 638	Dynamic Meteorology II	5	
ES 206	Principles of Oceanography	5	
ES 410	Water in the Basin Hydrologic Cycle	5	
ES 450	The Cryosphere	5	
ES 650	Glaciers and Landscapes	5	
	<b>Total Program Hours</b>		
	<b>Minimum Program Hours (including prereqs)</b>	<b>53-55</b>	
	<b>Prerequisite Hours</b>	<b>15</b>	
Advisor Signature and Date:			
Name:			
Major/Specialization:			
Campus ID:			

**Transition policy:**

Students who began their degree under quarters will not be penalized as we move to semesters, either in terms of progress towards their degree or their expected date of graduation. The sequence of classes in the major is largely very flexible. We do not see the need for any bridge courses in Geography.

**Curriculum map, indicating how program goals are accomplished via specific courses**

	KEY:	1=Beg.	2=Int.	3=Adv.
	Learning outcome A	Learning outcome B	Learning outcome C	Learning outcome D
<b>Required Prerequisites or Supplements to the Major</b>				
<b>1. For Climatic Studies path (23 Hours)</b>				
Math 1251, 1252		1		
Physics 1250, 1251	1	1		
Statistics 2450	1	1		
<b>2. For the Physical Geography path (18 hours)</b>				
Math 1251, 1252		1		
Physics 1250	1	1		
Statistics 2450	1	1		
<b>Required courses</b>				
<b>1. For Climatic Studies path (17 hours)</b>				
AS 2940 OR GEOG 5900	1	1,2	1,2	
5921	3		2	
5922		3		3
AS/GEOG 5940	1	2		2
5941	2	3	2	
5942	3	3	2	
<b>2. For Physical Geography path (19-20 hours)</b>				
2960 OR 2800	1	1	1	1
3980	2	2	2	2
4900	2		3	
AS 2940 OR GEOG 5900	1	1,2	1,2	
5100 OR 5200 OR 5220	1, 2	1, 2		1
Successor to ES 550	2	2		
<b>Electives</b>				
<b>1. For Climatic Studies path.</b>				
2960 OR 2800	1	1	1	1
4900	2		3	
3980	2	2	2	2
AS 5901	2	3	2	
AS 5950	2	2		
AS 5951	3	2		
AS 5952	3	3		
3882	1	2	1	
5200	1	1	2	1
5220	1	1		
4101		3	3	3
Successor to ES 206	1	1		
Successor to ES 450 or 650	2, 3		2	
<b>2. For Physical Geography path.</b>				

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5200	1	1	2	1
5201	2	2	3	
5220	1	1		
5221 OR 5222 OR 5223	3	2	2	3
5270	2	2		2
4101		3	3	3
One Human Geography course 4000-level or higher	2, 3			
5921	3		2	
5922		3		3
AS/GEOG 5940	1	2		2
5941	2	3	2	
5942	3	3	2	
AS 5901	2	3	2	
AS 5950	2	2		
AS 5951	3	2		
AS 5952	3	3		
3882	1	2	1	
Successor to ES 206	1	1		
Successor to ES 410	2			
Successor to ES 450	2	2		
Successor to ES 650	3	2		

Learning Outcome A: Students acquire fundamental concepts of geography

Learning Outcome B: Students achieve familiarity with methods used in geography

Learning Outcome C: Students can communicate geographical concepts and methods orally, visually, and/or in writing

Learning Outcome D: Students apply geographical concepts and methods in experiential settings, including internships, field work, study abroad, research, and through international experience.