REQUIREMENTS FOR THE BACHELOR OF SCIENCE IN GEOGRAPHY

COLLEGE OF GEOSCIENCES
THE UNIVERSITY OF OKLAHOMA

For Students Entering the Oklahoma State System for Higher Education: **Summer 2000 through Spring 2001**

Minimum Credit Hours and Grade Averages Required

Total Credit Hours 126
Grade Point Averages:
Minimum in OU Coursework 2.00
Minimum in Major Coursework 2.00
Overall 2.00

Geography

2206C
Bachelor of Science in Geography

Year	FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
FRESHMAN	**ENGL 1113**, Principles of English Composition (Core I)	3	**ENGL 1213**, Principles of English Composition (Core I)	3
	MATH 1823, Calculus & Analytic Geometry I (Core I)	3	**MATH 2423**, Calculus & Analytic Geometry II	3
	CHEM 1315, General Chemistry (Core II)	5	**CHEM 1415**, General Chemistry	5
	HIST 1483 or **1493**, U.S. (Core IV)	3	[1]**GEOG 1114**, Physical Geography (Core II)	4
	GEOG 1103, Human Geography (Core IV, Western Culture)	3		
	TOTAL CREDIT HOURS	**17**	**TOTAL CREDIT HOURS**	**15**
SOPHOMORE	**MATH 2433**, Calculus & Analytic Geometry III	3	**MATH 2443**, Calculus & Analytic Geometry IV	3
	P SC 1113, American Federal Government (Core III)	3	**PHYS 2524**, General Physics for Engineering & Science Majors	4
	PHYS 2514, General Physics for Engineering & Science Majors	4	**C S 1313**, Computer Programming	3
	General Education Elective (Core III, Social Science)	3	Western Civilization & Culture Elective (Core IV)	3
	GEOG 3001, Dialogue on Discipline of Geography	1	[3]Geography—Systematic Human Geography Course	3
	[4]Geography--Systematic Physical Geography Course	3		
	TOTAL CREDIT HOURS	**17**	**TOTAL CREDIT HOURS**	**16**
JUNIOR	**ENGL 3153**, Technical Writing	3	[2]Free Elective	3
	GEOG 3924, Analytic Methods in Geography	4	[1,5]Artistic Forms Elective (Core IV)	3
	Non-Western Culture Elective (Core IV)	3	[3]Geography—Systematic Human Geography Course	3
	[4]Geography—Systematic Physical Geography Course	3	[5]Geography—Geotechniques Course	3
	[7]Area of Concentration	3	[7]Area of Concentration	3
	TOTAL CREDIT HOURS	**16**	**TOTAL CREDIT HOURS**	**15**
SENIOR	Free Elective (upper-division)	3	[2]Free Elective (upper-division)	3
	Free Elective (upper-division)	3	[2]Free Elective (upper-division)	3
	Free Elective	3	[2]Free Elective (upper-division)	3
	[6]Geography—Regional Geography Course	3	**GEOG 4953**, Proseminar (Capstone)	3
	[7]Area of Concentration	3	[7]Area of Concentration	3
	TOTAL CREDIT HOURS	**15**	**TOTAL CREDIT HOURS**	**15**

[1] = To be chosen from the University-Wide General Education Approved Course List. Three hours of general education must be upper-division outside the major. Non-Western Culture can be fulfilled by taking an appropriate course as free elective, geography elective, or humanities/social science elective. Students who have not completed the foreign language General Education requirement in high school may use 2 hours of lower-division free elective toward the 10 hours of University-required foreign language. These students require a minimum of 133 hours for graduation.

[2] = Seventeen hours of faculty-adviser-approved Free Electives are required; 15 hours of which must be upper-division. Within these 17 hours, students must complete one geosciences course outside the major.

[3] = Two Systematic Human Geography courses chosen from 1113, 1213, 2113, 2213, 3213, 3223, 3513, 3633, 3773, 4443, 4563, or other course approved by faculty adviser.

[4] = Two Systematic Physical Geography courses chosen from 4203, 4273, 4283, 4293, 4314, or other course approved by faculty adviser.

[5] = One Geotechniques Geography course (3 credit hours) chosen from 3353, 3930, 3933, 4453, 4933, or other course approved by faculty adviser.

[6] = One Regional Geography course chosen from 2603, 3533, 3613, 3853, 4243, 4633, 4913, or other course approved by faculty adviser.

[7] = Twelve hours from one of three areas of concentration, two courses of which must be geography. Areas of concentration include Earth System Interactions, Environmental Geography and Geotechniques. See faculty adviser for approved course lists for areas of concentration.

NOTE: No more than 48 hours may be taken in one department of the College.

Students must complete 48 hours of upper-division coursework for graduation.

[1]University-Wide General Education Requirements (minimum 40 hours)

Courses designated as Core I, II, III or IV are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list, including at least one upper-division Gen. Ed. course outside of the student's major. Courses graded S/U or P/NP will not apply.

Core I	**Symbolic and Oral Communication (9–19 hours, 3–5 courses)** •English Composition–6 hours, 2 courses •Mathematics–3 hours, 1 course •Foreign Language–0–10 hours, 2 courses in the same language, (can be met by successfully completing two years of the same foreign language in high school) •Other (courses such as communication, logic or public speaking)
Core II	**Natural Science (7 hours, 2 courses)** •Courses must be taken from different disciplines in the biological and/or physical sciences; one of which must include a laboratory.
Core III	**Social Science (6 hours, 2 courses)** •One course must be P SC 1113, "American Federal Government"
Core IV	**Humanities (12 hours, 4 courses)** •Understanding Artistic Forms–3 hours, 1 course •Western Civilization and Culture–6 hours, 2 courses, including HIST 1483 or HIST 1493 •Non-Western Cultures–3 hours, 1 course
Senior Capstone Experience (3 hours, 1 course)	

COURSES IN COMPUTER SCIENCE (C S)

1313 Computer Programming. Prerequisite: Mathematics 1523 or equivalent. Introduction to the design and implementation of computer programs using procedural languages such as FORTRAN and C. Emphasis on problem solving and on scientific and engineering applications. (F, Sp)

COURSES IN GEOGRAPHY (GEOG)

1103 Human Geography. An introduction to the humanized Earth; specifically, to the geography of population, the global pattern of cultures and such affiliated elements as language, religion, technology, and political organization, and to the physical expression of those cultures in rural and urban settings. (F, Sp, Su)

1113 The Language of Maps. How to read, analyze and interpret graphic information symbolized on a wide variety of maps. Topics include: scale, location, distance and direction, navigation, interpreting human and physical landscapes, map propaganda, maps in the media and comparisons of maps in western and non-western societies.

1114 Physical Geography. A systematic introduction to the physical Earth; including Earth materials, landform processes and resultant landforms, Earth-sun relations, weather, climate, the water cycle, natural vegetation, and soil types. Emphasis is placed on the inter-relationships among these phenomena. (F, Sp, Su)

1213 Economic Geography. A survey of the contemporary global economy and of the analytical approaches developed by geographers studying it. Economic systems are examined at the household, urban, regional, national, and international levels. Special attention is given to changes in resource use, regional specialization, trade, industrial and retail location, and modernization. (F, Sp)

2213 Globalization and the Environment. Explores the complex assemblage of economic, political, and cultural processes popularly known as "globalization" and examines their implications for resource use and the environment. A central objective is to facilitate critical thinking on global environmental issues and enable students to challenge the increasingly polarized rhetoric concerning economic growth and the environment. (Irreg.)

2603 World Regional Geography. A broad survey of the world's major culture regions emphasizing basic physical, cultural, economic, and political patterns, as well as the processes that have created those patterns. Emphasis on economic development, ethnic conflict, and environmental degradation, as well as on the changing role of the United States. (F, Sp, Su)

3001 Dialogue on the Discipline of Geography. Prerequisite: 1103, 1114 and 1213; or permission of instructor. Introduction to the discipline of geography, nature of geographical research and the interests and ideas of departmental faculty and students.

3213 Cultural Geography. Prerequisite: 1103 and 1114. The development, visual character, and representation of the Earth's humanized or cultural landscapes. Special attention is given to the relationship between those landscapes and the people who have created them, as well as to the relationship between those landscapes and such ideas as religion, the state, and progress. (F)

3223 The British Empire and Its Successor States. An introduction to the British colonial experience and to post-imperial development, particularly in Asia and Africa.

3353 Introduction to Cartography. A basic survey of maps: their properties, conception and design, construction, compilation and editing, production, and use, with exercises in mapmaking. (F)

3513 Political Geography. A survey, stressing current geopolitical conflicts. Special topics include the nation-state, territoriality, the legacies of colonialism, spheres of political influence, regional conflicts, political-geographical integration in such areas as Europe and the Pacific Rim, demographic and resource considerations in world politics, and emerging culturally based conflicts. (F, Sp)

3533 Geography of Europe. Europe's natural and cultural landscapes. Emphasis is placed on recent political, economic and social changes and on such issues as an aging population, rural crises, energy conservation, inner-city revival, mass transportation systems, survival of family-operated small industries, tourist cultures, minorities, and urban poverty. (F, Sp)

3613 Geography of Oklahoma. A study of the physical regions, populations, distribution, economic development and recreational resources of Oklahoma. (Irreg.)

†G3633 Historical Geography of the United States. America's changing geography is considered under three headings: the Colonial Pattern, the Humid East, and the Dry West. Special attention is given to those human activities that have shaped successive cultural landscapes and to those patterns that persist to give present day regions their distinctive character. (F, Sp)

†G3924 Analytic Methods in Geography. Introduces students to methods of organizing, classifying and describing geographic data, together with methods of interpreting spatial relationships and areal associations. **Laboratory** (F)

3930 Field Techniques for Geographers. 1 to 4 hours. Prerequisite: twelve hours of geography or permission of instructor. May be repeated with change of subject matter; maximum credit six hours. Basic methods of data acquisition: surveying, measuring, sampling, sketching, and mapping. Individual and group projects may be required. (Irreg.)

3933 Interpretation of Aerial Photographs. Prerequisite: 1114 or permission. An introduction to the photographic inventory of physical and cultural land resources including current processes of change, and to the use of aerial photographs in evaluating present land use, potential alternatives, and associated risks. (Irreg.)

4003 The Global City and Planning Issues (Crosslisted with Regional and City Planning 4003; Slashlisted with 5003). Prerequisite: English 1213 and junior standing. An introduction to the concept of globalization and its effects on cities, and the city planning issues related to those effects. Characteristics, theories, and strategies of city development are reviewed. Cities are observed from several perspectives: natural and built environment, governance, society, economics, and history. No student may earn credit for both 4003 and 5003. (Sp)

G4203 Geomorphology. Prerequisite: 1114, or comparable work in earth sciences, junior standing. Development and modification of land-surface form by atmospheric, fluvial, glacial, mass-wasting, volcanic and tectonic agents. Emphasis is placed on spatial aspects of the interactions at the interfaces of land, air and water. (Irreg.)

4243 Geography of China (Slashlisted with 5243). Prerequisite: junior standing or permission of instructor. Cultural and environmental geography of China, Tibet and Mongolia since the Qing dynasty (1644-today). No student may earn credit for both 4243 and 5243. (Sp)

G4273 Regional Climatology. Prerequisite: 1114, Meteorology 1004, junior or senior standing; or permission. Investigates the nature of the Earth's climate and presents a synthesis of contemporary scientific ideas about atmospheric circulation. Topics include radiation, the hydrologic cycle, general circulation, local and regional climates, and global climate change. Specific attention is focused on the climatic water budget, its utility in evaluating local and regional climates, the emerging role of climate models, and issues in global climate change. (Irreg.)

4283 Biogeography (Slashlisted with 5283). Prerequisite: 1114 and junior standing. A survey of spatial patterns and processes in plant populations, plant communities, and vegetated landscapes. Emphasis is placed on the contemporary patterns of species and communities as determined by a combination of factors including physiography, climate, human influences, evolution, and dispersal. Field and laboratory techniques used in biogeographic research are also discussed. No student may earn credit for both 4283 and 5283. (Alt. Sp)

4293 Hydrologic Science (Slashlisted with 5293). Prerequisite: Math 1823 and either Physics 2414, 2514 or Chemistry 1315. Study of the processes which control the storage and movement of water at global, regional, and local scales. The emphasis is on the land portion of the hydrologic cycle, and includes the study of processes such as infiltration, soil water flow in the saturated and unsaturated zone, rainfall/runoff and evaporation. Lab sections include exercises on a computer in the field and in a soils lab. No student may earn credit for both 4293 and 5293. (Sp)

4314 Soils. Prerequisite: 1114. A survey of physical and chemical properties of soils, climate-soil relationships; soil geneses, survey and classification; soil erosion and its control; and soil resources and human dimensions. **Laboratory** (Irreg.)

4443 Urban Ecology (Slashlisted with 5443). Prerequisite: junior standing and permission of instructor. An interdisciplinary course that examines how cities acquire, utilize, and modify environmental inputs such as land, water, and energy, and in the process generate a complex set of waste streams and environmental impacts such as solid wastes, atmospheric emissions, and habitat modification. No student may earn credit for both 4443 and 5443. (Irreg.)

4453 Geographic Information Systems (Slashlisted with 5453). Prerequisite: 3353 or permission of instructor. An introduction to the nature and applications of geographic information systems (GIS) including the categories of geographic data, data input, data models, spatial analysis, output, and the uses of GIS in socio-economic and environmental studies. No student may receive credit for both 4453 and 5453. (F, Sp)

4553 GIS Applications (Slashlisted with 5553). Prerequisite: 4453. Emphasizes technical and application practices in geographic information systems (GIS). Through weekly exercises and two projects, students will gain experience with applications and utilities of Geographic Information Systems, and learn how to plan and implement a GIS project. No student may earn credit for both 4553 and 5553. **Laboratory** (Irreg.)

4563 American Indian Geographies. Prerequisite: upper-division standing. A survey of the geographical knowledge among Indians in North America. Historical and contemporary topics are covered in a cross-cultural perspective including land use, environmental perception, concepts of space and place, symbolic landscapes, sacred land, and the idea of resources. (Sp)

G4933 Remote Sensing I. Introduction to theory and interpretation of remote sensing imagery, with emphasis on photographic, multi-spectral, thermal, and microwave remote sensing systems. Imagery from aircraft, satellite and low-altitude platforms will be used to illustrate geographic and environmental applications of remote sensing. (F)

4953 Proseminar in Geography. Prerequisite: 1103, 1114, 1213, 3213, 3353, 3924, and an upper-division physical geography course; 3353 and 3924 may be taken concurrently with permission of instructor. History and character of the discipline of geography, with particular attention to changing themes, debates, and methods, the discipline's relations with its neighbors, and current trends in the discipline. (Sp)

COURSES IN MATHEMATICS (MATH)

1823 Calculus and Analytic Geometry I. Prerequisite: 1523 at OU, or satisfactory score on the placement test, or satisfactory score on the ACT/SAT. Topics covered include equations of straight lines; conic sections; functions, limits and continuity; differentiation; maximum-minimum theory and curve sketching. A student may not receive credit for this course and 1743. (F, Sp, Su)

2423 Calculus and Analytic Geometry II. Prerequisite: 1823. Integration and its applications; the calculus of transcendental functions; techniques of integration; and the introduction to differential equations. A student may not receive credit for this course and 2123. (F, Sp, Su)

2433 Calculus and Analytic Geometry III. Prerequisite: 2423. Polar coordinates, parametric equations, sequences, infinite series, vector analysis. (F, Sp, Su)

2443 Calculus and Analytic Geometry IV. Prerequisite: 2433. Vector calculus; functions of several variables; partial derivatives; gradients, extreme values and differentials of multivariate functions; multiple integrals; line and surface integrals. (F, Sp, Su)

COURSES IN PHYSICS (PHYS)

2514 General Physics for Engineering and Science Majors. Prerequisite: Mathematics 1823. Not open to students with credit in 1205. Vectors, kinematics and dynamics of particles, work and energy systems of particles, rotational kinematics and dynamics, oscillations, gravitation, fluid mechanics, waves. (F, Sp, Su)

2524 General Physics for Engineering and Science Majors. Prerequisite: 2514 and Mathematics 2423. Not open to students with credit in 1215. Temperature, heat, thermodynamics, electricity, magnetism, optics. (F, Sp, Su)