

Geography-Anthropology

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Professors: Edney, Savage, Wood; *Associate Professors:* Bampton, Hamilton, Pavri, Tizon; *Assistant Professor:* Ettenger; *Professors Emeriti:* Crader, Davis, French, Hodges; *Adjunct Faculty:* Bigelow, Michaud-Stutzman, Valentine

The program leading to a major in geography-anthropology emphasizes the integration of the two disciplines. Among the elements that are integrated in the major are common interests in the relationship between human populations and their natural environment, decision-making strategies of human groups, and the health and nutritional status of human societies. The major is an interdisciplinary program wherein students are expected to take courses from both geography and anthropology. The program of study beyond the basic requirements should be planned carefully, in close consultation with the student's departmental advisor, and should be approved by the latter. Such an arrangement allows for flexibility according to the student's interests while also providing close guidance and a control of educational quality by the Department.

Programs and Requirements

The Department offers the following programs: bachelor of arts in geography-anthropology; minor in anthropology; minor in archaeology; minor in geography; applied geography minor in planning; a concentration in the social sciences area major of the College of Arts and Sciences; and a certificate in applied GIS.

All students with majors or specific discipline minors in the social sciences must achieve at least six credits with grades of B or better in the requirements of those majors or minors. No grades of D will be counted toward fulfillment of the major or minor requirements. Except for Independent Studies, no required course may be repeated more than one time.

All students are reminded that, in addition to meeting departmental requirements for the major, they must also meet the University's minimum readiness requirements and the Core curriculum requirements.

Bachelor of Arts in Geography-Anthropology

The minimum number of credits (exclusive of the University's Core curriculum) required for the major: 47-53.

All students must take:

ANT	101J	Anthropology: The Cultural View
ANT	102K	Biological Anthropology
ANT	103	Introduction to Archaeology
GEO	101J	Human Geography
GEO	102K	Physical Geography
GYA	202D	Research Methods

All students must complete at least three credit hours in a geography or anthropology field course. A supervised three credit minimum internship in geography or anthropology may be substituted for the field course.

All students then elect to concentrate in either anthropology or geography.

Students who elect to concentrate in anthropology must also take:

ANT	310	History of Anthropological Thought and either
ANT	305	History of Archaeological Thought or
ANT	340	Primate Behavior

One ethnography course selected from the following:

ANT	220I	North American Indians
ANT	222I	Peoples of the North
ANT	230I	Hunters and Gatherers
ANT	301I	Victims of Progress
ANT	350	Amazon Peoples and Development

One of the following topical or regional courses

ANT	201J	Human Origins
ANT	202I	Origins of Civilization
ANT	213	Human Ecology

ANT	232I	The Anthropology of Sex and Gender
ANT	233I	Food and Culture
ANT	250I	Archaeology of South America
ANT	254	Archaeology of East Asia
ANT	255	African Prehistory
ANT	302	Medical Anthropology
ANT	305	History of Archaeological Thought*
ANT	340	Primate Behavior*
ANT	450	Topics in Anthropology

*No course may be used to fulfill more than one category.

One of the following techniques or applied courses:

ANT	306	Analysis of Archaeological Materials
ANT	308	Environmental Archaeology
ANT	315	Ethnography: Methods, Ethics, and Practice
ANT	320	Human Osteology
ANT	410	Zooarchaeology
GEO	208	Cartography I
GEO	305	Remote Sensing
GEO	308	GIS I

9 additional credit hours, 3 of which must be ANT courses at or above the 300 level, and 3 of which must be GEO courses at or above the 200 level.

Students who elect to concentrate in geography must also take:

GEO	103J	Human-Environmental Geography
GEO	310	History of Geographical Thought

Two of the following topical or regional courses:

GEO	104J	World Regional Geography
GEO	120J	Geography of Maine
GEO	203J	Urban and Regional Development
GEO	207J	Maps: Knowledge, Technology, Society, Culture
GEO	212	Regional Geography of Western Europe
GEO	301	Political Geography
GEO	302	Gender, Work, and Space
GEO	303	Economic Geography
GEO	304	Social Transformation of Nature
GEO	307	History of Anglo-American Cartography
GEO	320	Conservation of Natural Resources
GEO	350	Geography of International Development
GEO	402	Urban Geography
GEO	403	Urban Physical Geography
GEO	450	Topics in Geography

One of the following techniques or applied courses:

GEO	208	Cartography I
GEO	209	Introduction to Land Use Planning
GEO	210	Planning Maine Communities
GEO	305	Remote Sensing
GEO	308	GIS I
GEO	408	GIS II
ANT	315	Ethnography: Methods, Ethics, and Practice

9 additional credit hours, 6 of which must be in GEO courses at or above the 300 level, and 3 of which may be ANT or GEO.

Additionally, all geography-anthropology majors are required to demonstrate writing competence by completing two research papers in the major with grades of C or better, from two different professors, circulated and reviewed by the Department at least one semester prior to graduation.

The maximum number of hours of internships, field experience, and/or independent studies that can be applied toward the major is 9 hours. All students must meet with their advisors before registering for courses each semester.

Minors

Minors offered by the Department of Geography-Anthropology are intended for those students with a major other than geography-anthropology who wish to broaden their educational experience in a formally designated program of study.

Minor in Anthropology

The minor in anthropology shall consist of the following 19 credits:

- ANT 101J Anthropology: The Cultural View (3 credits)
- ANT 102K Biological Anthropology and Lab (4 credits)
- ANT 103 Introduction to Archaeology (3 credits)
- ANT 310 History of Anthropological Thought (3 credits)

and any two courses (6 credits total) from two different subfields of anthropology (cultural, archaeology, biological)

Minor in Archaeology

The minor in archaeology consists of a minimum of 18 credits:

Required:

- ANT 103 Introduction to Archaeology (3 credits)
- ANT 104 Introduction to Historical Archaeology (3 credits)
- ANT 305 History of Archaeological Thought (3 credits)
- ANT 306 Analysis of Archaeological Materials (3-6 credits)

Electives:

One of the following:

- ANT 202I Origins of Civilization (3 credits)
- ANT 250I Archaeology of South America (3 credits)
- ANT 254 Archaeology of East Asia
- ANT 255 African Prehistory

One of the following:

- ANT 307 Specialized Techniques in Archaeology
- ANT 308 Environmental Archaeology
- ANT 360 Public Archaeology
- ANT 410 Zooarchaeology
- GYA 300 Archaeology Field School

Or any combination of three elective courses.

Minor in Geography

The minor in geography shall consist of the following 19 credits:

- GEO 101J Human Geography (3 credits)
- GEO 102K Physical Geography and Lab (4 credits)
- GEO 120J Geography of Maine (3 credits)
- GEO 208 Cartography I (3 credits)

or

- GEO 305 Remote Sensing (3 credits)

and 6 additional hours of geography courses

Applied Geography Minor in Planning

The minimum number of credits (exclusive of the University's Core curriculum) required for the minor: 18.

Required courses: GEO 101J, GEO 208

Choice of one from: GYA 350-351, GYA 400

Choice of one from: GEO 305, GEO 308

Choice of one from: GEO 209, GEO 210

Choice of one from: GEO 303J, GEO 402, GEO 403

Certificate in Applied GIS

This certificate consists of 15-17 credit hours. The certificate is designed to provide students and members of the professional community with Geographic Information Systems skills. At all levels of the program, training focuses on the application of GIS skills in the workplace and in research environments. The certificate is open to undergraduates and graduates interested in developing GIS applications in their fields, those already holding degrees who are interested in developing GIS skills to apply to their own areas of expertise, professionals interested in adding GIS to their lexicon of skills, or retooling for a career change.

All courses will be taught at USM. Some courses may be transferred from other UMaine System campuses, as appropriate. In cases where students have already completed the listed course and with prior approval, alternate courses may be substituted for both requirements and electives to make up the full count of 15 credits.

Students must complete all courses with a C- or better. Geography-anthropology majors may use only one course in the certificate toward their major requirements.

Required courses: GEO 308/GEO 608/CPD 620 and GEO 408/GEO 618/CPD 621 and GEO 458/GEO 658.

Electives (take at least two of the following for a minimum of 15 credit hours): COS 141, COS 160 (3 cr.) and COS 170 (1 cr.), GEO 305/GEO 605, ITT 282, ITT 384, GEO 340/GEY 340, CPD 625, GEO 448.

Archaeology Laboratory

The Archaeology Laboratory located in 317 Bailey Hall provides facilities for research in archaeology and related areas. Various research collections are available, primarily from Maine, Alaska, and the Caribbean. The Archaeology Laboratory also houses a small library including books, journals, slides, and maps. Opportunities are available for independent student research projects, and work-study positions are available in the laboratory each semester.

Zooarchaeology Laboratory

The Zooarchaeology Laboratory located in 316 Bailey Hall provides facilities for research and teaching in zooarchaeology, human osteology, and human evolution. Current collections include casts of nonhuman primates and fossil hominids, and a comparative faunal collection specializing in mammals, birds, and fish of the Northeast.

Qualitative Research Laboratory

The Qualitative Research Laboratory is housed in 315 Bailey Hall and is dedicated to qualitative analysis, training, and instruction, including the use of digital media. The room is used for classes and laboratories, and to conduct research and media production in the qualitative aspects of cultural anthropology and human geography. Opportunities are available for independent research projects, and work-study positions are available in the laboratory.

Cartography Laboratory and Map Collections

The Cartography Laboratory located in 323 Bailey Hall provides facilities for map making and air photo interpretation. The room is open for faculty and student use daily. An extensive map collection is housed in 318 Bailey Hall. Holdings include national Defense Department maps, Maine maps, topographic maps, and various world regional maps. Student proctors are available to offer assistance.

GIS Laboratory

The Geographic Information Systems (GIS) Laboratory, located in 302 Bailey Hall, provides facilities for computerized automated research of geographical data. The GIS Laboratory includes tools for running vector-based geographic information systems, and has the capacity for hand-digitizing images and producing multi-color output.

Geography-Anthropology

GYA 202D Research Methods

Students will focus on the ways in which geographers and anthropologists conduct research. We will address the issues of research question formulation, methodological strategies, and analytic techniques. Topics include defining research problems, measurement, sampling, research design, and analysis. Examples, case studies, and data will be drawn from the disciplines of geography and anthropology. Prerequisites: one of the following: ANT 101J, ANT 102K, ANT 103, and one of the following: GEO 101J, GEO 102K, as well as completion of mathematics readiness. Cr 3.

GYA 215 Culture and Place

This course provides an introduction to the ways in which basic principles of ethnography, ethnohistory, and material culture studies can be used to understand the cultural landscape. Normally offered during either the Winter Session or the Summer Session, the course will usually be conducted in a setting outside Maine. The emphasis will be on collaborative research skills, understanding of other cultures, and appreciation of the interrelationship of anthropology and geography. Cr 4-6.

GYA 300 Archaeology Field School

The summer field school is designed to combine training in research methods of archaeology and geography. Students will receive intensive training in methods of site survey excavation and materials analysis. Several weeks will be spent at selected areas of coastal Maine involved in survey and excavation of sites, mapping sites and landscape features, and investigating potential food resources in site areas. This will be followed by some laboratory analysis of recovered materials. This course may be repeated twice with the permission of the instructor. Cr 4-6.

GEO/GEY 360 Field Mapping in the Island Environment: Data Collection to GIS

The coast of Maine provides a unique laboratory for teaching environmental mapping, data compilation, and data management. In this course students are trained and equipped to use kayaks as the platform

from which to conduct survey work for the preparation of small-scale high-resolution analytical maps of natural, historical, and archaeological phenomena. Field techniques used include topographic surveying, global positioning system (GPS) operation, and field mapping of geological and geographical features. Minimum impact methods are used throughout. Laboratory techniques used include air-photo interpretation, traditional cartography, and geographic information system (GIS) operation. The course culminates in the completion of a portfolio of maps and a GIS database covering the area surveyed. This course may be repeated once for credit. Offered Summer Session only. Prerequisite: permission of instructor. Cr 6.

GYA 350-351 Internship in Applied Geography-Anthropology

Internships offer the student practical experience in working with public agencies, private firms, and municipalities engaged in applied geographical-anthropological activities including, but not limited to, planning, transportation, delivery of human services, and natural resources.

A written contract will be drawn up by advisor and student for each internship, specifying the number of credits sought and work required for these credits. As a general rule, internships will require at least eight hours of actual work per week. Interns will be expected to meet at least once every two weeks with instructor to discuss experiences and/or problems.

In addition, a major paper will be required from each student intern discussing an aspect of the internship or the work performed during the internship. Prerequisite: junior or senior standing in geography-anthropology. Offered pass/fail only. Cr 1-6.

GYA 400 Independent Study in Anthropology or Geography

The Department faculty offers independent study in a topic in anthropology or geography for upper-level students (junior and senior status). Students must have had at least one course from the faculty member supervising the independent study; the proposal is subject to departmental approval. Variable credits will be offered.

Anthropology

ANT 101J Anthropology: The Cultural View

This course is a basic introductory survey of cultural anthropology. It examines the differences between cultures as well as cultural universals, and the relationship between social organization, ideology, economics, and political structure in different types of societies. It reviews the various theoretical approaches in cultural anthropology's attempt to explain human behavior, presenting examples from foraging, farming, and contemporary industrial societies through readings and films. Cr 3.

ANT 102K Biological Anthropology

This course examines our place in nature; the relationship between human biology and culture; the

relevance of primate behavior and human evolution to understanding contemporary human society; human biological adaptations, including a discussion of population and nutrition; and contemporary human variation with an evaluation of the concept of race. The course includes a required 2-hour lab each week that provides practical experience with materials and research methods used by biological anthropologists. Cr 4.

ANT 103 Introduction to Archaeology

This course describes the methods and theories used by modern archaeologists to uncover information about past human life ways. Attention is given to techniques of survey and excavation of archaeolog-

ical materials; concepts of space and time in archaeology; and detailed analysis of artifacts and organic residues. Some attention will be given to specific topics such as the archaeology of Maine. Cr 3.

ANT 104 Introduction to Historical Archaeology

An examination of the development and role of historical archaeology in interpreting the past, with regional emphasis on the United States. Several topics in historical archaeology will be examined, including New England historical archaeology, material culture analysis, subsistence and food way patterns, African American archaeology, and global perspectives. Cr 3.

ANT 201J Human Origins

This course focuses on the fossil and cultural evidence for human evolution. Topics to be covered include evolutionary theory, primate behavior, hominid origins, the taxonomy and phylogenetic relationships of fossil hominids, Pleistocene cultural adaptations, and the origin of modern *Homo sapiens*. The relationship between biology, geography, and culture is explored using the skeletal and archaeological evidence for human evolution. Cr 3.

ANT 202I Origins of Civilization

This course traces the evolution of human culture from the origins of farming and domestication, to the development of complex societies. General processes of urbanization and social stratification will be investigated, and examples will be drawn from throughout the Old and New Worlds, including the classical civilizations of the Near East, Southeast Asia, Mexico, and Peru. Cr 3.

ANT 213 Human Ecology

This course examines interactions between human societies and their natural environments. Human adaptation is viewed as a problem-solving process, involving the development of strategies for maximizing energy efficiency and reproductive success, for warding off environmental stress, and for reducing conflicts. These management strategies are examined for a number of human societies, and are used to gain insight into modern decision-making processes. Prerequisite: ANT 101J or 102K. Cr 3.

ANT 220I North American Indians

This course combines an ethnographic and archaeological perspective on the culture history and traditional cultures of native North Americans. Emphasis is placed on the relationship of aboriginal native cultures to their environments, and the evolution of complex societies in certain regions of North America. Also included is discussion of the fragmentation of Indian societies that followed the European invasion of North America. Cr 3.

ANT 222I Peoples of the North

This course is designed as a comprehensive summary of the prehistory, traditional culture, and contem-

porary life ways of peoples living in the northern hemispheres of both the Old and New Worlds—from Maine to Alaska, and from Siberia to Lapland. Special attention will be given to the origins of these peoples; the problems of living in cold, northern environments; the effects of European contact; and the modern problems that they face ranging from the effects of urbanization to land claim disputes. Prerequisite: ANT 101J or 103 or permission of instructor. Cr 3.

ANT 230I Hunters and Gatherers

Hunting and gathering is a way of life, not simply a subsistence technique. Ninety-nine percent of human evolutionary history involved this kind of life, and our biology as a species was created through this mode of existence. In this ethnographically oriented course we will study several hunter-gatherer societies including the Ju'hoansi, the Mbuti, the Australian aborigines, and the Inuit. Special attention will be given to understanding the traditional life and world view of hunter-gatherers, but we will also focus on how recent political and economic events are changing their lives. Cr 3.

ANT 232I The Anthropology of Sex and Gender

Sex and gender are, respectively, biological realities and cultural constructs. This course will examine the anthropology of sex and gender in an evolutionary-biological and cross-cultural perspective. The course is organized to explore the issues of sex and gender in three of the major subfields of anthropology: archaeology and biological and cultural anthropology. Topics will include bias in science, the biology and evolution of sex differences, sex-linked behaviors, nonhuman primates, human evolution and the division of labor, and sex roles in different kinds of human societies. Cr 3.

ANT 233I Food and Culture

This course focuses on food as an essential and central part of human experience. We will examine the anthropology of food and food habits, including an evolutionary-ecological perspective, the reconstruction of past human diets from archaeological evidence, and a cross-cultural examination of the diversity of human food preferences and avoidances. An important goal of the course will be to try to understand and appreciate cultural differences in food habits from both an ecological and a societal point of view. Cr 3.

ANT 250I Archaeology of South America

This course is designed as a comprehensive summary of prehistoric cultures and paleo-environmental conditions of South America. Emphasis is placed on the evolution of complex societies in the Andean and Pacific coast regions. Also included is a discussion of European contact and interaction with the Inka State. Cr 3.

ANT 254 Archaeology of East Asia

This course will examine prehistoric cultural devel-

opments in China, Korea, and Japan. Several issues will be examined in depth, including the theoretical framework of regional research, the Pleistocene-Holocene transition, the development and spread of wet-rice farming, the development of regional states, and the role of writing and historic documents. Students will gain insight into the social and economic transformations of selected cultures. Cr 3.

ANT 255 African Prehistory

This course examines the archaeological evidence for cultural developments in the African continent, from the earliest traces of hominid behavior through the Iron Age and precolonial states. Emphasis will be placed on the development of stone tool technology, pottery and metallurgy, the ecological setting of sites, the reconstruction of subsistence activities, and African geography and regional settlement patterns, through time. Prerequisite: ANT 103 or permission of instructor. Cr 3.

ANT 300 Action Anthropology

Students will engage in the pursuit of both knowledge and social action. Much of the information base for the social action project will come from concurrent enrollment in ANT 350 or ANT 301I, both of which address the environmental/cultural issues of indigenous peoples. The link between knowledge and informed action will be explicit: students will research a particular aspect of an environmental/cultural issue of indigenous peoples, and design a social action project to address it. This course will be particularly useful for students interested in a career in social or environmental service in a multi-ethnic setting. Credit will vary with the scope of the projects undertaken in a particular semester, as determined by the instructor. Prerequisite: concurrent registration with ANT 350 or ANT 301I. Cr 1-2.

ANT 301I Victims of Progress: Indigenous Peoples in the Modern World

This course examines the disappearance of indigenous societies as a result of the expansion of industrial society, and the implications of such a process for the future of humanity, from both a scientific and humanistic point of view. It also discusses the role of anthropology in explaining and promoting culture change, and reviews the various philosophies of development exhibited in modern society. Prerequisite: ANT 101J. Cr 3.

ANT 302 Medical Anthropology

This course considers the interface between medicine and anthropology in terms of both human biology and society. The course develops concepts of health as effective adaptation to environmental stresses, including infectious disease, nutritional stress, and psychosomatic illness, among others. It traces the history of health and disease in human society from hunter-gatherers to modern urban, industrial communities, and examines the way in which human populations have attempted to deal with various agents of disease. The course examines

the diversity of human theories of disease causation and explores the role of modern medicine in effective health care delivery to persons of different cultural and ethnic backgrounds. Prerequisite: ANT 101J, 102K or permission of instructor. Cr 3.

ANT 305 History of Archaeological Thought

This course is an historical survey of theory in archaeology from the early Classical archaeology and antiquarianism to contemporary processual, post-processual, and contextual approaches. It will examine the social history of archaeology in the United States. A special focus may include Scandinavian, Russian, Australian, or Japanese prehistory. Prerequisite: ANT 103. Cr 3.

ANT 306 Analysis of Archaeological Materials

This course provides an opportunity for in-depth study of methods used in the analysis of archaeological materials after they are recovered from excavations. Students will work in teams to apply analytical techniques to archaeological site collections including ceramics; stone, bone, and shell artifacts; and archaeological soils and faunal remains. Credit will vary with the range of techniques covered in a particular semester. Prerequisite: ANT 103. Cr 3-6.

ANT 307 Specialized Techniques in Archaeology

This course provides experience in the application of specific techniques from allied science disciplines to research problems in archaeology. Specific topics and course title may vary. May be repeated for credit under different titles. Prerequisite: GYA 300 or ANT 306 or permission of the instructor. Cr 1-2.

ANT 308 Environmental Archaeology

Students will be introduced to the analytical techniques that are commonly used in the archaeological study of past environments and environmental change. Topics to be covered include archaeological soils, preservation conditions, the reconstruction of past climates and landforms, and the analysis of plant and animal communities from archaeological evidence. In semesters when this course carries more than three credits, requirements will include a substantial research project. Prerequisite: junior status, and ANT 103 or GYA 300. Cr 3-6.

ANT 310 History of Anthropological Thought

This course is a historical survey of theory in anthropology from the early classical evolutionists to contemporary materialist and idealist approaches. It will examine the various theories in terms of their level of analysis, explanatory value, and relationship to the western society from which they emerged. This course is a requirement for those concentrating in anthropology. Prerequisites: ANT 101 and either ANT 102K or ANT 103. Cr 3.

ANT 315 Ethnography: Methods, Ethics, and Practice

This course offers students an overview of the meth-

ods of ethnographic observation and analysis, and of the ethical considerations of conducting such research. Students will be required to carry out ethnographic fieldwork, employing appropriate methods of data collection and analysis. Credit will vary depending on the scope of the fieldwork project, as determined by the instructor. Prerequisites: ANT 101J and one ethnography course or ANT 310. Cr 3-6.

ANT 320 Human Osteology

This course provides an introduction to the study and analysis of human skeletal material found at archaeological sites. We will focus on learning detailed human skeletal anatomy and the various metric and non-metric techniques used in aging, sexing, stature determination, and analysis of pathologies and injuries. Consideration will be given to how these techniques are applied in demographic and other analysis of prehistoric human populations. Prerequisite: ANT 102K or permission of instructor. Cr 3.

ANT 340 Primate Behavior

This is an intermediate course in primatology and theories of social behavior. Although the focus will be ethological, we will also consider primate biology, ecology, and biogeography. Aspects of primate behavior that will be considered include social organization, aggression, dominance, the mother-infant bond, play, sex roles, and intergroup relationships. We will also examine attempts to teach language to non-human primates and will consider the use of primates in models of human evolution. Prerequisite: ANT 102K or permission of instructor. Cr 3.

ANT 350 Amazon Peoples and Development

In recent years the alarm has been sounded about the rapid destruction of the Amazon rain forest and the unknown consequences of the loss of perhaps one-third of the world's species; less attention has been paid to the extinction of systems of knowledge and survival developed over the millennia by the indigenous forest people, not the least of which is how to live sustainably in the complex ecosystem in a rich diversity of cultures. In this course, students will examine these cultures for what they can teach us, as well as the effects of colonization and "devel-

opment" on the forest and its inhabitants. Prerequisite: ANT 101J. Cr 3.

ANT 355 Public Interpretation in Anthropology

Interpretation of anthropological information for the public using video, audio, photos, and other digital media. Students will work individually or in teams to create products for museums, schools, online, or in other public venues. Prerequisite: permission of instructor. Cr 3.

ANT 360 Public Archaeology

This course introduces students to the interpretation of archaeological information for the public benefit. Topics to be covered include museum exhibits, collection management, federal and state legislation, ethics, site conservation database management, and GIS. Students will work in teams to produce a finished product for presentation during Archaeology Awareness Week. The course includes prehistoric excavation and a trip to two museums. Credit varies with specific substantial topics and project breadth. Prerequisite: ANT 103. Cr 2-6.

ANT 410 Zooarchaeology

Zooarchaeology, the study of animal remains from archaeological sites, provides information for archaeologists about human diet and subsistence practices through time. The course will offer the basic theoretical and methodological foundations of zooarchaeological analysis, focusing on the study of mammalian bones recovered from archaeological sites. The approach will be lab-oriented, with emphasis on learning techniques of analysis and on interpreting archaeological faunal assemblages. Credit will vary with the scope of the projects undertaken in a particular semester. Prerequisite: ANT 102K, ANT 103, or a course in archaeology. Cr 3-6.

ANT 450 Topics in Anthropology

This course is designed to undertake detailed, in-depth analysis of important topics and issues in such subfields of anthropology as sociocultural anthropology, biological anthropology and archaeology. Topics vary from semester to semester. Research papers are required. Prerequisite: junior standing or permission of instructor. Cr 3.

Geography

GEO 101J Human Geography

This course examines social, economic, and political processes that shape the contemporary global landscape, with particular emphasis on the relationships between developed and developing regions of the world. Cartography, population trends, agricultural systems, migration, urbanization, and industrialization are among the topics covered. Cr 3.

GEO 102K Physical Geography

This course examines the physical processes of the environment as they relate to human endeavors. Climate, soil, vegetation, land form, water, and mineral resources are among the topics covered.

Laboratory exercises acquaint the student with the materials and methods of physical geography. Climate data, topographic maps and field observations are employed to solve practical problems of human interaction with the environment. Cr 4.

GEO 103J Human-Environmental Geography

Using geographic perspectives, this course focuses on the changing nature of the earth's environment and the human role in these changes. Both direct and indirect human impacts on the biosphere, the atmosphere, and the hydrosphere are considered, including tropical deforestation and the loss of biodiversity, the human role in global climate change, and the impact

of human actions on world fisheries. Local and regional examples will be incorporated. Cr 3.

GEO 104J World Regional Geography

This course will familiarize students with the diversity of people and places in the world by examining the physical, political, and cultural geography of different regions of the world. Emphasis will be given to development of regions within a global framework. This course will add to the general education of students by developing their geographic skills and by enhancing their geographic awareness and knowledge of the world through various aspects of global diversity. Cr 3.

GEO 108 Introduction to ArcGIS

An introduction to the ArcGIS software, stressing basic operation of this popular GIS package. Topics covered include system navigation, data display, data download, and printing public domain and user-created geographical data sets. Cr 3.

GEO 120J Geography of Maine

This course will examine Maine as a geographic region. Physical and cultural attributes of the state will be analyzed. Political, economic and demographic factors will be emphasized in viewing the assets and problems of the Maine environment and in planning Maine's future. Cr 3.

GEO 203J Urban and Regional Development

Students will survey contemporary patterns of urban and regional development through comparative analysis. Students will examine links between urbanization, employment, and social welfare in different political and economic contexts as the course moves from the global scale to the local. Students will be introduced to a series of research skills including the use of computer databases and spreadsheet programs, many of which will be of use in other courses. Cr 3.

GEO 207J Maps: Knowledge, Technology, Society, Culture

This course introduces the interdisciplinary nature of maps and geographic knowledge. Its core theme is the manner in which our complex knowledges of the world are constructed cartographically through technologies, social institutions and cultural expectations. Using examples from prehistoric rock-carvings to modern computer graphics, maps are interpreted as products of human ingenuity, rather than statements of geographic fact; they do not just show the world, they show our conception of what the world ought to be. Cr 3.

GEO 208 Cartography I

This is an introductory course in cartography focused on developing basic mapping and graphic communication skills essential to a wide variety of disciplines. The course will be flexible and adjusted to individual needs. Familiarization with basic charting technology and cartographic tools will be included. Cr 3.

GEO 209 Introduction to Land Use Planning

This course offers an overview of human/land relationships as they influence contemporary patterns of settlement and use of the land. It will discuss the logic of a planning process as a method of decision making; the formulation of goals and evaluation of alternative courses of action; standards and requirements for specific planning objectives (such as land use, energy, recreation, transportation); and the place of the planning function in government and the role of citizens and private groups. Introduction to basic planning tools and techniques including PERT, aerial photography, and methods of land inventory and classification will be presented. Cr 3.

GEO 210 Planning Maine Communities: Current Issues and Directions

This course will examine the issues facing Maine communities such as providing affordable housing, maintaining and improving the community's physical facilities such as streets, sewers, playgrounds, etc., disposing of solid and hazardous wastes, stimulating jobs and economic development, providing adequate transportation facilities, and preserving Maine's environment and lifestyle in the face of growth. It will also address how these issues can be addressed through the use of the planning process and sound planning techniques. Cr 3.

GEO 302 Gender, Work, and Space

Students will examine the ways in which the workforce is divided by gender, race, class, and ethnicity and how location and space shape and sustain such divisions. Competing explanations for why women and minorities hold jobs that differ distinctly from jobs held by other workers will be examined. Students will learn how a geographic understanding of gender, race, ethnicity, and class can help explain more fully the current position of women in the economy. Cr 3.

GEO 303 Economic Geography

This course examines the intersection between economics and geography. Emphasis is placed on the social, cultural, and political contexts within which economies develop and are regulated and restructured. Students are introduced to the skills which allow them to interpret and understand the present economic landscapes and to evaluate the factors and trends that anticipate the future. Prerequisites: one of the following: ANT 101J, GEO 101J, GEO 203J, ECO 101J, ECO 102J, or permission of instructor. Cr 3.

GEO 304 Holocene Environments

Holocene (10,000 B.P.-present) environmental processes are unique in two respects: They fall within the scope of human historical record, and they are influenced by human actions. During the lecture portion of the course, patterns and processes of human interaction with Holocene environments are explored. During the seminar portion of the course, historical and scientific data are used to develop case

studies of some of these environments. Prerequisite: one of the following: GEO 102K, ANT 102K, GEO 101J, GEY 111K, or BIO 331. Cr 3.

GEO 305 Remote Sensing

Theory and techniques of image processing and analysis for remotely sensed digital data acquired from airplane and satellite platforms. Topics include image enhancement and classifications, spectral analysis, and landscape change detection techniques. Practical applications of natural and built landscapes are considered using remotely sensed datasets and techniques. Prerequisite: GEO 108 or equivalent or permission of instructor. Cr 3.

GEO 307 History of Anglo-American Cartography

A comparative history of the creation, dissemination, and control of spatial knowledge in Britain and North America, from 1500 to 1917. This course examines which social institutions have promoted the creation and use of maps, what cultural expectations have defined the character of geographic knowledge, and how those social institutions and cultural expectations have been shaped by the practices of map making. Particular attention will be paid to the territorial aspects of the modern state, to the economic foundations of map making, and to the cultural ideologies of geographic knowledge. Prerequisite: any 200/300-level GEO or HTY course, or instructor's permission. Cr 3.

GEO 308 GIS Applications I

Students are introduced to vector-based geographical information systems (GIS). Topics include overviews of geospatial technologies, spatial analysis, GIS data, system operation, the interpretation of results, and professional practices. The course comprises a weekly lecture and laboratory. Students are evaluated with tests, laboratory assignments, and on the basis of a substantial project. Prerequisite: one of the following: ESP/GEO 108, GEO 208, GEO 305, GEY 202, GEY 204, GEO/GEY 340, or permission of instructor. Cr 4.

GEO 310 History of Geographical Thought

An historical survey of the theory and discipline of geography from its classical origins to the modern proliferation of idealist and positivist approaches. Most of the course will cover the development of the modern, secular discipline in the nineteenth and twentieth centuries. Of central concern are the relationships between imperialism (including racism), the study of other peoples by the West, and the configuration of geographical thought and institutions. Prerequisite: GEO 101J or GEO 102K, or instructor's permission. Cr 3.

GEO 320 Conservation of Natural Resources

This course examines the geographical approaches to natural resource use and management. It will offer the study of the geographic distribution and physical attributes of natural resources, their role in economic

development, and the socio-political factors governing decision making about their use. Management strategies for forests, soils, wetlands, and energy resources are assessed. Recommended prerequisites: GEO 101J, GEO 102K, or GEO 103J. Cr 3.

GEO 340/GEY 340 Digital Mapping

Students are exposed to the latest digital survey gear and integrated techniques with applications in geoscience, geography, and environmental science. Instrumentation includes both static and real-time kinematic GPS (global positioning system) and autolock servo-driven electronic total station. Detailed precision survey data are combined with geo-referenced maps and imagery in GIS software. Prerequisites: introductory course in GEY, GEO, or ESP, and additional 200-level course in any of the above areas. Cr 4.5.

GEO 350 Geography of International Development

A critical examination of theories and approaches to the study of development. Historical and contemporary perspectives will help examine the role of states, international institutions, and civil society in the development process. Examples from selected countries and regions across the world demonstrate issues facing developing countries. Recommended prerequisites: GEO 101J, GEO 103J, GEO 104J, or ANT 101J. Cr 3.

GEO 402 Urban Geography

This course examines the underlying social, economic, cultural, and political processes that have created and continue to shape the North American urban landscape. The course will combine readings, lectures, discussion, and fieldwork to explore various themes in urban geography. Topics may include industrialization, immigration, residential segregation, housing, economic development, sustainable growth, urban ecology, and planning policy. Prerequisite: GEO 101J, GEO 203J, or permission of instructor. Cr 3-6.

GEO 403 Urban Physical Geography

Past and present urban environments are characterized by intense human impacts on environmental processes, both planned and unplanned. Using a combination of field and laboratory techniques, students will develop an analytical model exploring one or more aspects of this interaction between people and urban environments. Prerequisite: one of the following: GEO 102K, GEO 402, GEY 202, or BIO 331. Cr 3.

GEO 408 GIS Applications II

Students explore the use of geographical information systems (GIS) in research and professional environments. Building upon knowledge and skills developed in GEO 308, students design and execute a substantial project. Project design focuses on generating hypotheses, planning time lines and individual work assignments, and identifying technical and data resources. Projected execution is undertaken using a

variety of raster, vector, and graphical user interface (GUI) software, as appropriate. Prerequisite: GEO 308 or permission of instructor. Cr 4.

GEO 448 GIS Internship

Students work with a public agency, private firm, municipality, nonprofit organization, or researcher, using geospatial technology to complete a clearly defined project. At the course's conclusion, students submit a portfolio including a log, samples of the work completed, and an evaluation from the on-site supervisor. Prerequisite: GEO 305 or GEO 308, and instructor permission. Cr 3.

GEO 450 Topics in Geography

This course provides in-depth analysis of relevant

topics from the perspective of an economic, political, cultural, regional or other focused approach to geographic study. The topics vary depending upon current issues of significance and the special background of the instructor. Research papers are required. Prerequisite: permission of Department. Cr 3.

GEO 458 Research Applications in GIS

An advanced workshop in geographical information systems (GIS) in which students undertake an original research project. The objective of the course is to generate a product which meets professional standards for publication or presentation at a professional meeting, allowing students to build resumes and gain exposure to a professional audience. Prerequisite: GEO 308. Cr 3.