atmospheric phenomena. Basic elements of meteorology. Relationships between humans and the atmosphere — e.g., global warming, hurricanes and tornadoes, air pollution, El Niño. (2 lecture, 2 lab hours)

Geographic Techniques (GEOG)

100. Cartography (4)
Introduction to the field. History of mapmaking, map projections, theory of map communication. Practical experience in compilation, generalization, symbolization, and design to produce original pen-and-ink drafted maps. Teaches the skill of presenting tabular data in map form. (2 lecture, 4 lab hours) (Course fee, $10)

101. Computers in Geography (4)
Introduction to computer applications in geography. Fundamental concepts of computers, Internet, word processing, programming, database, computer mapping, remote sensing, and GIS applications. No computer and statistical experience required. (2 lecture, 4 lab hours)

102. Computer Cartography (4)
Prerequisite: GEOG 101 or permission of instructor. Map design and production in a computer environment: business graphics, desktop publishing, computer-aided design, thematic mapping, three-dimensional surfaces, and graphic programming. (2 lecture, 4 lab hours)

104. Map Interpretation (4)
Prerequisite: GEOL 1, GEOG 7, or permission of instructor. Reading and interpretation of USGS-type topographic maps. Emphasis on interpretative inference concerning both physical and cultural landscapes. (2 lecture, 4 lab hours)

105. Aerial Photograph Interpretation (4)
Prerequisites: GEOL 1 or GEOG 7; GEOG 101 or permission of instructor. Aerial photography, videography, and multispectral scanner technology; image interpretation; computer-based digital processing; monitoring and mapping of terrain features; georeferencing (GPS); GIS applications. (2 lecture, 4 lab hours)

106. Advanced Aerial Photo Interpretation and Remote Sensing of Environment (4)
Prerequisite: GEOG 105. Advanced techniques of remote sensing, e.g., hyperspectral and radar imaging; advanced computer-based digital processing; advanced monitoring and mapping of terrain features; advanced GIS applications. (2 lecture, 4 lab hours)

107. Introduction to Geographic Information Systems (4)
Prerequisite: GEOG 101 or permission of instructor. Fundamental concepts of acquisition, structure, manipulation, and analysis of data in a GIS environment. Practice in the design, management, and implementation of GIS. (2 lecture, 4 lab hours)

108. Spatial Analysis in Geographic Information Systems (4)
Prerequisite: GEOG 107. Spatial analysis and modeling in a GIS environment. Spatial geometry, pattern analysis, terrain analysis, path analysis, network analysis, surface modeling, spatial autocorrelation, spatial regression, spatial classification, and spatial interpolation. (2 lecture, 4 lab hours)

109. Technical Field Geography (3)
Prerequisite: geography major or permission of instructor. Gathering and analysis of data pertaining to topics in physical or human geography. Includes an on-campus seminar to discuss issues and concepts. (1 lecture, 4-8 field hours)

110. Basic Quantitative Techniques (4)
Introduction of elementary statistical principles and techniques: probability theory, sampling, descriptive statistics, spatial statistics, hypothesis testing, correlation analysis, bivariate regression, and forecasting. (3 lecture, 2 lab hours)

Physical-Environmental Geography (GEOG)

111. Meteorology (3)
Prerequisite: GEOG 5 or equivalent. Study of the earth's atmosphere; energy exchanges and temperature; pressure and air circulation; fog, clouds, precipitation and the hydrologic cycle; cyclonic storms and orographic processes; stability and thunderstorms; weather modification and predictions with application to agriculture, aviation, and other activities.

112. World Climates (3)
Prerequisite: GEOG 5 or 111. Study of various systems of climate classification. Climates as they exist throughout the world and the reasons for their occurrence.

114. Microclimatology (3)
(Same as PLANT 134.) Prerequisite: GEOG 5 or equivalent. Micrometeorological influences on local climates including natural ecosystems and varying agricultural canopies. Local climate influences on wildlife, domestic animals, and humans. Manipulation of local climate including frost protection, irrigation and wind sheltering. Microclimates of non-uniform terrain and urban environment.

115. Violent Weather/ Climatic Hazards (3)
Prerequisite: completion of G.E. Foundation and Area B Breadth requirements. Studies hurricanes, tornadoes, thunderstorms, lightning, destructive winds, heat waves, drought, severe winter storms, and floods. Looks at physical laws and processes that account for their formation and behavior; examines human impacts. G.E. Integration IB.

117. Plant Geography (3)
Study of earth's plant cover; world floras; dispersal and migration; environmental effects on distributions; plant communities; major vegetation regions.

120. World Landform Regions (3)
Prerequisite: GEOG 7 or equivalent. A systematic analysis of types of world landform regions with emphasis on glaciated regions, arid lands, and volcanic lands.

121. United States Landform Regions (3)
Prerequisite: GEOG 7 or equivalent. Natural regions of the United States based on study of types of landforms. Analysis of unity and diversity in such landform regions as the Colorado Plateau, Sierra Nevada Province, Basin and Range, et. al.

128. Environmental Pollution (3)
A discussion of current environmental pollution problems involving the atmosphere, land, and water. The adverse effects of transportation, surface mining, sewage and waste disposal, noise, the use of pesticides, energy production and consumption, and related topics are examined.

Human-Systematic Geography (GEOG)

127. Human Impact on Nature (3)
Ways in which man's activities have altered climate, landforms, soil and water conditions, and natural vegetation.

130. Geography of World Economy (3)
An examination of the organization of world economy and human economic activities from a geographical perspective. Discussion of contemporary economic issues may include industrial restructuring, technological innovation, foreign trade and investment, Pacific Asia dynamism, Third