AMS 487 Research in Applied Mathematics
An independent research project with faculty supervision. Permission to register requires a B average and the agreement of a faculty member to supervise the research. May be repeated once. Only 3 credits of research electives (AMS 487, CSE 487, MEC 499, ESE 499, ESM 499, EST 499, ISE 487) may be counted toward engineering technical elective requirements. Prerequisites: Permission of instructor and department 0-3 credits

AMS 492 Topics in Applied Mathematics
Treatment of an area of applied mathematics that expands upon the undergraduate curriculum. Topics may include applied mathematics, statistics, or operations research and change from semester to semester. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit once, as the topic changes. Prerequisite: Permission of instructor 3 credits

ANP Anthropology, Physical and Primatology

ANP 120-E Introduction to Physical Anthropology
An introduction to the evolutionary study of humankind based on a survey of the diversity and evolutionary history of primates. The development of scientific and evolutionary thought and method. The biological basis of inheritance and variation. Human variations and adaptations in relation to the environment. Physical characteristics and behavior of living primates. Evolution of primates and current research on human origins. Three hours of lecture and one two-hour laboratory per week. 3 credits

ANP 300-E Human Anatomy
An introduction to the structure of the human body considered from both systems and regional approaches. Subject matter includes the musculoskeletal, respiratory, nervous, cardiovascular, digestive, and urogenital systems, together with an appreciation of these systems in a regional anatomical context. Laboratory sessions entail examination of plastic models, exercises in living anatomy and computer “dissection.” Prerequisite: ANP 120 or one BIO course 3 credits

ANP 320 Primate Functional Morphology and biomechanics
A broad review of methods employed in the interpretation of morphological adaptation of animals, with special focus on the order Primates. Topics include the development and application of biomechanical models, kinetics and kinematics, electromyography, and the statistical analysis of functional morphological data. Prerequisite: ANP 120 3 credits

ANP 321 Primate Evolution
The evolution of the order Primates from its origins to the appearance of the human family. Primate origins; the first primates of modern aspect; origins and adaptive radiations of monkeys; appearance and adaptations of apes and humans. Relevant topics in geology such as geochronology, paleogeography, taphonomy, and paleoecology. Prerequisite: ANP 120 3 credits

ANP 325-E Primate Behavior
An introduction to primate social systems and the factors that influence their maintenance and evolution, including foraging strategy, demographic processes, mating and rearing strategies, conflicts and coalitions, and communication. Prerequisite: ANP 120 3 credits

ANP 330-E Human Evolution
A comprehensive survey of the fossil record for human evolution from the appearance of the earliest hominids to the emergence of modern humans, with emphasis on morphological and behavioral evolution in the human lineage. Prerequisite: ANP 120 3 credits

ANP 340 Field Methods in Physical Anthropology
Methods, problems, and experience in field techniques. The course focuses on field methods such as fossil excavation, reconstruction of skeletal and dental remains, anthropometry, craniometry, and field behavioral ecology of primates. Prerequisites: ANP 120 or BIO 201; permission of instructor 3-6 credits

ANP 350 Methods in Studying Primates
Introduction to the concepts and practical skills needed to conduct scientific work, particularly in the study of primates, including how to collect and analyze data focusing on habitat description, primate densities, use of space, and social interactions. Topics include design and presentation of research; ecological field methods; behavioral observations and other techniques. Students are required to plan a small research study and to present their proposal in class. Some computer work outside class required. Prerequisite: ANP 120 or BIO 201 3 credits

ANP 360-H Primate Conservation
Review of endangered species of primates and case histories of conservation programs in Asia, Africa, South America, and Madagascar, highlighting different problems and solutions. Advisory Prerequisite: ANP 120 or BIO 201 3 credits

ANP 391 Topics in Physical Anthropology
Discussion of a topic of current interest in physical anthropology. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes. Prerequisite: ANP 120 Advisory prerequisite: One other ANP course 3 credits

ANP 403 Problems in Physical Anthropology
Research and discussion of selected topics in physical anthropology. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes. Prerequisite: ANP 120 or BIO 201 3 credits

ANP 404 Human Osteology
A detailed study of the anatomy of the human skeleton with special emphasis on the interpretation of skeletal remains from archaeological contexts. Consideration is given to the growth, structure, and function of bones, and to forensic aspects such as the determination of age, sex, stature, and pathology from skeletal remains. Students conduct a research project on a human skeleton. Prerequisites: ANP 300; permission of instructor 3 credits

ANP 447 Readings in Physical Anthropology
Individual advanced readings on selected topics in physical anthropology. May be repeated up to a limit of 6 credits. Prerequisites: ANP 321 and 330; permission of instructor 3 credits

ANP 475 Undergraduate Teaching Practicum I
Work with a faculty member as an assistant in one of the faculty member’s regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Prerequisites: U3 or U4 standing; anthropology major; 3.00 g.p.a.; permission of instructor; permission of director of undergraduate studies 3 credits, S/U grading

ANP 476 Undergraduate Teaching Practicum II
Work with a faculty member as an assistant in one of the faculty member’s regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served. Not for major or minor credit. Prerequisites: U3 or U4 standing; anthropology major; 3.00 g.p.a.; permission of instructor; permission of director of undergraduate studies 3 credits, S/U grading

ANP 487 Independent Research in Physical Anthropology
Independent research projects carried out by upper-division students. The student must propose the research project, carry it out, analyze the data, and submit the results in a written form acceptable to the sponsor. May be repeated up to a limit of six credits. Prerequisites: Two 200- or 300-level ANP courses; permission of instructor and department 0-6 credits

ANP 488 Internship in Physical Anthropology
Participation in state, local, and national public and private agencies and organizations. Students are required to submit written progress reports and a final written report on their experiences to the faculty sponsor and the department. May be repeated to a limit of 12 credits. Prerequisites: 15 credits in anthropology; permission of instructor and department 0-6 credits, S/U grading

ANP 495 Senior Honors Project in Anthropology
First course of a two-semester project for anthropology majors who are candidates for the degree with honors. Arranged in consultation with the department through the director of undergraduate studies, the project involves independent readings or research and the writing of a paper under the close supervision of an appropriate faculty member on a suitable topic selected by the student. Students enrolled in ANP 495 are obliged to complete ANP 496 the following semester. Students receive only one grade upon completion of the sequence ANP 495-496. Prerequisite: Admission to the anthropology honors program 3 credits
ANT 358-J Ways to Civilization
A comparative study of processes of cultural evolution from simple agricultural societies to the achievement of civilization in different parts of the world. Emphasis is on current theories of state formation and on how these theories are supported by cultural evidence, especially from the six 'pristine' states of Mesopotamia, Egypt, Indus Valley, China, Mesoamerica, and Peru.
Prerequisite: ANT 104
3 credits

ANT 359-J Ways to Civilization
A comparative study of processes of cultural evolution from simple agricultural societies to the achievement of civilization in different parts of the world. Emphasis is on current theories of state formation and on how these theories are supported by cultural evidence, especially from the six 'pristine' states of Mesopotamia, Egypt, Indus Valley, China, Mesoamerica, and Peru.
Prerequisite: ANT 104
3 credits