Descriptive - ANIMAL HUSBANDRY

Courses

928. Comparative Nutrition - Minerals
Spring of even-numbered years. 3 credits. BCH 452, PSL 302. Interdepartmental with Human Nutrition and Foods.
Forms and location in body, metabolic roles, deficiency and toxicity signs, interrelationships, requirements and biological availability of sources.

929. Comparative Nutrition - Vitamins
Spring of odd-numbered years. 3 credits. BCH 450 and a previous course on principles of nutrition. Interdepartmental with Human Nutrition and Foods.
Chemical and physical properties, standards of activity, occurrence, metabolic roles, antivitamins, deficiency and toxicity signs, requirements and factors affecting requirements.

963. Genetics of Breed Improvement
Winter of odd-numbered years. 3 credits. ANS 361, STT 421.

964. Breeding Systems and Plans
Spring of odd-numbered years. 3 credits. ANS 963.
Biometric relations between related animals. Role of selection in changing populations. The effects of different mating systems.

999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

ANIMAL SCIENCE ANS

College of Agriculture and Natural Resources

101. Animal Science
Fall. 5(4-2)
Survey of the animal industries including history, economic geography, anatomy and physiology, nutrition, and feed usage, and systems of commercial livestock and poultry production.

213. Animal Science Seminar
Fall. 1(2-0)
Animal science industries. Industry representatives will be utilized to discuss particular areas.

325. Principles of Animal Nutrition
Spring. 5(5-0) CEM 132; BCH 200 recommended.
Livestock feeds and their nutrients, functions of and requirements for nutrients, evaluation of feeds. Feeding practices. Formulation of rations for beef and dairy cattle, horses, poultry, sheep and swine.

361. Principles of Animal Breeding
(461) Winter. 3(3-0) B.S 211 or a course in Mendelian genetics. Quantitative and qualitative traits. Gene frequency. Statistical tools used in animal breeding. Effect of selection and mating systems on animal population.

433. Ruminant Nutrition
(DRY 431) Winter. 4(3-2) ANS 325, Interdepartmental with the Department of Dairy Science.
Principles of ruminant nutrition and application to actual feeding practices in commercial dairy and beef operations. Rumen fermentation as related to feed utilization, growth, milk production and milk composition.

450. Toxicology of Food Producing Animals
Spring. 4(4-0) BCH 240, BCH 200, Interdepartmental with the Department of Dairy Science.
Fatal and effects of toxic chemicals in food-producing animals; impact on animal production; residues in food products, safety assessment and control methods.

525. Animal Nutrition
Fall. 3(4-2) BCH 401.

826. Animal Nutrition
Spring. 4(4-0) One course each: biochemistry, physiology, and approval of department.
Nutrition basic to animal feeding. Application of chemistry and physiology to nutrition. Nutrient requirements for normal body functions. Techniques involved in nutrition research; readings in current literature.

854. Design of Animal Experiments
Spring. 4(4-0) STT 423.
Choice, implementation and statistical analysis of experimental plans for research with animals. Designs for reduction of experimental error. Analysis of experiments with complex structure or unequal subclass numbers.

855. Analysis of Unbalanced Multifactor Data
Spring. 4(4-0) STT 423.
Applied analysis techniques of field or survey data with unbalanced subclass numbers in field and biological sciences; predictions utilizing several variables; estimation of effects of factors and their interactions.

965. Biometrical Genetics
Fall of odd-numbered years. 4(4-0) ANS 855 and one course in quantitative genetics.
Genetics model for quantitative traits; estimation of components of variance; correlation of relatives; Selection Index theory; multi-factor and multivariate responses in designed experiments.

ANTHROPOLOGY ANP

College of Human Medicine
College of Osteopathic Medicine
College of Social Science

100. The Origin of Man and Culture
Fall, Winter, Spring, Summer. 4(3-1)
Introduction to physical anthropology: the position of man in the animal kingdom, the genetic mechanisms of evolution, human beginnings and the fossil record, racial evolution and racial types among modern man, the anticipation of culture among other animals and the development of human culture, and culture as an adaptive mechanism.

171. Introduction to Sociocultural Anthropology (S)
Fall, Winter, Spring, Summer. 4(3-1)
Comparison of ways of life among primitive, peasant and civilized peoples. Implications of these styles of life for understanding of human behavior in general and exotic cultures in particular.

1DC. Resource Ecology and Man
For course description, see Interdisciplinary Courses.

1DC. Introduction to Latin America
For course description, see Interdisciplinary Courses.

221. Introduction to Social and Cultural Analysis
Fall, Spring. 4(3-1) ANP 171.
Basic theoretical framework of socio-cultural analysis: structural functionalism, evolutionism, and cultural ecology.

250. Culture, Environment and Adaptation
Fall. 4(3-1)
Culture as an adaptive process - as developed in the million years of human history and still influencing environmental quality, population control, and allocation of resources in primitive and modern societies.

1DC. Continuing Revolution in China: Problems and Approaches
Fall. 4(4-0) ANP 175.
Comparative analysis of the status of women emphasizing non-Western cultures and societies. Economic and domestic division of labor between the sexes as factor underlying division of status, power and authority.

262. Status of Women in Culture and Society: A Comparative View
Fall. 4(4-0)
Comparative analysis of status of women and its relationship to social and political life in the context of 20th-century Western Europe, North America, Asia and Latin America.

265. Vanished Peoples and Lost Civilizations
Fall, Spring. 4(4-0)
Concepts of cultural evolution and origins of civilization as found in popular literature ranging from Atlantis to Charioti of the Gods.

266. War and Aggression
Fall, Spring. 3(3-0)
The question "What makes friends and what makes enemies" is examined from the standpoint of cultural anthropology. Violence-prone cultures and peaceful ones are compared for factors influencing human aggression.
Several cultural complexes and culture types—from hunting and gathering through complex civilization—of East, Southeast, and South Asia. The cultures and nature of their development will be examined. Past and present significance of cultural stability and change will be seen in a comparative framework.

Racial and cultural problems confronting the African peoples.

Interwoven nature of cultural traditions in the modern world. Consideration of how people of developing nations respond to the dominant cultural forces of industrialized nations.

Field trips may be required.

Anthropological study of peasantry. Comparative examination of the rural societies and cultures of Asia, Europe, and Latin America.

Anthropological study of health behavior. Focusing on conflicts between behavior and nutritional needs at various stages of life cycle. Anthropological, psychological, and social influences affecting food behavior are analyzed.

Origins and evolutionary meaning of human physical variability. Racial variation as an adaptive phenomenon. Roles of genetic and environmental influences in creating the phenotype.

Fossil evidence and theory pertaining to human evolution during the last four million years.

Origins and evolutionary meaning of human physical variability. Racial variation as an adaptive phenomenon. Roles of genetic and environmental influences in creating the phenotype.

Anthropological and historical analysis of global diversity and interdependence since the 16th century.

Focus on such issues as the impact of the West on the non-western world, industrialization, modernization, population and natural resources.

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Courses.
456. The Practice of Historical Archaeology
Spring of even-numbered years. 4(4-0) ANP 263 or approval of department.
Course content includes the various methods of artifact typology. Artifact classes, including ceramics, trade goods, firearms, and architecture, are examined for purposes of identifying attributes useful in the areal and temporal placement of historic sites.

457. Public Archaeology
Fall of even-numbered years. 3(3-0) ANP 100; at least one 400-level archaeology course.
History of public archaeology; legislation and review procedures at State and Federal level; contract requirements for reports and field work; roles of amateurs, professional certification and private contractors.

463. Social Anthropology
Fall, Spring 4(4-0) ANP 171 or approval of department.
Organization and structure of non-Western societies, ranging from simpler tribal and peasant societies to complex, centralized social institutions, such as those based upon kinship, sex, age and status, analyzed for specific groups.

464. Religion and Culture
Winter. 4(4-0) ANP 171 or SOC 241 or approval of department.
Religious beliefs and magical practices of primitive peoples and functions of magic and folklore in contemporary society. Religion as an institution in society.

465. Symbolic Anthropology
Winter. 4(4-0) ANP 221 or ANP 463 or ANP 464, or approval of department.
Course explains how human perception and communication are guided by systems and meanings and relates systems of thought to systems of action. Examples from western and non-Western cultures.

466. Language and Culture
Fall, Spring 4(4-0) Approval of department. Interdepartmental with the Department of English.
A survey exploring the interconnectedness of language and culture. Special areas to be emphasized include: Child Language Learning; Linguistic and Cultural Contact Phenomena; "Specialized" Languages; such as Cant, Argot, Trade Jargon, Lingua Franca; "Hybridization" and "Substratum" Language and Cultural Change; a brief examination of Theories of Origins and of the Sapir-Whorf Hypothesis.

467. Systems of Rank
Spring of odd-numbered years. 4(4-0) ANP 221 or ANP 463 or approval of department.
A comparative study of systems of rank such as age grading, sex, spatial, castes, ethnicity, and class systems. The course emphasizes both symbolic and transactional analyses of rank.

468. Cultural Areas of the World
Winter. Summer. 4(4-0) May reenroll for credit when new area is given. ANP 100 or ANP 171 or SOC 241 or approval of department.
Social character of people, social organization, culture of area in relationships to social heritage, local conditions and world affairs. Areas emphasized will vary with staff and student's interest: Africa, American Indian, Latin America, Mediterranean, Northeast Asia, Pacific, and Southeast Asia.

472. Anthropology of Legal Systems
Spring of even-numbered years. 4(4-0) ANP 221 or ANP 463 or approval of department.
A comparative examination of legal ideas in selected non-Western preindustrial and peasant societies; parallels and contrasts are drawn with key legal ideas of modern Western systems.

473. Culture and Personality
Fall, Spring. 4(4-0) One 300 level anthropology or sociology course. Interdepartmental with the Department of Sociology.
Human nature in evolutionary and cross-cultural perspective. Special attention to relating theories of anthropology and psychology to methods of studying personality in non-Western societies.

474. Culture and Economic Behavior
Winter. 4(4-0) ANP 221 or ANP 463 or approval of department.
Economic systems of changing cultures in Asia, Africa and Latin America. The cultural matrix of economic transactions and relations of economic and other social and cultural institutions seen in a comparative framework. Emphasis is placed on traditional agricultural or tribal communities.

475. Political Anthropology
Spring of odd-numbered years. 4(4-0) ANP 221 or ANP 463 or approval of department.
Political systems of changing cultures in Asia, Africa and Latin America. Relation between political and other social institutions and analysis of the organization of conflict in non-Western societies. The relation of tribal and peasant politics to national politics in development countries seen in a comparative framework.

IDC. Canadian-American Studies
For course description, see Interdisciplinary Courses.

479. Anthropology Capstone Course
Fall, Spring. 4(4-0) Senior Anthropology majors. Seminar on the integration of the subdivisions of anthropology and its distinctions from other approaches in the social sciences; perspectives on future directions of anthropological inquiry and options for careers.

481. Cross-Cultural Relations in the Modern World
Winter of even-numbered years. 4(4-0) ANP 473. Interdepartmental with the Department of Sociology.
Relationship of native peoples to world-wide forces and reactions of native peoples to world struggle for power. Problems involved in administration of programs for non-Western societies.

485. Methods of Archaeological Research
Spring. 4(3-1) ANP 450 or approval of department.
Methods of doing anthropological research through archaeology. Problem formulation, hypothesis development, testing; principles and procedures of data recognition, collection, preliminary laboratory processing and preliminary analysis, preparation for field archaeology.

486. Practicum in Field Archaeology
Summer. 2 to 12 credits. May reenroll for a maximum of 20 credits. Approval of department.
Application of methods and techniques of field archaeological research using actual sites and in the context of participation in a research program. Small groups work closely with staff in the execution of research designs.

490. Topics in Anthropology
Fall, Winter, Spring. Summer, 2 to 6 credits. May reenroll for a maximum of 20 credits when a different topic is given. Approval of department.
Experimental courses and courses taught by visiting scholars.

495. Topics in Medical Anthropology
Fall, Winter, Spring. 2 to 6 credits. May reenroll for a maximum of 16 credits. Approval of department.
Western and non-Western health care and medical systems, relationships between cultural systems and treatment of illness, cross-cultural analysis of health maintenance and medical delivery.

801. Core Seminar in Ethnographic Analysis I
Fall. 4(4-0) Approval of department.
Develops professional competence in the analytical assessment of monographic studies in social anthropology and examines a selected range of analytical issues in relation to their ethnographic contexts.

802. Core Seminar in Ethnographic Analysis II
Winter. 4(4-0) ANP 801.
Continuation of ANP 801.

803. Introduction to Paleoanthropology I
Winter. 4(4-0) Approval of department.
Exploration of evolutionary theory followed by an examination of data and modes of analysis pertinent to the study of hominid evolution and the development of culture through the Middle Pleistocene.

804. Introduction to Paleoanthropology II
Spring. 4(4-0) ANP 803.
Exploration of hominid evolution and cultural development from the Middle Pleistocene through the Early Holocene. Emphasis on selected issues illustrating the ways in which paleoanthropologists solve problems.

805. History of Anthropological Theory
Fall. 3(3-0) ANP 802, ANP 804 or approval of department.
A review of the various schools of thought, important personalities, and principal concepts that have contributed to the development of anthropological theory.
825. **Seminar in Cross-Cultural Relations**
Winter of odd-numbered years. 4(4-0) Approval of department. Interdepartmental with the Department of Sociology. Analysis of the relations between superordinate and subordinate societies and between coordinate societies and cross-cultural exchange programs.

827. **Anthropological Theorists**
Winter. 4(4-0) May reenroll for credit with approval of department. Approval of department. Review of current theoretical problems in social and cultural anthropology.

830. **Kinship Studies**
Winter of odd-numbered years. 4(4-0) Approval of department. The course will raise the question of what kinship is and why it has been such a central topic in anthropology. Various controversies and theoretical trends will be presented and analyzed.

831. **Linguistic Anthropology**
Winter. 5(3-2) Approval of department. The nature of language; techniques for the description and comparison of languages as an anthropological tool; language and culture.

833. **Anthropological Topics in Prehistory**
Spring. 4(4-0) May reenroll for a maximum of 12 credits when other problems are offered. Approval of department. Relation of archaeology to the other fields of anthropology on both a theoretical and practical level. Archaeological data are used to introduce problems of long-range cultural change and development.

835. **Human Osteology and Osteometry**
Spring of even-numbered years. 5(3-4) Approval of department. Identification of human bones and fragments; age, sexing and determining the age of skeletal remains; measuring techniques for cranial and postcranial remains; the more common forms of paleopathology.

850. **Archaeological Methods and Techniques**
Winter. 4(4-0) Approval of department. Seminar outlining archaeological method and the role of technique in the strategy of archaeology. Techniques and problems of information retrieval will be emphasized.

856. **Methodology of Anthropological Research**
Winter. 1 to 12 credits. Approval of department. Seminar in problems of anthropological investigation considered in the framework of history and philosophy of science. Relevance of various field techniques, methods of data gathering and data handling, and strategies of analysis for various problems are treated.

865. **Environment, Technology, and Culture**
Winter of even-numbered years 4(4-0): Approval of department. Cultural ecology, study of the relation of man and his physical environment, the role of technology in mediating between the two. Comparative analysis of the interdependence of social organization, technology and environment. Case histories of cultural and social change arising from technological innovations.

870. **Applied Anthropology**
Spring of odd-numbered years. 4(4-0) Approval of department. Theoretical and methodological problems involved in planned social change. Course will focus on field experience in the local community. Designed mainly for graduate students having professional interest in the application of social change.

872. **Seminar in Special Subject**
Fall, Winter, Spring, Summer. 2 to 6 credits. May reenroll for a maximum of 24 credits when new fields are offered. Approval of department. Special fields of study will include any area of anthropology selected.

875. **Individual Research Projects**
Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 24 credits with approval of department. Approval of department.

880. **Individual Readings**
Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 24 credits with approval of department. Approval of department.

889. **Master's Thesis Research**
Fall, Winter, Spring. Variable credit. Approval of department.

999. **Doctoral Dissertation Research**
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

**ART**

**College of Arts and Letters**

**History of Art**

205. **Introduction to Art**
Fall, Winter, Spring. 3(3-0) Not open to majors. Painting, sculpture and architecture from the time of the Greeks to the present. Individual works of art examined intensively, as regards both their formal qualities and the manner in which they exemplify the shifting patterns of Western culture.

206. **History of Western Art**
Fall. 4(4-0) Painting, sculpture, architecture and decorative art from prehistoric times to the present. Emphasis is given to the forms and art typical of each period and indicates the aesthetic qualities which give them artistic significance. Work in first term covers Prehistoric, Egyptian, Mesopotamian, Greek, Roman, Early Christian and Byzantine periods.

207. **History of Western Art**
Winter. 4(4-0) Continuation of HA 206. Early Medieval, Romanesque, Gothic, Renaissance and Mannerist periods.

208. **History of Western Art**
Spring. 4(4-0) Continuation of HA 207. Baroque, Rococo, Neoclassic and subsequent periods to contemporary art.

1DC. **Introduction to Latin America II**
For course description, see Interdisciplinary Courses.

304. **Greek Art and Archaeology**
(404.) Winter. H A 206 or approval of department. The history of painting, sculpture, and architecture of Ancient Greece from the Bronze Age through the Hellenistic period. The history of archaeological excavations of selected sites.

305. **Roman Art and Archaeology**
(405.) Spring. H A 206 or approval of department. The history of painting, sculpture, and architecture of Ancient Rome from the Republic through the 4th century. The history of archaeological excavations of selected sites.

350. **Women in Modern Art**
Fall. 3(3-0) H A 208 recommended. Contributions of selected European and American women artists and architects active since the late nineteenth century; analysis of their oeuvres and their changing relationships to mainstream artistic/critical developments.

355. **History of Photography**
Spring. 3(3-0) H A 208 or approval of department. Evolution of the techniques and aesthetics of photography, and their interrelationship. Appreciation of contemporary trends, sources, and artists.

406. **Ancient Painting**
Spring of odd-numbered years. 4(4-0) H A 206 or approval of department. Ancient Greek and Roman painting; analysis of their oeuvres and their changing relationships to mainstream artistic/critical developments.

407. **Ancient Sculpture**
Fall of odd-numbered years. 4(4-0) H A 206 or approval of department. The sculpture of Ancient Greece and Rome, from the Bronze Age through Early Christian times.

408. **Ancient Architecture**
Winter of even-numbered years. 4(4-0) H A 206 or approval of department. The architecture of Ancient Greece and Rome, from Mycenaean times to the 5th century A.D., with special emphasis on the religious architecture of Classical Greece and Imperial Rome.

410. **Early Christian and Byzantine Art**
Fall. 4(4-0) H A 206 or approval of department. Development of Christian art and architecture from the third through eighth centuries in the west, and through the Macedonian Renaissance in the east.