

936 Protein Nutrition and Metabolism
Spring of even years. 3(3-0) Interdepartmental with Human Nutrition and Foods.

Nutritional and endocrine regulation of protein synthesis and degradation, protein quality assessment, protein status, protein-energy malnutrition. Protein metabolism during exercise. Metabolism, digestion, and absorption of amino acids and proteins.

937 Mineral and Vitamin Nutrition and Metabolism
Spring of even years. 3(3-0) Interdepartmental with Human Nutrition and Foods. P:M: (BMB 461 and BMB 462)

Forms and locations of mineral elements in the body, metabolic functions, deficiencies, and toxicities, interrelationships and quantitative requirements. Significant vitamins and mineral interrelationships relative to bone metabolism, antioxidant health and erythropoiesis.

970 Advanced Biometrical Methods for Quantitative Genetics
Fall of even years. 3(3-0) RB: (ANS 870 and STT 441)

Advanced biometrical methods applied to inferential problems in animal breeding and genetics. Likelihood and Bayesian methods for estimation of genetic parameters and prediction of genetic merits. Quantitative genetic analysis of discrete, censored, survival, and growth/lactation curve data.

999 Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to doctoral students in Animal Science. Approval of department.

Doctoral dissertation research.

110 Foundations of ANR Communications: Learning and Leadership
Fall. 2(1-2) R: Open only to students in Agriculture and Natural Resources Communications major or Agriscience major or the Agriculture and Natural Resources - No Preference undergraduate program. SA: AEE 101

Basic information systems applied to ANR communications, learning, and leadership. Communications skills, research techniques, learning theory, technology, and personal and professional development.

111 Applications of ANR Communications: Learning and Leadership
Spring. 2(1-2) RB: (AEE 110) R: Open only to students in the Agriculture and Natural Resources Communications major or Agriscience major or Agriculture and Natural Resources - No Preference undergraduate program. SA: AEE 101

Application of information systems theory, communications skills, research techniques, learning theory, and technology to agriculture and natural resource problems. Issue identification, critical thinking, problem solving, team building, and working with diversity.

120 Current Issues in Agriculture and Natural Resources
Fall. 3(3-0) R: Open only to freshmen or sophomores in the Institute of Agricultural Technology. Not open to students with credit in AT 040 or AT 057 or ABM 400.

Implementation and interpretation of public law related to agricultural and environmental policy. Role of government in regulating technological and economic change related to agriculture and the environment. Non-governmental organizations.

202 Michigan's Agricultural and Natural Resources Heritage
Fall. 2(2-0) Interdepartmental with Agriculture and Natural Resources. Administered by College of Agriculture and Natural Resources. P: Completion of Tier I writing requirement.

Michigan's historical agricultural and natural resources. Orientation to sources for research and learning. Self-directed study integrating agricultural and natural resources heritage to family, community and careers.

205 Agricultural Industries Advanced Seminar
Fall. 2(2-0) R: Open only to sophomores in the Institute of Agricultural Technology. Not open to students with credit in AT 057 or AEE 057.

Career preparation. Individual and social responsibilities.

210 Approaches to ANR Technology and Information Systems
Fall. 2(1-2) RB: (AEE 110 or concurrently or AEE 101) R: Open only to students in Agriculture and Natural Resources Communications or Agriscience major. SA: AEE 201

Development of technology and learning resources in agriculture and natural resources. Graphic design, electronic publishing, database management, evaluation techniques, and educational technology.

211 Applications of ANR Technology and Information Systems
Spring. 2(1-2) RB: (AEE 111 or concurrently or AEE 101) R: Open only to students in the Agriculture and Natural Resources Communications or Agriscience major. SA: AEE 201

Application of technology and learning resources and systems in agriculture and natural resources for external audiences. Production of graphic designs, publishing and production of other informational materials.

212 American Agrarian Movements
Spring. 3(3-0) SA: AEE 203
Historical perspectives of America by pioneers, farmers, ranchers and others who cultivated the land from 1700s to 1930. Agricultural movements, trends and development.

220 Agriculture and Natural Resources Policy
Spring. 2(2-0) P: (AEE 120) R: Open only to sophomores in the Institute of Agricultural Technology. Not open to students with credit in AT 057 or ABM 400.

Public policy affecting agriculture and natural resources. Legislative processes. Special interests. Governmental and fiscal responsibility. Citizen participation.

300 Approaches to Information Management and Evaluation
Fall. 3(3-0) P: Completion of Tier I writing requirement. RB: (AEE 211 and AEE 210) R: Open only to students in the Agriculture and Natural Resources Communications or Agriscience major. SA: AEE 301

Advanced information and evaluation techniques to plan, implement and assess domestic and international communication, marketing, and educational projects in agriculture and natural resources. Qualitative and quantitative methods of inquiry.

311 Applications of Information Management and Evaluation
Fall, Spring. 1(0-2) P: Completion of Tier I writing requirement. RB: (AEE 300) R: Open only to students in the Agriculture and Natural Resources Communications or Agriscience major. SA: AEE 301

Marketing, educational, and public relations campaigns to solve and address problems in agriculture and natural resources. Application of distance education technology and field work to domestic and international projects.

314 Issues in Agricultural and Environmental Education Programs
Fall. 3(2-2) RB: (AEE 110 or TE 150) and (FW 203) R: Not open to freshmen or sophomores. SA: AEE 303

Assessment and analysis of current issues and their impact on agricultural and environmental education programs.

ANR EDUCATION AND COMMUNICATION SYSTEMS AEE

Department of Community, Agriculture, Recreation and Resource Studies College of Agriculture and Natural Resources

100 Public Speaking in Agriculture and Natural Resources
Fall, Spring. 2(2-0) R: Open only to students in the Institute of Agricultural Technology.
Public speaking skills for agriculture and natural resource professionals. Organizing and delivering effective speeches for diverse audiences.

105 Agricultural Industries Seminar
Fall. 1(2-0) R: Open only to freshmen in the Institute of Agricultural Technology.
Issues of agricultural industries. Preparation for a successful academic career.

ANR Education and Communication Systems—AEE

- 401 Agricultural and Natural Resources Communications Campaigns**
Fall, Spring, Summer. 3(3-0) P: Completion of Tier I writing requirement. R: Open only to juniors or seniors in the College of Agriculture and Natural Resources or the College of Communication Arts and Sciences. Not open to students with credit in AEE 300 or AEE 410.
Planning and execution of agricultural and natural resource communication campaigns. Emphasis on theories, strategies and techniques using mass and controlled media channels.
- 410 Approaches to Problems in Communications and Education (W)**
Fall. 3(3-0) P: Completion of Tier I writing requirement. RB: (AEE 311 and AEE 300) R: Open only to students in the Agriculture and Natural Resources Communications or Agriscience major. Not open to students with credit in AEE 401.
Team approach to current issues in agriculture and natural resources communications and education. Solving advanced problems with peers and professionals. Professional standards and ethical practice.
- 411 Applications of Problems in Communications and Education**
Fall, Spring. 1(0-2) P: Completion of Tier I writing requirement. RB: (AEE 410) R: Open only to students in the Agriculture and Natural Resources Communications or Agriscience major. Not open to students with credit in AEE 401.
Developing solutions for client problems through field work in agriculture and natural resources communications and education. Transition into the world of work.
- 412 Agricultural and Natural Resources Leadership and Education**
Fall, Spring, Summer. 3(3-0) R: Open only to juniors or seniors. SA: AEE 403
Characteristics of leadership and group dynamics. Development of personal leadership skills. Educational methods and learning styles.
- 475 International Studies in ANR Communications & Ag Science**
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department; application required.
Study and travel experience emphasizing contemporary problems affecting Agriculture and Natural Resources in world, national, and local communities.
- 476 Field Studies in Agriculture and Natural Resources Education and Communication**
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
ANR education and communication issues and problems in Michigan and the United States. Field trips required.
- 490 Independent Study**
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. R: Open only to Agriscience or Agriculture and Natural Resources Communications majors. Approval of department; application required.
Individual study in areas of agriscience, extension education, or agricultural and natural resources communications.
- 491 Selected Topics**
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to Agriscience or Agriculture and Natural Resources Communications majors. Approval of department.
Topics in agriculture and natural resources communications or agriscience and natural resources education.
- 493 Professional Internship**
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. RB: (AEE 210) R: Not open to freshmen. Approval of department; application required. A student may earn a maximum of 6 credits in all enrollments for any or all of these courses: ABM 493, AEE 493, ANR 493, ANS 493, CSS 493, EEP 493, FIM 493, FW 493, HRT 493, PKG 493, PLP 493, PRR 493, and RD 493.
Professional internship for students majoring in Agriculture Communications and Agriscience.
- 802 Educational Leadership in Agriculture and Natural Resources**
Fall of odd years. Spring of odd years. Summer of even years. 3(3-0)
Organizing and managing strategies for agriculture and natural resource programs.
- 803 Instructional Strategies in Agriculture and Natural Resources**
Fall of even years. Spring of even years. Summer of odd years. 3(3-0)
Assessment of learning needs. Development, selection, use and evaluation of teaching strategies. Emphasis on agriscience education and adult learners.
- 804 Communication Strategies in Agriculture and Natural Resources**
Fall of odd years. Spring of odd years. Summer of even years. 3(3-0) R: Open only to seniors or graduate students in the College of Agriculture and Natural Resources.
Information delivery systems and presentation techniques for varied agriculture and natural resources audiences.
- 806 Program Planning and Evaluation in Agriculture and Natural Resources**
Fall of even years. Spring of even years. Summer of odd years. 3(3-0)
Principles, theories, and practices in developing and evaluating state and local agriculture and natural resources programs.
- 807 Educational Research Methods in Agriculture and Natural Resources**
Fall of even years. Spring of even years. Summer of odd years. 3(3-0) R: Open only to graduate students in the College of Agriculture and Natural Resources.
Planning, designing, conducting, and reporting research in agriculture and natural resources.
- 808 Learning at a Distance**
Fall of odd years. Spring of odd years. Summer of even years. 3(3-0) RB: (AEE 804 and AEE 806)
Development, implementation and evaluation of distance education programs.
- 811 U.S. Land Grant System and the Extension Model**
Spring of odd years. 3(3-0)
Function, organization, and operation of extension education programs with special emphasis on the U.S. Land Grant System and the extension delivery system.
- 812 Adult Learner in Agriculture and Natural Resources**
Fall of even years. 3(3-0) SA: AEE 911
Theories and philosophies of the adult as a learner in out-of-school settings. Particular emphasis on implications for agriculture and natural resources.
- 822 Experiential Education in Agriculture and Natural Resources**
Summer of odd years. 3(3-0) R: Open only to graduate students in Agricultural and Extension Education.
Principles and practices of agriscience laboratory teaching in high schools.
- 875 International Studies in Agricultural and Extension Education**
Fall, Spring, Summer. 1 to 4 credits.
Critical analysis of reflection on an international experience structured around the use of a reflective journal, relevant literature, and a series of structured writing exercises. Role of education within the agriculture and natural resources sector, issues of cultural influence, and future perspectives.
- 884 Outreach in Fisheries, Wildlife and Natural Resources Management**
Spring of odd years. 3(3-0) Interdepartmental with Fisheries and Wildlife. Administered by Department of Fisheries and Wildlife. RB: Previous course in communications recommended.
Theory, research, practice and current issues in using outreach in fisheries, wildlife and natural resource management.
- 890 Independent Study in Agricultural and Extension Education**
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. R: Approval of department.
- 891 Selected Topics in Agricultural and Extension Education**
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in Agricultural and Extension Education.
Contemporary issues and problems in agricultural and extension education.
- 893 Professional Field Experience in Agricultural and Extension Education**
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. R: Open only to graduate students in Agricultural and Extension Education.
Practice, observation, and analysis through field experiences.
- 898 Master's Applied Project**
Fall, Spring, Summer. 1 to 5 credits. A student may earn a maximum of 5 credits in all enrollments for this course. R: Open only to master's students in the Agricultural and Extension Education major.
Master's Plan B applied project.

899 Master's Thesis Research
 Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to master's students in the Agricultural and Extension Education major.
 Master's thesis research.

901 International Development Education in Agriculture and Natural Resources
 Spring of odd years. 3(3-0)
 Systems of agricultural and extension education in different countries. Philosophical and structural differences and similarities of selected countries and models throughout the world.

902 Advanced Educational Leadership in Agriculture and Natural Resources
 Spring of even years. 3(3-0) RB: (AEE 802) SA: AEE 912
 Advanced management and administration practices within agriculture and natural resources programs.

907 Advanced Educational Research in Agriculture and Natural Resources
 Fall of odd years. 3(3-0) RB: (AEE 807 and STT 421)
 Selection and development of research instruments and quantitative data analysis for educational research in agriculture and natural resources.

990 Advanced Independent Study in Agricultural and Extension Education
 Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course.

991 Advanced Selected Topics in Agricultural and Extension Education
 Fall, Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course.
 Contemporary issues and problems in agricultural and extension education.

993 Advanced Professional Field Experience in Agricultural and Extension Education
 Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course.
 Practice, observation, and analysis through field experiences.

999 Doctoral Dissertation Research
 Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to Ph.D. students in Agricultural and Extension Education.
 Doctoral dissertation research.

201 Sociocultural Diversity
 Fall, Spring, Summer. 3(3-0)
 Origins and diversity of cultural systems. Theories of culture. Patterns of kinship. Religious, economic, and political institutions.

202 Biocultural Evolution
 Fall, Spring, Summer. 3(3-0)
 Nature and function of culture and its relationship to human biology. Principles of change from hominid origins to present.

203 Introduction to Archaeology
 Fall, Spring. 3(3-0) SA: ANP 360
 Theory, methodology, and techniques of archaeology. Applications to questions about past human behavior. History and concepts of archaeology as an anthropological subdiscipline.

220 Gender Relations in Comparative Perspective
 Spring. 3(3-0)
 Gender relations in different cultures. Economic and domestic division of labor between the sexes as a factor underlying power differentials.

264 Great Discoveries in Archaeology
 Spring. 3(3-0)
 Great discoveries in archaeology that have captured the public's imagination and shaped Western thought, from Olduvai Gorge and Stonehenge to Macchu Pichu.

270 Women and Health: Anthropological and International Perspectives
 Fall. 3(3-0)
 Cross cultural perspectives on the health implications of differing life circumstances for women. Women as health-care consumers and providers. Health and women's life cycles.

280 The Anthropological Film
 Spring. 3(3-0)
 Ethnographic film as a record of vanishing cultures, a tool for ethnological analysis, and a source of perspectives on different cultures and variability within cultures.

320 Social and Cultural Analysis
 Fall, Spring. 4(4-0) P: (ANP 101 or ANP 201) and completion of Tier I writing requirement.
 Major theoretical traditions of cultural anthropology. Functionalism, symbolism, structuralism, and contemporary developments.

321 Anthropology of Social Movements
 Fall. 3(3-0) P: (ANP 101 or ANP 201)
 How social movements within different cultures around the world organize, create or impede change on the basis of class, religion, race, ethnicity, language, and territory.

322 Peasants and Social Change in the Developing World
 Spring. 3(3-0) P: (ANP 101 or ANP 201)
 Cross-cultural perspective on patterns and variations in peasant systems worldwide. Social mechanisms with which they respond to change.

330 Race, Ethnicity, and Nation: Anthropological Approaches to Collective Identity
 Spring. 3(3-0) P: (ANP 101 or ANP 201 or ISS 215) Not open to students with credit in SOC 215.

Understanding race and ethnicity. Models analyzing racial, ethnic, and national identities; boundaries; and collective identities and differentiations. Case studies from cultures worldwide.

340 Introduction to Physical Anthropology
 Fall. 4(3-2)
 Problems, data, and methods of physical anthropology. Human genetics, hominid evolution, primate studies, human osteology, and human diversity. Field trips at the student's expense may be required.

361 Paleolithic Archaeology
 Spring. 3(3-0) P: (ANP 101 or ANP 264 or ANP 203 or ISS 220)
 Stone Age archaeology from the dawn of tool making to the specialized hunters and cave artists of the late Ice Age.

363 Rise of Civilization
 Spring. 3(3-0) P: (ANP 101 or ANP 203 or ISS 220 or ANP 202)
 Archaeological evidence for the appearance and development of the world's earliest prehistoric civilizations. The nature of complex societies and the comparative evolution of states.

370 Culture, Health, and Illness
 Spring. 3(3-0) P: (ANP 101 or ANP 201 or ISS 210 or ISS 215) and completion of Tier I writing requirement.
 Cross-cultural perspectives on the definition and treatment of illness.

410 Revolution and Social Change in Latin America
 Fall of even years. 3(3-0) P: (ANP 101 or ANP 201 or ISS 330C)
 Comparative examination of sociocultural changes leading to and created by major revolutions in Latin America.

411 North American Indian Ethnography
 Fall. 3(3-0) P: (ANP 101 or ANP 201)
 Social and cultural patterns of North American Indian societies. History, economy, politics, social organization, religion, and social change.

412 Social and Cultural Status of Latinos in the U.S.
 Spring of odd years. 3(3-0) P: (ANP 101 or ANP 201 or SOC 100 or ISS 215) and completion of Tier I writing requirement.
 Social and cultural history of Chicanos, Puerto Ricans, Cubans and Central Americans in the United States and their contributions to American society.

414 Anthropology of South Asia
 Fall of even years. 3(3-0) P: (ANP 101 or ANP 201 or ISS 210 or ISS 215)
 Anthropology of India, Pakistan, Nepal, Bangladesh, and Sri Lanka. Religion, social organization, village life, urban structures, economic organization, history, and social change.

415 China: Culture and Society
 Fall of odd years. 3(3-0) P: (ANP 101 or ANP 201 or ISS 330B)
 Socioeconomic and cultural continuity and change from traditional civilization to the contemporary state and the communist period. Village and urban society and their relationships.

416 Anthropology of Southern Africa
 Fall of odd years. 3(3-0) P: (ANP 101 or ANP 201 or ISS 330A)
 Structure and organization of major cultures. Transformations caused by global, national, and local forces.

ANTHROPOLOGY ANP

Department of Anthropology College of Social Science

101 Introduction to Anthropology
 Fall, Spring, Summer. 3(3-0)
 Human culture worldwide and throughout human history. Major subfields, methods, theories, and issues. World cultural diversity. Culture and world problems.