

ANR EDUCATION AND COMMUNICATION SYSTEMS

Department of ANR Education and Communication Systems 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.
- 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:M: 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.

- 425 Principles of Animal Biotechnology**
Fall of odd years. 3(3-0) RB: (BS 111) and (CEM 143 or concurrently and CEM 251 or concurrently)
Application of molecular biology concepts to the improvement of domestic animals. Transgenic animal production, molecular genetics and marker assisted selection.
- 427 Environmental Toxicology and Society**
Spring of odd years. 3(3-0) Interdepartmental with Environmental Engineering; Sociology. RB: (ISB 200 or ISB 202 or ISB 204 or ISB 206H or BMB 200 or BS 111 or BS 110)
Impact of environmental chemicals on health and modern society. Cellular and organ functions and their interface with the environment. Limitations of scientific investigation and environmental regulations.
- 432 Advanced Dairy Cattle Management**
Fall, 3(2-2) P:M: (ANS 232) R: Not open to freshmen or sophomores. SA: ANS 498
Management techniques for operating a dairy herd. Mastitis control, reproductive and nutrition management, records, and general herd health. Field trips required.
- 442 Advanced Horse Management**
Spring, 3(2-2) P:M: (ANS 242) RB: (ANS 313) R: Not open to freshmen or sophomores. SA: ANS 498
Management of stables and breeding farms. Pedigree and conformational selection, reproduction. Promotion, marketing, economics. Nutrition and feeding, facilities, and herd health. Field trips required.
- 445 Equine Exercise Physiology**
Fall, 4(3-2) RB: (ANS 313 and ANS 315)
Research in equine exercise science. Physical, physiologic, metabolic and mental adaptation to athletic training. Nutrition and bioenergetics of muscle metabolism. Field trip required.
- 455 Avian Physiology**
Spring, 4(3-3) RB: (ANS 315) R: Open only to juniors or seniors or graduate students.
Systemic and comparative physiology of birds: respiration, reproduction, endocrinology, digestion, urination, and the senses.
- 464 Statistical Methods for Biologists I**
Fall, 3(3-0) Interdepartmental with Statistics and Probability; Crop and Soil Sciences. Administered by Department of Statistics and Probability. RB: (STT 421)
Biological random variables. Estimation of population parameters. Testing hypotheses. Linear correlation and regression (prediction). Analyses of counted and measured data to compare several biological groups (contingency tables and analysis of variance).
- 465 Statistical Methods for Biologists II**
Spring, 3(3-0) Interdepartmental with Statistics and Probability; Crop and Soil Sciences. Administered by Department of Statistics and Probability. RB: (STT 464)
Concepts of reducing experimental error: covariance, complete and incomplete block designs, latin squares, split plots, repeated-measures designs, regression applications, and response surface designs.

- 472 Advanced Swine Management**
Fall of even years. 3(2-2) P:M: (ANS 272) R: Not open to freshmen or sophomores. SA: ANS 498
Management techniques for operating a swine herd. Management of reproduction and nutrition, records, and general herd health. Integration of husbandry and business principles for decision making. Field trips required.
- 475 Aquaculture**
Spring, 3(3-0) Interdepartmental with Fisheries and Wildlife. Administered by Department of Fisheries and Wildlife. RB: (ANS 313 or ZOL 355)
Propagation and rearing of aquatic organisms used for food, bait and recreational fisheries management. Culture principles and techniques for important aquatic species. Commercial potential.
- 480 Animal Systems in International Development**
Fall, Spring, Summer, 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. R: Not open to freshmen. Approval of department; application required.
Animal systems in various global regions. Output, land and resource conservation, and socio-economic factors.
- 483 Ruminant Nutrition**
Spring, 3(3-0) RB: (ANS 313 and ANS 315) R: Not open to freshmen or sophomores.
Physiology and metabolism in ruminants. Prehension, digestion, metabolism, absorption, and distribution of nutrients for productive functions. Feeding management strategies and diet formulation. Field trip may be required.
- 490 Independent Study**
Fall, Spring, Summer, 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. RB: (ANS 210) and (ANS 313 and ANS 314 and ANS 315) R: Open only to juniors or seniors. Approval of department; application required.
Independent study in genetics, nutrition, physiology, toxicology, meat science, or management of poultry, livestock, or horses.
- 493 Professional Internship in Animal Science**
Fall, Spring, Summer, 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to juniors or seniors in the Animal Science major. 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.
Supervised professional experience in the animal industry.
- 499 Senior Thesis in Animal Science**
Fall, Spring, Summer, 3 to 9 credits. A student may earn a maximum of 9 credits in all enrollments for this course. RB: (ANS 313 and ANS 314 and ANS 315) R: Open only to seniors. Approval of department; application required. Maximum of 10 credits may be earned in ANS 499 and ANS 490.
Individual studies in an area of choice with both oral and written final communications. Topic to be determined by student and guidance committee.

ANR Education and Communication Systems—AEE

- 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:M: (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:M: 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:M: 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.
- 401 Agricultural and Natural Resources Communications Campaigns**
Fall, Spring, Summer. 3(3-0) P:M: 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:M: 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:M: 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.

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.
- 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.