MIP 101 03(3-0-0). Introduction to Human Disease.  (GT-SC2, AUCC 3A).  S. Prerequisite: None.  
Survey of human systems and diseases.

MIP 149 03(3-0-0). The Microbial World. F. Prerequisite: None.  
Importance of microbiology in daily life, with emphasis on positive and negative roles of microbes, infectious disease, and current microbiology issues.

MIP 192 02(0-0-2). Microbiology First-Year Seminar. F. Prerequisite: None.  
Introduction to microbiology major and faculty; academic and career planning; information sources in biomedical sciences.

MIP 260 03(3-0-0). The World of Parasites. S. Prerequisite: BZ 110 or LIFE 102; CHEM 111.  
Introduction to general parasitology; evolution, ecology, epidemiology, physiology, and morphology of representative parasites of every group.

MIP 275 02(1-0-1). Microcomputing Applications in Microbiology. S. Prerequisite: None.  
Network software on MS-DOS microcomputers will be used to acquire and analyze data and information that are commonly encountered in microbiology.

MIP 298 Var[1-3]. Introductory Research. Prerequisite: Written consent of instructor.  
Freshman/sophomore research experience in a working research environment.

MIP 300 03(3-0-0). General Microbiology. F, S, SS. Prerequisite: BZ 110 or BZ 120 or LIFE 102; CHEM 245 or concurrent registration or CHEM 341 or concurrent registration or CHEM 345 or concurrent registration.  
Structure, function, development, physiology, and molecular biology of microorganisms emphasizing bacteria. (NT-O)

MIP 302 02(0-4-0). General Microbiology Laboratory. F, S. Prerequisite: MIP 300 or concurrent registration.  
Laboratory skills and techniques for isolating, characterizing, and identifying bacteria.

MIP 303 01(0-0-1). General Microbiology—Honors Recitation. F, S. Prerequisite: Concurrent registration in MIP 300—Honors Section; participation in the Honors Program.  
Research and present topics related to the material presented in MIP 300.

MIP 315A-B. Human and Animal Disease. F, S. Credit not allowed for both MIP 315A and MIP 315B.  
Biological systems critical to mammalian physiology and how each is affected by metabolic, genetic, environmental, and infectious agents. A) 03(3-0-0). B) 04(3-0-1). Prerequisite: BMS 300 or BMS 305.

MIP 334 03(3-0-0). Food Microbiology. F. Prerequisite: LIFE 205 or MIP 300.  
Microorganisms in production of foods, in preservation and spoilage, and in food-borne diseases. Control of microorganisms in foods.

oMIP 335 02(0-4-0). Food Microbiology Laboratory. F. Prerequisite: LIFE 206 or MIP 302; MIP 334 or concurrent registration.

MIP 342 04(3-0-1). Immunology. F, S. Prerequisite: CHEM 245 or concurrent registration or CHEM 341 or concurrent registration or CHEM 345 or concurrent registration; LIFE 201B or LIFE 210 or MIP 300.  
Principles of immunology: components of the immune system, interactions of humoral and cellular elements, and clinical applications of basic concepts.

MIP 343 02(0-4-0). Immunology Laboratory. S. Prerequisite: MIP 302; MIP 342 or concurrent registration.  
Techniques used in research and clinical immunology, including diagnostic problem solving and data analysis.

*MIP 350 03(3-0-0). Microbial Diversity. S. Prerequisite: MIP 300.  
Physiological, taxonomic, and phylogenetic aspects of microbial diversity. Yeasts and filamentous fungi as microbial entities.

MIP 351 03(3-0-0). Medical Bacteriology. S. Prerequisite: MIP 342.  
Bacteria which cause human and veterinary diseases; host-parasite relationships; disease mechanisms, prevention, and therapy.

MIP 352 03(0-6-0). Medical Bacteriology Laboratory. S. Prerequisite: MIP 302; MIP 351 or concurrent registration.  
Laboratory skills and techniques necessary for identifying medically important bacteria.

MIP 384 Var[1-5]. Supervised College Teaching. Prerequisite: Written consent of department. A maximum of 10 combined credits for all 384 and 484 courses are counted towards graduation requirements.

MIP 400A-G Capstones in Microbiology. F, S.  
A) Medical microbiology 02(2-0-0). Prerequisite: MIP 342; MIP 351 or concurrent registration or MIP 420 or concurrent registration; written consent of instructor. B) Biototechnology 02(0-0-2). Prerequisite: BC 351 or BC 401; MIP 300. C) Immunology 02(2-0-0). Prerequisite: MIP 342; MIP 351 or concurrent registration or MIP 420 or concurrent registration. D) Microbial diversity, ecology 02(2-0-0). Prerequisite: MIP 342; MIP 351 or concurrent registration or MIP 420 or concurrent registration. E) Microbial genetics 02(2-0-0). Prerequisite: MIP 342; MIP 351 or concurrent registration or MIP 420 or concurrent registration. F) Virology 02(2-0-0). Prerequisite: MIP 342; MIP 351 or concurrent registration or MIP 420 or concurrent registration. G) Service learning. 02(2-0-0). Prerequisite: MIP 342; MIP 351 or concurrent registration or MIP 420 or concurrent registration.

MIP 420 04(4-0-0). Medical and Molecular Virology. F. Prerequisite: BC 351 or concurrent registration or BC 401 or concurrent registration; MIP 342.  
Principles of animal virology: structure, classification, assay, diagnosis, control, replication, genetics, host-parasite relationships.

MIP 425 02(0-4-0). Virology and Cell Culture Laboratory. F. Prerequisite: MIP 302; MIP 420 or concurrent registration.  
Isolation and characterization of viruses. Viral diagnostic and cell culture techniques.

*MIP 432 03(2-0-1). Microbial Ecology. S. Prerequisite: MIP 300.  
Principles of microorganism interaction with their living and nonliving environments: implication for the environment, plants and animals.

*MIP 433 01(0-3-0). Microbial Ecology Laboratory. S. Prerequisite: MIP 432 or concurrent registration.  
Experimental microbial ecology: the design, conduct and interpretation of experiments that illustrate basic principles of microbial ecology.

*MIP 436 04(2-4-0). Industrial Microbiology. F. Prerequisite: LIFE 206 or MIP 302.  
Use of microorganisms for producing commercially valuable products.

Laboratory skills and techniques related to the presence of microorganisms in food, production, and preservation.

*MIP 437 01(2-0-1). Industrial Microbiology Laboratory. S. Prerequisite: MIP 436.

*MIP 440 01(4-0-0). Molecular Microbiology Laboratory. F. Prerequisite: MIP 436.

*MIP 441 01(4-0-0). Microbial Genetics Laboratory. S. Prerequisite: MIP 436.

*MIP 450 02(2-0-0). Microbial Genetics. F. Prerequisite: MIP 436.

*MIP 451 02(2-0-0). Microbial Genetics Laboratory. F. Prerequisite: MIP 436.

*MIP 460 02(2-0-0). Microbial Ecology. F. Prerequisite: MIP 436.

*MIP 461 02(2-0-0). Microbial Ecology Laboratory. F. Prerequisite: MIP 436.

*MIP 463 02(2-0-0). Industrial Microbiology. F. Prerequisite: LIFE 206 or MIP 302.

Use of microorganisms for producing commercially valuable products.

*MIP 475 02(2-0-0). Microbial Genetics Laboratory. F. Prerequisite: MIP 436.

Alternate year offering (odd); * Alternate year offering (even); + Field trips; S Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
MIP 443 04(3-0-1). Microbial Physiology. S. Prerequisite: BC 351 or BC 401; MIP 300.
   Structure, function of bacterial constituents; comparison with other organisms. Bacterial growth, energy production, biosynthesis.

MIP 450 03(3-0-0). Microbial Genetics. F. Prerequisite: BC 351 or concurrent registration or BC 401 or concurrent registration; MIP 300.
   Principles of genetics at molecular level; mutation, recombination, complementation, suppression, control of gene expression, and recombinant DNA.

MIP 462/BZ 452/BSPM 462 05(3-4-0). Parasitology and Vector Biology. F. Prerequisite: BC 110 or LIFE 103; BZ 212 or LIFE 206 or MIP 302. Credit allowed for only one of the following: MIP 462, BSPM 462, BZ 462.
   Protozoa, helminthes, and insects and related arthropods of medical importance; systematics, epidemiology, host damage and control.

MIP 495 Var. Independent Study. Prerequisite: MIP 300; written consent of department.

MIP 496 Var[1-3]. Group Study. F, S. Prerequisite: Written consent of instructor.
   Faculty-supervised investigation of areas of special interest in microbiology, virology, microbial physiology, or microbial genetics.

MIP 498 Var[1-3]. Research. Prerequisite: MIP 302; written consent of department.

*MIP 530 04(3-0-1). Advanced Molecular Virology. S. Prerequisite: BC 351 or BC 401; BC 463 or MIP 450.
   Virus-host interactions at the molecular and cellular level.

MIP 533/VS 533 03(2-0-1). Epidemiology of Infectious Diseases/Zoonoses. S. Prerequisite: MIP 300. Credit not allowed for both MIP 533 and VS 533.
   Epidemiologic features of infectious and parasitic diseases that have a major impact on community medicine.

MIP 540 02(2-0-0). Biosafety in Research Laboratories. F, S. Prerequisite: MIP 300.
   Practical applications of biosafety principles, including lab practices and regulatory aspects of research involving infectious microorganisms and rDNA.

°MIP 543 03(3-0-0). RNA Biology. F. Prerequisite: BC 351 or concurrent enrollment or BC 401 or concurrent enrollment.
   Gene expression and regulation that occurs at the level of RNA (e.g., splicing, stability, export, translation, RNAi, etc.).

MIP 550 04(2-6-0). Microbial and Molecular Genetics Laboratory. S. Prerequisite: MIP 302; MIP 450; written consent of department.
   Use of both in vivo genetics and in vitro molecular techniques to study gene structure, function, and regulation in bacteria.

MIP 555 03(3-0-0). Principles and Mechanisms of Disease. F. Prerequisite: BMS 300.
   Principles of disease processes; emphasis on reactivity of the diseased cell, tissue, organ, or organism.

°MIP 563 03(3-0-0). Biology of Disease Vectors. S. Prerequisite: MIP 462/BSBM 462/BZ 462.
   Vector physiology and genomics, new strategies in vector control, and vector/host interactions.

MIP 570 03(2-2-0). Functional Genomics. F. Prerequisite: MIP 300; MIP 302; MIP 443; MIP 450.
   State-of-the-art genomic tools with applications to studies of pathogenesis and pathophysiology of infectious diseases.

MIP 576/BSPM 576 03(3-0-0). Bioinformatics. F, S. Prerequisite: BC 463 or BZ 310 or BZ 350 or CM 501 or CS 155 or ERHS 332 or MIP 275 or MIP 300 or MIP 450 or STAT 307. Credit not allowed for both MIP 576 and BSPM 576.

°Alternate year offering (odd); * Alternate year offering (even); + Field trips; S Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)

Technical computing across platforms using bioinformatics tools in molecular analyses.

MIP 577/BZ 577 02(0-4-0). Computer Analysis in Population Genetics. F. Prerequisite: MIP 578/BZ 578 or concurrent registration.
   Credit not allowed for both MIP 577 and BZ 577.
   Computational and statistical techniques and practical exercises in discrete and quantitative genetics.

MIP 578/BZ 578 04(3-0-1). Genetics of Natural Populations. F. Prerequisite: BZ 350 or LIFE 201A or LIFE 201B or SOCR 330; STAT 201 or STAT 301 or STAT 307. Credit not allowed for both MIP 578 and BZ 578.
   Theoretical and empirical aspects of the genetics of natural populations; current molecular techniques and statistical analysis.

MIP 611 04(2-0-2). Advanced Microbiological Research Methods. F. Prerequisite: Admission to the M.S. in Microbiology, Immunology, and Pathology, Plan B program.
   In-depth presentation of the ever-growing arsenal of techniques needed to be an effective experimental microbiologist/molecular biologist.

MIP 612 03(3-0-0). Applied Immunology. S. Prerequisite: Admission to the M.S. in Microbiology, Immunology, and Pathology, Plan B program.
   Application of classic and modern principles in immunology currently being used in the medical, biotechnology and basic research fields.

MIP 613 04(4-0-0). Applied Microbiology and Virology. F. Prerequisite: Admission to the M.S. in Microbiology, Immunology, and Pathology, Plan B program.
   Application of bacteria, fungi and viruses in translational research, from drug and vaccine development to the generation of clean energy.

MIP 614 03(3-0-0). Medical Microbiology. S. Prerequisite: Admission to the M.S. in Microbiology, Immunology, and Pathology, Plan B program.
   In-depth examination of the pathogenic mechanisms of medically important bacteria, fungi, parasites and viruses.

MIP 615 01(1-0-0). Ophthalmic Pathology. F. Prerequisite: None.
   Background in normal ocular histology as well as pathologic changes in the eye, taught through a combination of lectures and class discussions.

MIP 616 04(3-0-1). Modern Molecular Biology for Microbiologists. F. Prerequisite: Admission to the M.S. in Microbiology, Immunology, and Pathology, Plan B program.
   Develop a working knowledge in the theory and applications of modern molecular biology to applied and translational research uses in microbiology.

MIP 617 03(3-0-0). Principles of Biodefense/Emerging Pathogens. S. Prerequisite: Admission to the M.S. in Microbiology, Immunology, and Pathology, Plan B program.
   In-depth analysis of the physiology, biology and epidemiology of biodefense agents and emerging pathogens.

MIP 618 01(0-0-1). MIP Masters Seminar Series. F, S. Prerequisite: Admission to the M.S. in Microbiology, Immunology, and Pathology, Plan B program.
   May be taken twice for credit.
   Foster the development of MIP master’s students by improving communication skills and discussion of cutting edge research.

MIP 619 02(1-0-1). MIP Masters Topics. F, S. Prerequisite: Admission to the M.S. in Microbiology, Immunology, and Pathology, Plan B program.
   May be taken twice for credit.
   Foster the development of MIP master’s students by improving communication skills and discussion of cutting edge research.

°MIP 624 02(1-0-1). Advanced Topics in Microbial Ecology. F. Prerequisite: MIP 300; MIP 432.

   Application of bacteria, fungi and viruses in translational research, from drug and vaccine development to the generation of clean energy.
Recent conceptual developments in microbial ecology, emphasizing theoretical aspects of microbial ecology, particularly in an evolutionary context.

**MIP 628 03(3-0-0). Immunity to Infection.** S. Prerequisite: None.
How microorganisms have evolved to counteract the immune system, and how the immune system has evolved to resist microbes.

**MIP 630 03(3-0-0). Advances in Microbial Physiology.** F. Prerequisite: MIP 443.
Contemporary developments in bacterial structure, function, metabolism, and genetics.

°**MIP 636 04(3-0-1). Mechanisms of Viral Infection and Disease.** S. Prerequisite: MIP 420 or MIP 530.
Cytopathic mechanisms, pathogenetic events in viral diseases; host response and antiviral immunity; cancer induction by DNA and RNA viruses.

**MIP 643 01(1-0-0). Grant Writing for Microbiology/Pathology.** S. Prerequisite: Enrollment in an MIP graduate program.
To effectively communicate ideas, goals and approaches in a scientific grant proposal.

**MIP 651 03(3-0-0). Immunobiology.** F. Prerequisite: MIP 342. Prerequisite: None.
Structure, function, regulation of immunoglobulins and the immune system. Cellular immunity including transplantation and cancer.

**MIP 654 01(1-0-0). Research Policies and Regulations.** F, S. Prerequisite: None.
Reviews CSU and federal policies, rules, and regulations on integrity, use of humans and animals, authorship, data, genetics, etc., using case studies.

°**MIP 666 03(0-0-3). Writing Scientific Manuscritps.** F. Prerequisite: Written consent of instructor.
Writing biological science manuscripts for publication.

°**MIP 670 03(3-0-0). Molecular Immunology and Immunogenetics.** F. Prerequisite: MIP 651.
Molecular basis and genetics of immune response. Biochemistry of immunologically mediated diseases.

°**MIP 675 03(3-0-0). Advanced Bioanalytic Pathology.** S. Prerequisite: (VM 724; written consent of instructor) or D.V.M. degree.
Laboratory medicine for post-graduate veterinarians and professional veterinary medical students.

**MIP 698 Var. Research.** Prerequisite: M.S. candidates only.

**MIP 699 Var. Thesis.** Prerequisite: M.S. candidates only.

**MIP 700 01(1-0-0). Topics in Microbiology.** F, S. Prerequisite: MIP 300.
Current literature in bacteriology, virology, genetics, and immunology.

°**MIP 720 02(1-3-0). Methods in Carbohydrate Analysis.** S. Prerequisite: CHEM 346.
Structural analysis of complex carbohydrates using gas chromatography, mass spectrometry, and nuclear magnetic resonance.

°**MIP 740 03(2-0-1). Microbial and Molecular Genetics.** S. Prerequisite: MIP 450.
Molecular biology and genetics of prokaryotic and eukaryotic cells and their viruses; strategies for genetic manipulation.

°**MIP 760 03(2-0-1). Mechanisms of Bacterial Pathogenesis.** F. Prerequisite: BC 351; MIP 342.
Mechanisms of bacterium-host interaction at molecular and cellular levels in pathogenesis of bacterial disease.

°Alternate year offering (odd); * Alternate year offering (even); + Field trips; S Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
MARKETING COURSES  
Department of Marketing  
College of Business

**MKT 300 03(3-0-0). Marketing.** F, S, SS. Prerequisite: AREC 202 or ECON 202; MATH 141 or MATH 155 or MATH 160. Credit not allowed for both MKT 300 and MKT 305.

- Market and buyer analysis, product and service development, pricing, promotion, advertising, selling, and distribution.

**MKT 305 03(3-0-0). Fundamentals of Marketing.** F, S. Prerequisite: AREC 202 or ECON 101 or ECON 202. Credit not allowed for both MKT 305 and MKT 300.

- Overview of marketing activities involved in provision of products and services to consumers, including target markets and managerial aspects. (NT-O)

**MKT 320 03(3-0-0). Integrated Marketing Communications.** F, S. Prerequisite: MKT 300 or MKT 305.

- Principles and practices of managing promotional activities including advertising, sales promotion, and other major media.

**MKT 330 03(3-0-0). Business Customer Relationships.** F, S. Prerequisite: MKT 300 or MKT 305.

- Managing relationships with distribution channel intermediaries and business customers.

**MKT 360/DM 360 03(3-0-0). Retailing.** F, S, SS. Prerequisite: MKT 300 or MKT 305.

- Retail markets, institutions, operations, and problems. (NT-O)

**MKT 361 03(3-0-0). Buyer Behavior.** F, S. Prerequisite: MKT 300 or MKT 305.

- Marketing analysis of buying behavior of individuals, households, businesses, and not-for-profit organizations.

**MKT 362 03(3-0-0). Professional Selling.** F, S. Prerequisite: MKT 300 or MKT 305.

- Persuasive personal communications in selling consumer and industrial products and services.

**MKT 363 03(3-0-0). Sales Management.** S. Prerequisite: MKT 300 or MKT 305.

- Recruiting, selecting, training, compensating, motivating, supervising, and evaluating a sales force.

**MKT 364 03(3-0-0). Product Development and Management.** F. Prerequisite: MKT 300 or MKT 305.

- Consumer and industrial product development and management issues as an integral part of the marketing mix.

**MKT 365 03(3-0-0). International Marketing.** F, S. Prerequisite: MKT 300 or MKT 305.

- Analysis of international markets and development of strategic and tactical options for marketing across national boundaries.

**MKT 366 03(3-0-0). Services Marketing.** S, SS. Prerequisite: MKT 300 or MKT 305.

- Customer service issues and unique challenges involved in marketing and management of services operations.

**MKT 367 03(3-0-0). Sports Marketing.** F, S. Prerequisite: MKT 300 or MKT 305.

- The nature and scope of applying marketing strategy and tactics in the sports marketing environment.

**MKT 370 03(3-0-0). Digital Marketing.** F, S. Prerequisite: MKT 300 or MKT 305.

- Introduction to digital marketing: the landscape and tactics needed to execute marketing strategy in an online, connected world.

**MKT 375 03(3-0-0). Promotion and Communications.** F. Prerequisite: Admission to a master’s program in business.

- Financial analysis involved in addressing marketing problems; advanced study of pricing strategy and tactics.

**MKT 400 03(3-0-0). Pricing and Financial Analysis in Marketing.** F, S. Prerequisite: MKT 300 or MKT 305.

- Financial analysis involved in addressing marketing problems; advanced study of pricing strategy and tactics.

**MKT 420 03(3-0-0). Marketing Strategy and Management.** F, S. Prerequisite: MKT 410.

- Marketing decisions involving integration of elements of the marketing mix.

**MKT 450 03(0-9-0). Internship.** Prerequisite: Written consent of instructor. Maximum of 3 credits allowed in course.

**MKT 452 03(0-0-3). Seminar.** Prerequisite: MKT 300 or MKT 305; written consent of instructor.

**MKT 495 Var[1-5]. Independent Study.** Prerequisite: 2.750 GPA or better.

**MKT 496 Var[1-3]. Group Study.**

**MKT 498 Var[1-3]. Research.**

**MKT 600 03(3-0-0). Marketing Management and Strategy.** S. Prerequisite: Admission to a master’s program in business.

- Processes of customer value creation and value capture; marketing strategy analysis.

**MKT 601 03(3-0-0). Marketing for Social Sustainable Enterprises.** F. Prerequisite: Admission to GSSE Program.

- Customer and stakeholder value creation and capture. Marketing strategy with emphasis on social sustainable organizations.

**MKT 621 01(1-0-0). Digital Marketing.** F, S. SS. Prerequisite: Admission to a master’s program in business. This is a partial-semester course.

- Overview of social media, website management, content marketing, web analytics and search engine optimization. (NT-O)

**MKT 661 01(1-0-0). Consumer Behavior.** F, S. SS. Prerequisite: Admission to a master’s program in business. This is a partial-semester course.

- Marketing analysis of buying behavior of individual consumers. (NT-O)

**MKT 662 01(1-0-0). Strategic Selling for Business Customers.** F, S. SS. Prerequisite: Admission to a master’s program in business. This is a partial-semester course.

- Examination of sales strategies, sales tactics and best practices in professional selling with a primary context in business selling. (NT-O)

**MKT 667 01(1-0-0). Services Marketing Management.** F, S. SS. Prerequisite: Admission to a master’s program in business. This is a partial-semester course.

- Fundamental concepts and strategies that differentiate the marketing of services from the marketing of tangible goods, including customer satisfaction. (NT-O)

**MKT 692 03(0-0-3). Seminar.**

- Critical review and discussion of relevant marketing topics.

**MKT 695 Var[1-3]. Independent Study.** Prerequisite: 3.250 GPA or better.
MILITARY SCIENCE COURSES
Department of Military Sciences
Office of Provost and Executive Vice President

+MLSC 101 02(2-0-0). Leadership and Personal Development. F. Prerequisite: None. Required field trips. Leadership principles and techniques; first aid; weapons common to U.S. forces; rifle marksmanship; branches of the Army; physical fitness training. ($)

+MLSC 102 02(2-0-0). Introduction to Tactical Leadership. S. Prerequisite: None. Required field trips. Small unit leadership; survival techniques; knots, rappelling; map reading, land navigation; plant/animal identification; physical fitness training. ($)

MLSC 196 01(0-2-0). Military Science Group Study I. F. Prerequisite: concurrent registration in MLSC 101.

MLSC 197 01(0-2-0). Military Science Group Study II. S. Prerequisite: Concurrent registration in MLSC 102.

+MLSC 201 02(2-0-0). Innovative Team Leadership. F. Prerequisite: None. Leadership assessment; principles of war; small unit operations; basic management skills; oral communication; counseling/behavioral evaluation techniques. ($)

+MLSC 202 02(2-0-0). Foundations of Tactical Leadership. S. Prerequisite: None. Required field trips. Operation orders; theories of conflict; small unit operations; troop leading procedures; observing and classifying behavior; physical fitness training. ($)

MLSC 250 Var[2-8]. Basic Camp Leader Internship. SS. Prerequisite: None. Maximum of 8 credits allowed in course. Practical leadership development and management skills in a military operations environment.


MLSC 296 01(0-2-0). Military Science Group Study III. F. Prerequisite: Concurrent registration in MLSC 201.

MLSC 297 01(0-2-0). Military Science Group Study IV. S. Prerequisite: Concurrent registration in MLSC 202.

+MLSC 301 03(3-0-0). Adaptive Tactical Leadership. F. Prerequisite: Concurrent registration in MLSC 306. Required field trips. Leadership theory review; leadership assessment program to further develop leadership and management skills; physical fitness training. ($)

+MLSC 302 03(3-0-0). Leadership in Changing Environments. S. Prerequisite: MLSC 301; concurrent registration in MLSC 397. Required field trips. Command and staff functions; operations orders; tactical unit operations; military skills; physical fitness training; field training exercises. ($)

MLSC 357/HIST 357 03(3-0-0). The American Military Experience. F, SS. Prerequisite: HIST 100 or HIST 101 or HIST 115 or HIST 120 or HIST 121 or HIST 150 or HIST 151 or HIST 170 or HIST 171; completion of 45 credits. Credit not allowed for both MLSC 357 and HIST 357. Role of the armed forces in American society; development of military traditions, institutions, and practices.

MLSC 386 08(1-12-1). Advanced Camp Practicum. SS. Prerequisite: MLSC 301. Leadership principles and skills applied to actual field situations.

MLSC 395 Var[1-3]. Independent Study. Leadership theory and skills as applied to the military.

MLSC 396 01(0-2-0). Military Science Group Study V. F. Prerequisite: Concurrent registration in MLSC 301.

MLSC 397 01(0-2-0). Military Science Group Study VI. S. Prerequisite: Concurrent registration in MLSC 302.

+MLSC 401 03(3-0-0). Developing Adaptive Leaders. F. Prerequisite: MLSC 302; MLSC 357/HIST 357; concurrent registration in MLSC 496. Required field trips. Role of the Army officer; ethics, professionalism; military justice; law of land warfare; preparation for active duty; physical fitness training. ($)

+MLSC 402 03(3-0-0). Leadership in a Complex World. S. Prerequisite: MLSC 301; MLSC 302; concurrent registration in MLSC 497. Military staff functions and issues in leadership. ($)

MLSC 495 Var[1-3]. Independent Study.

MLSC 496 01(0-2-0). Military Science Group Study VII. F. Prerequisite: Concurrent registration in MLSC 401.

MLSC 497 01(0-2-0). Military Science Group Study VIII. Prerequisite: Concurrent registration in MLSC 402.

°Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
MU 100 03(3-0-0). Music Appreciation. (GT-AH1, AUCC 3B). F, S, SS. Prerequisite: None. Previous musical training not necessary. Survey of music from a wide range of periods and styles. (S, NT-O)

MU 111 03(3-0-0). Music Theory Fundamentals. (GT-AH1, AUCC 3B). F, S, SS. Prerequisite: None. For non-music majors and majors needing basic skills.
   - Basic visual and aural fundamentals of music including intervals, scales, key and time signatures, chord construction, basic harmony, melodic writing. (S)

MU 117 04(3-2-0). Music Theory I. F. Prerequisite: Satisfactory completion of placement examination.
   - Introduction to diatonic harmony and part-writing; basic sight singing, ear training, and keyboard harmony skills.

MU 118 04(3-2-0). Music Theory II. S. Prerequisite: MU 117.
   - Four-part diatonic writing; diatonic modulation; diatonic sight singing, ear training, and keyboard harmony skills.

MU 131 03(3-0-0). Introduction to Music History and Literature. (GT-AH1, AUCC 3B). F, S. Prerequisite: None.
   - Landmarks of music history and literature from 1300 to the present.

MU 150 02(2-0-0). Piano Class I. F, S, SS. Prerequisite: None.
   - Basic piano technique; keyboard harmony and music rudiments.

MU 151 01(2-0-0). Piano Skills for Music Educators. F, S. Prerequisite: Successful completion of Basic Piano Skills test.
   - Intermediate piano technique and appropriate sightreading skills for music educators.

MU 152 01(2-0-0). Piano Skills for Choral Directors. F, S. Prerequisite: MU 151.
   - Advanced piano skills necessary for choral directing and accompaniment.

MU 153 01(2-0-0). Piano Skills for Music Therapists. F, S. Prerequisite: Successful completion of Basic Piano Skills test.
   - Practical application of functional piano skills for clinical music therapists.

MU 154 01(0-2-0). Jazz Piano Class. S. Prerequisite: Successful completion of Basic Piano Skills test.
   - Basic jazz piano skills that serve as the foundation for a jazz pianist or composer.

MU 155 02(2-0-0). Guitar Class I. F, S, SS. Prerequisite: None.
   - Fundamental techniques for guitar emphasizing chord study and related literature.

MU 156 02(2-0-0). Guitar Class II. F, S. Prerequisite: MU 155.
   - Fundamentals of guitar emphasizing solo literature and accompaniment.

MU 157 02(2-0-0). Voice Class I. F, S. Prerequisite: None.
   - Techniques of singing, emphasizing posture, breathing, tone production and diction, as applied to song literature.

MU 158 02(2-0-0). Voice Class II. F, S. Prerequisite: MU 157.
   - Techniques of singing, emphasizing resonance, articulation, projection, and repertoire.

MU 172A 02(1-2-0). Freshman Voice Studio—English/Italian. F. Prerequisite: Concurrent registration in any music ensemble.
   - Applied voice study and English/Italian diction in a group setting for freshmen voice majors.

MU 172B 02(1-2-0). Freshman Voice Studio—German/French. S. Prerequisite: Concurrent registration in any music ensemble.
   - Applied voice study and German/French diction in a group setting for freshman voice majors.

MU 201 01(0-3-0). Men’s Chorus. F, S. Prerequisite: None.
   - Rehearsal and performance of a variety of types and styles of music for men’s voices.

MU 202 01(0-3-0). University Chorus. F, S. Prerequisite: None.
   - Rehearsal and performance of a variety of types and styles of music for mixed voices.

MU 204 01(0-5-0). Marching Band. F. Prerequisite: None.
   - Marching routines utilizing popular and jazz musical idioms with performances at all home football games and other athletic events. ($)

MU 205 01(0-3-0). Concert Band. S. Prerequisite: None.
   - Rehearsal and performance of basic concert literature.

MU 206 01(0-3-0). Colorado State University Concert Orchestra. F, S. Performance opportunity for music majors and non-music majors to perform standard orchestral literature.

MU 217 04(3-2-0). Music Theory III. F. Prerequisite: MU 118.
   - Harmonic and formal language of the 17th and 18th centuries; diatonic and modal sight singing, ear training, and keyboard harmony skills.

MU 218 04(3-2-0). Music Theory IV. S. Prerequisite: MU 217.
   - Late 18 th and early 19 th century harmonic and formal language; diatonic, chromatic and modal sight singing, ear training, and keyboard harmony skills.

MU 225 02(2-0-0). Jazz Theory. F. Prerequisite: MU 118.
   - Music theory as it pertains to the jazz idiom; the aural language of jazz.

MU 230 03(3-0-0). Music of Black Americans. S. Prerequisite: None.
   - Music indigenous to or composed by Black Americans.

MU 231 03(3-0-0). Women in Music. F. Prerequisite: None.
   - Examination of the role of women in music from historical and societal perspectives.

MU 241 03(3-0-0). Introduction to Music Therapy. F. Prerequisite: None.
   - Overview of music therapy, related helping professions, and problems in human functioning; emphasizes basic skills for managing behavior problems.

MU 250 03(2-2-0). Music Therapy Practice. F. Prerequisite: None.
   - Development of fundamental interactive and professional skills used in music therapy practice.

*MU 251 01(0-2-0). Voice Techniques. S. Prerequisite: Instrumental music education majors only.
   - Basic voice production, exercises, materials and methods for teaching, including child and adolescent voice concerns.

MU 252A-D Var[1-2]. Instrumental Techniques. F, S. Prerequisite: None.
   - Tone production, tuning, fingering, care, materials, and teaching methods for brass, percussion, string, and windwood instruments. A) Brass 02(1-2-0). B) Woodwinds 02(1-2-0). C) Strings 01(0-2-0). D) Percussion 01(0-2-0).

MU 254 02(2-0-0). Beginning Conducting. S. Prerequisite: MU 117.
   - Basic conducting patterns and techniques.

MU 272A-V Var[1-2]. Applied Music Instruction. F. S. Prerequisite: Concurrent registration in any music ensemble. One or two half-hour lessons per week and one hour weekly performance class. May be repeated up to 9 times for credit.

°Alternate year offering (odd); * Alternate year offering (even); + Field trips; S Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCCsubcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
MU 273 Var[1-2]. Composition Instruction. F, S. Prerequisite: MU 118; MU 131.
One or two half-hour lessons per week.

MU 274A-G Var[1-2]. Applied Jazz Instruction. F, S. Prerequisite: Written consent of instructor. May be repeated up to 9 times for credit.

MU 286 01(0-2-0). Practicum-Music Education.

MU 300 01(0-3-0). Women's Chorus. F, S. Prerequisite: None.
Rehearsal and performance of a variety of types and styles of music for women's voices.

MU 302 01(0-5-0). University Orchestra. F, S. Prerequisite: Audition required for this ensemble.
Rehearsal and performance of standard orchestral literature.

MU 304 01(0-3-0). Symphonic Band. F, S, SS. Prerequisite: Audition required for this ensemble.
Preparation for public performance of full symphonic instrumentation of concert band literature.

MU 305 01(0-5-0). Colorado State University Concert Choir. F, S. Prerequisite: Audition required for this ensemble.
Rehearsal and performance of choral literature emphasizing extended works with orchestral accompaniment.

MU 309 01(0-3-0). Jazz Ensemble. F, S. Prerequisite: Audition required for this ensemble.
Rehearsal and performance of jazz ensemble literature of standard and experimental types.

MU 310 01(0-2-0). Jazz Combo. F, S. Prerequisite: Audition required for this ensemble.
Small group jazz performance practice and standard jazz repertoire.

MU 317 02(1-2-0). Music Theory V. F. Prerequisite: MU 218.
Late 19th and 20th century systems of composition and analysis; experimental methods and procedures used in music therapy research.

MU 318 02(2-0-0). Arranging and Orchestration. S. Prerequisite: MU 218.
Techniques for writing music for the standard orchestral and band instruments; basic arranging skills for various instrumental and choral ensembles.

MU 320 01(0-2-0). Jazz Improvisation. F, S. Prerequisite: MU 225.
Jazz improvisation skills through training in jazz theory, ear training, and improvisatory concepts.

MU 325 02(2-0-0). Jazz Composition/Arranging. S. Prerequisite: MU 225.
Arranging jazz music for a variety of ensembles; composition of music in the jazz idiom.

MU 332 03(3-0-0). History of Jazz. S, SS. Prerequisite: None. Jazz since the 1880s emphasizing its various influences and developments. (NT-O)

MU 333 03(3-0-0). History of Rock and Roll. SS. Prerequisite: None. Historical overview of rock and roll with emphasis on listening skills, musical analysis, the artists, and the industry. (NT-O)

MU 334 03(3-0-0). Music History I. F, S. Prerequisite: MU 100 or MU 131; MU 118.
Music of the medieval, Renaissance, and baroque periods.

MU 335 03(3-0-0). Music History II. S. Prerequisite: MU 100 or MU 131; MU 118.
Music of the classical, Romantic, and contemporary periods.

MU 338 02(2-0-0). Opera History and Literature. S. Prerequisite: MU 131.
Historical and musical development of opera from its roots through the 20th century.

MU 342 03(3-0-0). Psychology of Music. F. Prerequisite: PSY 100.
Psychological aspects of music: perception, psychoacoustics, aesthetics, musical function, communication, measurement, and affective responses.

MU 343 03(3-0-0). Research Methods in Music Therapy. S. Prerequisite: STAT 201.
Techniques of observing, measuring, and recording behavior. Basic experimental methods and procedures used in music therapy research.

MU 351A-C 02(2-0-0). String Pedagogy I. F, S. Prerequisite: None.

MU 352A-C 02(1-2-0). String Pedagogy II. F, S. Prerequisite: MU 351.

MU 355 02(1-2-0). Choral Conducting and Literature. F. Prerequisite: MU 254.
Basic techniques of choral conducting and analysis of selected works as an aid to interpretation.

MU 356 02(1-2-0). Instrumental Conducting and Literature. S. Prerequisite: MU 254.
Essentials of instrumental conducting and analysis of selected works.

MU 365A-B 01(0-2-0). Advanced Diction. Prerequisite: MU 172A; MU 172B.
Practical application of lyric diction through performance of art song and arias. A) Italian and English. F. B) French and German. S.

MU 400 01(0-5-0). Colorado State University Chamber Choir. F, S. Prerequisite: Audition required for this ensemble.
Performance of chamber choral literature from all musical periods ranging from madrigals to music in a contemporary idiom.

MU 401 Var[1-2]. Opera Theater. F, S, SS. Prerequisite: Audition required for this ensemble.
Performance of opera and/or operatic scenes emphasizing operatic singing and acting techniques.

MU 402 01(0-5-0). Theater/Chamber Orchestra. F, S, SS. Prerequisite: Audition required for this ensemble.
Performance of selected operas, musicals, oratorio, orchestral accompaniments, and chamber music.

MU 404 01(0-5-0). Symphonic Wind Ensemble. F, S. Prerequisite: Audition required for this ensemble.
Performance of wind ensemble and band literature emphasizing most challenging of repertoire, using a select ensemble of performers.

MU 407 01(0-3-0). Accompanying. F, S. Prerequisite: MU 272I.
Practical experience in the interpretation and execution of piano accompaniments.

MU 408 01(0-3-0). Chamber Music. F, S. Prerequisite: Written consent of instructor.
Performance literature for small instrumental ensembles: duets, trios, quartets, and quintets.

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MU 415 02(1-2-0). Advanced Jazz Techniques. S. Prerequisite: MU 320. Prerequisite: None.
Advanced jazz theory and rhythmic concepts, free improvisation and other modern performance techniques.

MU 417 03(3-0-0). Counterpoint. F. Prerequisite: MU 218.
Counterpointal techniques from the Middle Ages through the 20th century; development of compositional skills in counterpoint.

MU 418 02(2-0-0). Advanced Orchestration. S. Prerequisite: MU 318.
Advanced writing for modern orchestra and related ensembles; advanced study of traditional and contemporary writing for the individual instruments.

MU 419 02(2-0-0). Electronic Music Composition. S. Prerequisite: MU 218.
Fundamentals of electronic music composition, including hardware, software, digital audio, MIDI, and computer music.

MU 420 02(2-0-0). Marching Band Techniques. S. Prerequisite: MU 204.
Marching band conducting, design, and performance techniques.

MU 421 02(1-3-0). Orchestral Techniques. S. Prerequisite: MU 252C.
Orchestral conducting and rehearsal techniques.

MU 425 02(2-0-0). Jazz Pedagogy. F. S. Prerequisite: None.
Jazz ensemble, instrumentation, literature, performance practice and rehearsal techniques.

MU 430 03(3-0-0). 20th Century Music. S. Prerequisite: None.
Musical styles from 1900 to present; major 20th-century movements which reflect a changing society.

MU 431 03(3-0-0). American Music. S. Prerequisite: None.
Sacred, patriotic, popular, and cultivated musical developments from the Pilgrims to 1900 including music on the Western frontier.

*MU 432 02(2-0-0). Hymnology. F. Prerequisite: MU 100 or MU 131.
Hymns and congregational singing in the Christian tradition.

*MU 433 02(2-0-0). Music and Rites of Christian Liturgy. S. Prerequisite: MU 100 or MU 131.
History of the music and rites of Christian liturgy from its beginnings to the present.

*MU 434 02(2-0-0). Psalms in Music and Liturgy. F. Prerequisite: MU 100 or MU 131.
Musical traditions of the poetry and psalms of the Hebrew Bible, primarily from the perspective of Jewish and Christian liturgy.

*MU 435 02(2-0-0). Contemporary Liturgical Music in America. S. Prerequisite: MU 100 or MU 131.
History and practice of contemporary liturgical music in America.

MU 437 02(1-2-0). History and Structure of the Organ. F. Prerequisite: MU 472H.
Physical structure, tonal disposition, acoustical surroundings, and historical development.

MU 440 03(3-0-0). Music Therapy Methods I. S. Prerequisite: MU 241; admission to professional curriculum.
Basic characteristics of handicapped children encountered in the music classroom; methods and materials for educating them in music.

MU 443 03(3-0-0). Music Therapy Methods II. S. Prerequisite: BMS 300; MU 241.
Relation of music to health; current and future music therapy scenes; and emphasis on cognitive, affective, and psychomotor approaches to therapy.

MU 444 03(3-0-0). Music Therapy Methods III. S. Prerequisite: Admission to professional curriculum.
Music therapy techniques: assessment, formulating objectives, designing and implementing programs, evaluation, problem solving, and creativity.

MU 445 02(2-0-0). Improvisation Techniques in Music Therapy. S. Prerequisite: Admission to professional curriculum.
Music/improvisation techniques with clinical populations.

MU 451A-C 02(1-2-0). String Pedagogy III. F. S. Prerequisite: MU 352.

MU 464A-C 02(2-0-0). String Literature. F. S.
A) Violin/viola. Prerequisite: MU 272N or MU 272O. B) Violoncello. Prerequisite: MU 272P. C) String bass. Prerequisite: MU 272M.

MU 465 02(1-2-0). Keyboard Literature. F. Prerequisite: None.
Survey of early keyboard literature from pre-piano to early Romantic period; problems in present-day performance.

*MU 466 02(1-2-0). Song Literature. S. Prerequisite: None.
Development of song as an art form from monody to German Lieder, French school, and contemporary songs of England and America.

*MU 467 02(2-0-0). Vocal Pedagogy. S. Prerequisite: MU 265A; MU 265B; concurrent registration in MU 472Q.
Pedagogical foundations, techniques, resources, methods, and terminology for teaching singing.

MU 468 02(1-2-0). Organ Literature. S. Prerequisite: MU 437.
Survey of literature from earliest known works to present; stylistic content and interpretation.

MU 469 02(1-2-0). Instrumental Literature. S. Prerequisite: None.
Survey of literature for string, woodwind, and brass ensembles.

MU 471 01(0-0-1). Recital. F, S, SS. Prerequisite: Written consent of instructor.
Demonstration of individual musical proficiency through public performance.

MU 472A-V Var[1-2]. Applied Music Instruction. F, S. Prerequisite: MU 272A-V; concurrent registration in any music ensemble; successful completion of upper-division qualifying exam. One or two half-hour lessons per week and one hour weekly performance class, emphasizing pedagogical methods. May be repeated up to 9 times for credit.


MU 473 Var[1-2]. Composition Instruction. F. S. Prerequisite: MU 273; successful completion of upper-division qualifying exam. One or two half-hour lessons per week; emphasizing pedagogical methods.

MU 474 Var[1-2]. Applied Jazz Instruction. F, S. Prerequisite: MU 274A-G (any one subtopic); concurrent registration in any jazz ensemble; successful completion of upper division qualifying exam. Private jazz instruction covering advanced aspects of jazz improvisation and performance.

MU 486A-B Var[1-3]. Practicum.
A) Music therapy. Prerequisite: Piano proficiency. B) Music education. Prerequisite: Admission to teacher licensure.

MU 487 Var. Internship. Prerequisite: Completion of all course work in the music therapy curriculum.
Six-month field experience that students must complete to become eligible for registration and board certification.

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MU 495A-H Var[1-3]. Independent Study.

MU 496A-1 Var[1-3]. Group Study.

MU 498 Var[1-3]. Research in Music Therapy. Prerequisite: MU 241; MU 286.
   Participation of undergraduate music therapy majors in departmental research projects.

MU 499 Var. Thesis. Prerequisite: Music majors only.

MU 510 03(3-0-0). Foundations of Music Education. F, SS. Prerequisite: MU 526A.
   Cultural, philosophical, psychological, and historical applications of music education. (NT-O)

MU 517 02(2-0-0). Analytic Techniques I. F. Prerequisite: Satisfactory completion of placement examination.
   Appropriate analytic techniques for Middle Ages, Renaissance, and baroque music.

MU 518 03(3-0-0). Analytic Techniques II. S. Prerequisite: Satisfactory completion of placement examination.
   Appropriate analytic techniques for classical, Romantic, and 20th-century music. (NT-O)

MU 519 03(3-0-0). History of Music Theory. S. Prerequisite: MU 317.
   Important authors, treatises, and texts dealing with acoustics, composition, counterpoint, harmony, notation, orchestration, thoroughbass, and tuning.

MU 520 03(3-0-0). Elementary School Music. F. Prerequisite: EDUC 450.
   Musical concepts and teaching strategies for grades K-6; contemporary influences on music education.

MU 521 03(3-0-0). Junior and Senior High School Music. S. Prerequisite: EDUC 450.
   Music for grades 7-12. General music classes, choral and instrumental organizations, common problems, practices, and new concepts.

MU 525A-C 03(1-0-2). Orff-Schulwerk Training Program. SS. Prerequisite: MU 590L.
   A) Orff-Schulwerk Training I. B) Orff-Schulwerk Training II. C) Orff-Schulwerk Training III.

MU 526A-C 05(2-2-2). Kodaly Training Program. F, SS.
   A) Level I. B) Level II. C) Level III.

+MU 527A 04(0-0-4). Conducting Seminar—Level 1. SS. Prerequisite: Audition and acceptance into the graduate school. Required field trips.
   Music score analysis, preparation and conducting problems; various conducting projects to sharpen skills and increase gestures. ($)

+MU 527B 04(0-0-4). Conducting Seminar—Level 2. SS. Prerequisite: MU 527A. Required field trips.
   Further techniques learned in MU 527A; focuses on rehearsal techniques, performance practice, and asymmetrical meters. ($)

MU 527C 04(0-0-4). Conducting Seminar—Level 3. SS. Prerequisite: MU 527B.
   Further study from MU 527A-B; recitative technique through both operatic and choral examples; final project is a group conducted Broadway musical. ($)

*MU 530 03(3-0-0). Music Through the Middle Ages. F. Prerequisite: MU 334.
   Music in Western civilization from its beginnings through Middle Ages.

*MU 531 03(3-0-0). Music of the Renaissance. F. Prerequisite: MU 334.
   Music of 15th and 16th centuries.

MU 532 03(3-0-0). Music of the Baroque. SS. Prerequisite: MU 334.
   Style and musical language of baroque from Gabrielli through Johann Sebastian Bach.

*MU 533 03(3-0-0). Music of the Classical Era. S. Prerequisite: MU 335.
   Vocal and instrumental music of middle and late 18th century.

MU 534 03(3-0-0). Music of the Romantic Era. F, S, SS. Prerequisite: MU 335.
   Musical works, philosophies, and related arts of 19th century. (NT-O)

*MU 535 03(3-0-0). Contemporary Music. S. Prerequisite: MU 430.
   20th-century music emphasizing stylistic and theoretical concepts.

MU 543 03(3-0-0). Advanced Research Methods in Music Therapy. S. Prerequisites: MU 241; MU 250.
   Research techniques used in measuring and recording behavior. Advanced methods used in music therapy research. (NT-O)

MU 544 03(3-0-0). Advanced Techniques-Neurologic Music Therapy. S. Prerequisites: BMS 300; MU 241; MU 250.
   Advanced neurologic music therapy techniques used with various clinical populations.

MU 545 03(2-2-0). Composition for Music Therapy Practitioners. S, SS. Prerequisite: None.
   Music composition techniques for the music therapy clinician. (NT-O)

MU 555 03(3-0-0). Choral Techniques, Style, and Interpretation. F. Prerequisite: MU 355.
   Techniques for achieving expressive conducting, problems of tone and diction, musical style and interpretation, and rehearsal techniques.

MU 556 03(3-0-0). Advanced Instrumental Conducting and Techniques. S. Prerequisite: MU 356.
   Score reading and analysis, preparation of instrumental scores for performance; expressive baton techniques, rehearsal methods and procedures.

*MU 564 03(3-0-0). Collaborative Piano Literature. F. Prerequisite: None.
   Literature and historical performance practices of collaborative piano music.

MU 565 02(2-0-0). Piano Literature-1800 to Present. S. Prerequisite: MU 465.
   Keyboard music representing Romantic and Impressionistic periods, nationalism, twelve-tone, and recent developments including aleatory elements.

MU 566 02(2-0-0). Choral Literature-Renaissance and Baroque. F, SS. Prerequisite: MU 355.
   Analytical and comparative survey of choral literature from Renaissance to 1750.

MU 567 02(2-0-0). Choral Literature-1750 to Present. S, SS. Prerequisite: MU 356.
   Analytical and comparative survey of choral literature from 1750 to present.

MU 569 02(1-2-0). Symphonic Literature. F. Prerequisite: MU 469.
   Symphonic development from early classicism through Impressionism; emphasis on formal structure, thematic sources, and social and historical influence.

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MU 590A-N Var[1-3]. Workshop. SS.

MU 608 01(0-3-0). Graduate Chamber Music. F, S. Prerequisite: Graduate standing; audition required. Graduate-level performance literature for small instrumental ensembles: duets, trios, quartets, and quintets.

MU 630 03(3-0-0). Methods of Music Research. F. Prerequisite: MU 317. Research, documentation, and bibliography for music history, literature, performance, theory, acoustics, music education, and quantitative testing. (NT-O)

MU 647 03(3-0-0). Historical Foundations of Music Therapy. S. Prerequisite: None. Historical foundations of music therapy in the United States from 1750 to the present. (NT-O)

MU 648 03(3-0-0). Neuroscience/Music Foundations in Therapy. S. Prerequisite: MU 544. Historical and scientific foundations of neurologic music therapy. (NT-O)

MU 649 03(0-0-3). Advanced Practice in Music Therapy. SS. Prerequisite: Admission to the Graduate School. Group study of advanced music therapy techniques. (NT-B)

MU 669 02(2-0-0). Instrumental Literature. S. Prerequisite: MU 469. Solo and small ensemble literature for string, woodwind, and brass instruments.

MU 671 01(0-0-1). Graduate Recital. F, S. Prerequisite: Written consent of instructor. Demonstration of graduate-level applied musical proficiency through public performance.

MU 672A-V Var[2-3]. Applied Music Instruction. F, S. Prerequisite: MU 472A-V. One or two half-hour lessons per week and one hour weekly performance class.

MU 673 Var[2-3]. Composition Instruction. Prerequisite: MU 473. One or two half-hour lesson per week.

MU 684 Var[1-3]. Supervised College Teaching. Supervised assistance in instruction.

MU 686 03(0-6-0). Music Therapy Practicum. F, S. Prerequisite: Six credits of MU 486A. Clinical practicum for graduate music therapy students. (NT-C)

MU 692 Var[1-3]. Seminar.

MU 695A-H Var[1-3]. Independent Study.

MU 696A-I Var[1-3]. Group Study.

MU 698 Var[1-3]. Research.

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NEUROBIOLOGY COURSES
Molecular, Cellular, and Integrative
Neuroscience Special Academic Unit

NB 192 01(0-0-1). Introductory Neuroscience Seminar. F, S.
Prerequisite: Written consent of instructor.
Introduction to neuroscience; discussion of concentrations, career paths and research opportunities. Group activities and strategies for success.

NB 500 01(0-0-1). Readings in Cellular Neurobiology. F.
Prerequisite: One college-level course in each: biology, biochemistry, physics, calculus; concurrent registration in NB 501 or BMS 500.
Membrane properties of nerve and muscle; molecular mechanisms of synaptic function; neuro-muscular units.

NB 501 02(2-0-0). Cellular and Molecular Neurophysiology. F.
Prerequisite: One college-level course in each: biology, biochemistry, physics, calculus. Credit not allowed for both NB 501 and BMS 500.
Membrane properties of nerve and muscle; molecular mechanisms of synaptic function; neuromuscular units.

NB 502/CM 502 02(1-3-0). Techniques in Molecular & Cellular Biology. F. Prerequisite: One college-level course with laboratory in each: biology, biochemistry, physics; written consent of instructor. Credit not allowed for both CM 502 and NB 502.
Current methods in molecular and cellular neurobiology.

NB 503/BMS 503 03(3-0-0). Developmental Neurobiology. S.
Prerequisite: One college-level course in each: biology, biochemistry, physics, calculus. Credit not allowed for both NB 503 and BMS 503.
Molecular mechanisms involved in development of nervous system including differentiation, growth, pathfinding, and synaptogenesis.

NB 505/BMS 505 03(3-0-0). Neuronal Circuits, Systems and Behavior. S. Prerequisite: BMS 325 or BMS 500 or NB 501. Credit not allowed for both NB 505 and BMS 505.
Anatomical and physiological organization of the nervous system.

NB 586 01(0-2-0). Practicum—Techniques in Neuroscience II. S.
Prerequisite: NB 501; NB 502/CM 502.
Current research projects in the laboratories of neuroscience faculty.

NB 600/PSY 600D 03(3-0-0). Advanced Psychology—Sensation and Perception. S. Prerequisite: PSY 456; fifteen credits in psychology. Credit not allowed for both NB 600 and PSY 600D.
Neural mechanisms of human perception; color and depth perception, pitch, loudness, and the effects of aging.

NB 650 01(1-0-0). Computer Analysis of Neuronal Proteins. S.
Prerequisite: None.
Theory and practice of using computers to study proteins.

NB 750 02(2-0-0). Physiology of Ion Channels. S. Prerequisite: BMS 500; written consent of instructor.
Physiological and structural analysis of membrane ion channels.

NB 771 01(1-0-0). Writing, Submitting and Reviewing Grants. F.
Prerequisite: None.
Preparation of NRSA fellowship proposals; proposal review; possible submission to NIH for funding.

NEUROBIOLOGY COURSES
Molecular, Cellular, and Integrative
Neuroscience Special Academic Unit

NB 793 01(0-0-1). Neuroscience Seminar.

NB 795 Var. Independent Study.

NB 796A-E Var. Group Study.

°Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
**NATURAL RESOURCES COURSES**

**Nondepartmental**

**Warner College of Natural Resources**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NR 120A 03(3-0-0)</td>
<td>Environmental Conservation</td>
<td>F, S. (GT-SC2, AUCC 3A). Prerequisite: None. Credit not allowed for both NR 120A and NR 120B. Overview of natural resources environmental concerns including population, pesticides, energy, and pollution. (NT-O)</td>
<td>3</td>
</tr>
<tr>
<td>NR 120B 04(3-3-0)</td>
<td>Environmental Conservation</td>
<td>F, S. Prerequisite: Participation in University Honors Program. Credit not allowed for both NR 120B and NR 120B. Overview of natural resources environmental concerns including population, pesticides, energy, and pollution.</td>
<td>4</td>
</tr>
<tr>
<td>+NR 130 03(3-0-0)</td>
<td>Global Environmental Systems</td>
<td>(GT-SC2, AUCC 3A). F, S, SS. Prerequisite: None. Required field trips.</td>
<td>3</td>
</tr>
<tr>
<td>NR 150 03(3-0-0)</td>
<td>Oceanography</td>
<td>(GT-SC2, AUCC 3A). F, S, SS. Prerequisite: None. Introduction to the geology, physics, chemistry, and biology of the world ocean; oceanic relationships with various human dimensions.</td>
<td>3</td>
</tr>
<tr>
<td>NR 192 02(0-0-2)</td>
<td>First Year Seminar in Environmental Studies</td>
<td>F. Prerequisite: None. Introduction to the disciplines involved in natural resources through exposure to current issues.</td>
<td>2</td>
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<tr>
<td>+NR 193 01(0-0-1)</td>
<td>FRS First Year Seminar</td>
<td>F, S. Prerequisite: Must be enrolled in one of the following majors: Forestry, Natural Resources Management, or Rangeland Ecology. This is a partial semester course. Required field trips. A first year seminar for all new Forest and Rangeland Stewardship students, both transfer and freshmen.</td>
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<tr>
<td>NR 220 05(2-6-0)</td>
<td>Natural Resources Ecology and Measurements</td>
<td>SS. Prerequisite: (BZ 110 and BZ 111) or BZ 120 or LIFE 103; MATH 118 or one course from MATH 141 to 161, or one course from MATH 229 or higher.</td>
<td>5</td>
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<tr>
<td>NR 300 03(2-0-1)</td>
<td>Biological Diversity</td>
<td>S. Prerequisite: NR 120A or NR 120B or one course in biology. Biological diversity examined in context of species; extinction. Principles, techniques of conservation biology utilized to understand and resolve issues.</td>
<td>3</td>
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<tr>
<td>NR 310 03(3-0-0)</td>
<td>Ecosystem Services and Human Well-Being</td>
<td>S. Prerequisite: AREC 202 or ECON 202 or ESS 211 or LAND 220/LIFE 220. Life supporting and life-fulfilling benefits that nature provides to humans; theory, case studies, and policy.</td>
<td>3</td>
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<tr>
<td>+NR 319 04(2-4-0)</td>
<td>Geospatial Applications in Natural Resources</td>
<td>F, S. Prerequisite: Junior standing. Required field trips. Introduction to global positioning systems (GPS), geographic information systems (GIS) and remote sensing (RS) with natural resource applications.</td>
<td>4</td>
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<tr>
<td>NR 320 03(3-0-0)</td>
<td>Natural Resources History and Policy</td>
<td>(AUCC 3D). F, S. Prerequisite: None. History, values and institutions, and policy process guiding natural resources management and conservation.</td>
<td>3</td>
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</table>

- Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
+NR 420 04(3-0-0). Integrated Ecosystem Management. F, S. Prerequisite: LAND 220/LIFE 220 or LIFE 320; NR 220; NR 319; NR 320; senior standing. Required field trips.
   Natural resource management exercises; quantitative integration techniques, group dynamics. ($)

NR 421 03(3-0-0). Natural Resources Sampling. S. Prerequisite: NR 220; STAT 201 or STAT 301.
   Designs, techniques, problems in sampling natural resource populations; analysis, interpretation of data.

NR 422 04(2-4-0). GIS Applications in Natural Resource Management. S. Prerequisite: NR 319 or NR 322.
   Development and implementation of GIS projects and problems in spatial data analysis.

NR 423 01(5-1-0). Applications of Global Positioning Systems. F, S. Prerequisite: NR 322 or NR 505.
   Introduction to concepts and use of global positioning systems with applications to natural resources.

NR 425 03(3-0-0). Natural Resource Policy and Sustainability. S. Prerequisite: F 325; NR 320.
   Principles, concepts, and operating examples of sustainable resource management with a concentration on forest policies and practices.

NR 432 01. Foundations of National Forest Lands Program. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.
   History of U.S. public land law and evolution of National Forests. Nature, policy, trend, and needs of lands program; its integration into management. (NT-C)

NR 433 04. Special Uses Management. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.
   Authorities, application, and administration; agriculture, aviation, community, public information, industrial, water, treasure trove, and cultural uses. (NT-C)

NR 434 03. Linear Uses and FERC Licenses. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.
   Rights-of-way authorities and management; road and trail grants and easements; communication uses; Federal Energy Regulatory Commission licenses. (NT-C)

NR 435 05. Valuation and Landownership Adjustment. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.
   Authorities, coordination, valuation, title; land purchase, donation, exchange, interchange, transfers, sales, condemnation, and negotiation. (NT-C)

NR 436 03. Right-of-Way Acquisition. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.
   Need, authority, policy, planning, acquiring, negotiating, and managing rights-of-way; cost-share agreements. (NT-C)

NR 437 03. Boundaries, Status, Claims, and Withdrawals. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.
   Administration of landownership status, title encumbrances, withdrawals, title claims, Native American rights and claims, property boundary management. (NT-C)

+NR 440 03(2-0-1). Applications in Conservation Planning. F. Prerequisite: NRRT 340. Required field trips.
   Conservation planning method applications that integrate natural resources by conservation organizations and government agencies. (NT-O)

NR 444 03(3-0-0). Fire Economics and Policy. S. Prerequisite: AREC 202 or ECON 202.
   Development of wildlife and fuel management economics integrated with critical federal policies.

+NR 460 03(3-0-0). Wilderness Management. S. Prerequisite: LAND 220/LIFE 220; NRRT 231. Required field trips.
   Management of wilderness in the U.S. National Wilderness Preservation System and equivalent international wildlands.

+NR 479 02(0-2-1), Restoration Case Studies. F. Prerequisite: LAND 220/LIFE 220 or LIFE 320; NR 326 or F 311 or RS 300; written consent of instructor. Required field trips one week prior to first day of semester.
   Analysis of ecological restoration projects. ($)
NR 515 03(0-0-3). Natural Resources Policy and Biodiversity. F, S. SS. Prerequisite: Political science, introductory course to natural resources management fields. Offered as correspondence course only.

Review evolution of natural resource policy, administration, and law emphasizing interdisciplinary concept of managing for biodiversity. (NT-C/O)

NR 520 03(3-0-0). Applied Optimization in Resource Management. S. Prerequisite: One course in each of the following subjects: calculus and economics.

Design optimization models to integrate economics, ecology, ecology and social concerns in natural resource management.

NR 521 02(2-0-0). Natural Resource Administration. F. Prerequisite: NR 320.

Administration of forest and natural resource projects in developed and developing countries.

NR 522 03(0-6-0). Wilderness Ecosystem Planning. S. Prerequisite: Written consent of instructor.

Expertise developed in preparing effective implementation plans for park and wilderness ecosystems.

NR 523/STAT 523 03(3-0-0). Quantitative Spatial Analysis. S. Prerequisite: STAT 301 or STAT 307. Credit not allowed for both NR 523 and STAT 523.

Techniques in spatial analysis: point pattern analysis, spatial autocorrelation, trend surface and spectral analysis.

NR 525 03(3-0-0). World Natural Resources. S. Prerequisite: Written consent of instructor.

Interdisciplinary approach to overview global problems and solutions in natural resources.

NR 526 04(4-0-0). Techniques for Ecosystem Management. S. Prerequisite: Enrollment in Continuing Education in Ecosystem Management (CEEM) program. Offered only through the Division of Continuing Education.

Assessing the biophysical and sociopolitical environment and decision-making techniques used in ecosystem management. (NT)

NR 527 03(2-0-1). Methods-Human Dimensions of Natural Resources. SS. Prerequisite: B.S. degree; participant in Advancing Human Dimensions Expertise Among Fish and Wildlife Agencies training program.

Human dimensions research in areas of problem identification, research process, survey methods, sampling, validity and reliability.

NR 528 03(2-2-0). Analysis: Human Dimensions–Natural Resources. SS. Prerequisite: B.S. degree; participant in Advancing Human Dimensions Expertise Among Fish and Wildlife Agencies training program; STAT 301 or STAT 307/ERHS 307 or STAT 311 or STAT 315.

Human dimensions analysis techniques: codebook development and data entry, univariate statistics, and bivariate/multivariate statistics.

NR 529 02(2-0-0). Concepts: Human Dimensions-Natural Resources. SS. Prerequisite: B.S. degree; participant in Advancing Human Dimensions Expertise Among Fish and Wildlife Agencies training program.

Concepts guiding human dimensions research: motivations/satisfactions, attitudes, values, attitude behaviors change and norms.

NR 530 01(1-0-0). Human Dimensions-Application. SS. Prerequisite: B.S. degree; participant in Advancing Human Dimensions Expertise Among Fish and Wildlife Agencies training program.

Application of human dimensions information; incorporate information into decision-making process.

NR 531 01(1-0-0). Public Participation. SS. Prerequisite: B.S. degree; participant in Advancing Human Dimensions Expertise Among Fish and Wildlife Agencies training program.

Diagnostic tools for public involvement; appropriate methods for specific situations, issues, and stakeholders.

NR 535 03(0-0-3). Action for Sustainable Behavior. F, S. SS. Prerequisite: Graduate student or senior standing; one course in human dimensions; one course in science. Offered as a correspondence course only.

Review sustainability issues and develop solutions considering environments; economics; psychology; sociology; law and politics; and administration. (NT-C/O)


A) Water Resources 02(1-2-0). B) Biological Diversity 02(1-2-0).
C) Ecologic Reconciliation 02(1-2-0). D) Ecosystem Services 02(2-0-0).

NR 541 02(2-0-0). Conservation Policy, Finance, and Governance. F. Prerequisite: Admission to the Conservation Leadership program. Overview of conservation policy, finance, and governance issues at the local, national, and international levels.

NR 542 02(2-0-0). Global Change and Conservation. F. Prerequisite: Admission to the Conservation Leadership program.

Potential ecological, societal, and economic impacts of global change across scales in the context of conservation.

NR 543A 02(2-0-0). Catalyzing Change: Conflict and Conservation. F. Prerequisite: Admission to the Conservation Leadership program.

Collaborative communication theories, methods, and tools to effectively create change in the field of conservation.

NR 543B Var[2-3]. Catalyzing Change: Collaborative Conservation. F. Prerequisite: Admission to the Conservation Leadership program. Collaborative communication theories, methods, and tools to effectively create change in the field of conservation.

NR 544-A. Conservation Methods. S. Prerequisite: Admission to the Conservation Leadership program.

A) Watershed sciences 01(1-0-0). B) Ecological sciences 01(1-0-0).
C) Social sciences 01(1-0-0). D) Spatial information 01(1-0-0). E) Integrative field work Var[2-4].

NR 545A-B 02(2-0-0). MultiLevel Views: Society/Conservation. S. Prerequisite: Admission to the Conservation Leadership program.

Myriad and often opposing views of societal and environmental problems across cultures and across scales. A) Mexico 02(2-0-0). B) Global 03(3-0-0).

NR 546-A-B. Socioecological Context. F, SS. Prerequisite: Admission to the Conservation Leadership program.

Background for field site-specific conservation: ecosystems, peoples, politics, and development. (NT-O)

A) Mexico 02(2-0-0). B) Global 03(3-0-0).

NR 547 02(2-0-0). Poverty and Sustainable Development. SS. Prerequisite: Admission to the Conservation Leadership program.

Theoretical and methodological tools to analyze the interactions between poverty and sustainable development in the field site country.


Fundamental theories and management practices of protected areas in a global context.

A) Mexico 02(2-0-0). B) Global 03(3-0-0). Subtopic B only: (NT-O).
NR 549 A Var[1-3]. Conservation/Systems Leadership. S, SS. Prerequisite: Admission to the Conservation Leadership program.

Conservation leadership development by exposure to leadership models, theories, case studies, assessments and trainings.

°NR 549 B Var[1-3]. Conservation/Systems Leadership: Field. SS. Prerequisite: Admission to the Conservation Leadership program.

Effective environmental leadership across cultures through exposure to leadership models, theories, case studies, assessments and trainings.

NR 550 03(3-0-0). Sustainable Military Lands Management. F, S, SS. Prerequisite: Completed undergraduate degree.

Overview of military lands in the U.S.—historical, geographical, environmental—and evolution of military lands as part of the federal lands system. (NT-O)

NR 551 03(3-0-0). Cultural Resource Mgmt on Military Lands. F, S, SS. Prerequisite: Completed undergraduate degree; NR 550.

Intro to cultural resource laws and policies for broad range of heritage resources, prehistoric and historic, with emphasis on tools and techniques. (NT-O)

NR 552 03(3-0-0). Ecology of Military Lands. F, S, SS. Prerequisite: Completed undergraduate degree; NR 550.

Landscape ecology of military lands with emphasis on ecological processes and principles as related to militarily-induced disturbances. (NT-O)

°NR 554/ANTH 554 03(2-0-0). Ecological and Social Agent-based Modeling. S. Prerequisite: Junior or senior standing. For upper level undergraduates. Credit not allowed for both NR 554 and ANTH 554.

Exploring the use and making of agent-based models featuring interacting individuals in ecological and social simulation, with examples and projects.

NR 555 02(2-0-0). Preparation of Grant Proposals. S. Prerequisite: STAT 301; one course in ecology.

Idea development, preparation, writing, and presentation of research proposals in natural resources.

NR 561 02(2-0-0). Habitat Evaluation Procedures. F, S, SS. Prerequisite: General biological, natural resources, or planning course work.

Rationale, philosophy, and use of habitat as a mechanism for conducting environmental impact assessments.

NR 562 03(3-0-0). Ecosystem Services in a Changing World. F. Prerequisite: Admission to the Conservation Leadership program.

Understanding of ecosystem services and global change.

NR 563 04(4-0-0). Research Methods in Conservation—Global. F. Prerequisite: Enrollment in the Conservation Leadership program.

Reviews the contribution of fieldwork/research in addressing conservation issues, social and ecological data collection, and analysis methods. (NT-O)

NR 565 03(3-0-0). Principles of Natural Resources Ecology. F, S. Prerequisite: Admission to the Masters of Natural Resources Stewardship degree program or written consent of instructor. Offered only online.

Overview of ecological fundamentals examined from the perspective of forest, rangeland, wildlife and fisheries science and management. (NT-O)

NR 566 03(3-0-0). Natural Resource Inventory and Data Analysis. S. Prerequisite: Admission to the Master of Natural Resources Stewardship degree program or written consent of instructor. Offered only online.

Sampling designs, implementation and analysis for inventory and monitoring of forests, rangelands, wetlands and streams. (NT-O)

NR 567 03(3-0-0). Analysis of Environmental Impact. F. Prerequisite: Admission to the Master of Natural Resources Stewardship degree program or written consent of instructor. Credit not allowed for both NR 567 and NR 622.

Preparation and evaluation of environmental impact statements under NEPA. (NT-O)

NR 568 03(3-0-0). Economics of Forests, Restoration and Fire. S. Prerequisite: Admission to the Masters of Natural Resources Stewardship degree program or written consent of instructor. Offered only online.

Overview of basic microeconomics principles as applied to forestry, restoration, and wildland fire management. (NT-O)

NR 578 03(3-0-0). Ecology of Disturbed Lands. S. Prerequisite: LAND 220/LIFE 220; SOCR 240. Credit not allowed for both RS 578 and NR 578.

Analysis of basic and applied ecological principles involved in the restoration of drastically disturbed lands.

NR 592 Var. Seminar in Natural Resources.

NR 600 02(1-0-1). Advanced Public Relations in Natural Resources. S. Prerequisite: NR 400.

Public relations aspects of current natural resource management programs; case history approach.

NR 621 03(1-4-0). Design of Geographic Information Systems. F. Prerequisite: CS 110; LAND 520 or NR 322.

Algorithms, procedures, and applications of spatial data handling and spatial analysis.

*NR 625 03(0-0-3). Community-Based Natural Resource Management. S. Prerequisite: One upper division course in natural resource ecology, management, or social science.

History, theory, practice, and evaluation of community-based natural resource management.

NR 676 04(3-2-0). Ecological Models. S. Prerequisite: NR 575.

Model development for ecosystems, subsystems, deterministic, stochastic models; validation, sensitivity analysis.

NR 678 04(3-0-1). Advanced Ecological Restoration. S. Prerequisite: BZ 450 or F 311 or LAND 220/LIFE 220; SOCR 240. Credit not allowed for both RS 478 and NR 678.

Analysis of environmental factors influencing restoration of disturbed lands and practices for successful restoration of disturbed ecosystems.

NR 684 Var[1-5]. Supervised College Teaching. Prerequisite: Written consent of instructor.

NR 687 Var[1-8]. Natural Resources Internship. Prerequisite: Written consent of instructor.

Field experience and exercises in international natural resources management.

NR 693 Var[1-2]. Natural Resources Stewardship Seminar. F. Prerequisite: Admission to the Master of Natural Resources Stewardship degree program or written consent of instructor.

Invited speakers will present different perspectives on natural resources. (NT-O)

NR 793 01(0-0-1). Seminar on Remote Sensing and GIS. Prerequisite: NR 322 or NR 323/GR 323 or NR 503/GR 503 or NR 505.

Techniques, use of remote sensing, GIS technologies for forest, range, wildlife, water, geology, recreation, and other resource management applications.
NRRT 100 03(3-0-0). Foundations of Recreation and Tourism. F. Prerequisite: None.
Current concepts, terminology, suppliers, and the social, economic, and personal benefits from recreation, leisure, and tourism.

NRRT 231 03(3-0-0). Principles-Parks/Protected Area Management. F. Prerequisite: None.
Tools and strategies used by managers in parks and protected areas.

NRRT 262 03(3-0-0). Principals of Environmental Communications. S. Prerequisite: None.
Principals of environmental communication, education, and interpretation for managing natural and cultural resources.

NRRT 270 03(3-0-0). Principles of Natural Resource Tourism. F, SS. Prerequisite: None.
Tourism and private commercial outdoor recreation industry in America. (NT-O)

NRRT 301 03(3-0-0). Conservation Leadership. F. Prerequisite: NRRT 262; NRRT 231.
Approaches to conservation leadership.

NRRT 320 03(3-0-0). International Issues-Recreation and Tourism. F, S. Prerequisite: None.
History, development, and preservation of international parks, preserves, tourist and historical sites. (NT-O)

NRRT 321 03(1-3-1). Travel Abroad-Marine Ecotourism-Bahamas. SS. Prerequisite: Minimum GPA of 2.500; ability to swim; passport; three credit natural science course.
Environmental and socio-cultural aspects of marine ecotourism in the Bahamas.

NRRT 330 03(3-0-0). Social Aspects of Natural Resource Management. F, S. Prerequisite: None.
Conceptual frameworks of human dimension research and its application to resource management decisions.

NRRT 331 03(2-3-0). Management of Parks and Protected Areas. S. Prerequisite: NRRT 231; NRRT 330.
Comprehensive assessment of problems confronted by park professionals and the techniques and tools applied to their solution. ($)

+NRRT 340 03(3-0-0). Principles in Conservation Planning and Mgmt. F. Prerequisite: NRRT 231. Required field trips.
Social, economic, legal, and ecological concepts that shape planning and management frameworks within conservation.

NRRT 350 03(2-2-0). Wilderness Leadership. F. Prerequisite: None.
Practical and philosophical aspects of wilderness usage including safety, group dynamics, and backcountry skills. ($)

NRRT 351 03(2-2-0). Wilderness Instructors. S. Prerequisite: None.
Preparation to safely lead and instruct groups in outdoor wilderness programs; further refine skills including judgment and leadership. ($)

NRRT 360 03(3-0-0). Group Decision Making. F. Prerequisite: NRRT 262.
Theoretical, critical, and practical approaches to group decision making, collaboration, and teamwork related to natural resource management.

NRRT 361 03(3-0-0). Natural Resources and the Media. S. Prerequisite: NRRT 262.
Representations of the environment in the media and strategies for effective media relations about natural resource issues.

NRRT 362 03(3-0-0). Environmental Conflict Management. F. Prerequisite: NRRT 262.
Theoretical, critical, and practical approaches to negotiation, mediation, and conflict management strategies related to natural resources.

NRRT 363 03(2-2-0). Outdoor Recreation Programming. F, S. Prerequisite: NRRT 231 or NRRT 270.
Develop administrative and program planning skills for private, public, and nonprofit recreation/tourism organizations.

NRRT 370 03(3-0-0). Managing Tourism in the E-Commerce Era. F, S. Prerequisite: NRRT 270.
E-commerce foundations, business models, and practices in the recreation and travel industry.

NRRT 371 03(2-1-0). Techniques in Interpretation. F. Prerequisite: NRRT 262.
Intermediate techniques in interpretation including exhibit design and construction, personal program development and visitor studies.

NRRT 372 03(3-0-0). Tourism Promotion. F, S. Prerequisite: NRRT 270.
Planning development and implementation of marketing programs specifically applied to the recreation, travel, and tourism industries.

NRRT 375 03(2-2-0). Budgeting and Revenue Resources. F. Prerequisite: NRRT 231 or NRRT 270.
Budget development, presentation, types, techniques; computer-aided budgeting using spread sheets; revenue generating sources.

NRRT 376 03(2-2-0). Human Dimensions Research and Analysis. F, S. Prerequisite: STAT 201.
Application of human dimensions (recreation) research and analysis techniques to natural resource issues.

NRRT 384 Var. Supervised College Teaching. A maximum of 10 combined credits for all 384 and 484 courses are counted towards graduation requirements.

NRRT 400 03(3-0-0). Environmental Governance. F. Prerequisite: NRRT 231.
Theory and practice of prevalent environmental governance approaches in diverse social and environmental contexts.

+NRRT 401 03(3-0-0). Collaborative Conservation. F Prerequisite: NRRT 231 or NRRT 262. Required field trips.
Guiding principles and practices for effectively engaging stakeholders in conservation issues and management. ($)

+NRRT 431 03(3-0-0). Protected Areas, Working Lands, Livelihoods. S. Prerequisite: LAND 220/LIFE 220; NRRT 231. Required field trips.
Management practices of protected areas and working lands that work at the interface of ecological, human, and economic dimensions. ($)

NRRT 432 01. Foundations of Forest Recreation. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.
History, philosophy, role, and sources of information of the Forest Service and National Forest System. (NT-C)

NRRT 433 04. Meeting Needs of Recreation Users. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.
Visitor behavior, communications and conflicts, working with volunteers, programs, partnerships, quality service, and role of interpretive services. (NT-C)
NRRT 434 03. Recreation Special Uses and Appeals. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.

Special use benefits, authorities, planning, terms and conditions, administration and kinds, appeal review, discretionary review and decisions. (NT-C)

NRRT 435 03. Trails, Facility Design, Operation, Maintenance. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.

Trail planning, development, maintenance; recreation site planning, design operation, maintenance; visitor and resource protection. (NT-C)

NRRT 436 02. Recreation, Visual, Cultural Resource Management. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.

Economic analysis, recreation opportunity spectrum, visual and cultural resource management. (NT-C)

NRRT 437 02. Off-Road Vehicle, River, and Winter Recreation. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.

History, authorities, planning, management, and coordination of off-road, river, and winter recreation. (NT-C)

NRRT 438 02. Management of Wilderness. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only.

Forest Service role, management principles, legislative differences, components, public education, visitor management, and wilderness management skills. (NT-C)

NRRT 439 03(3-0-0). Open Space and Natural Area Management. S. Prerequisite: NR 440 or NRRT 331.

Acquisition of, planning for, and management of local government and private open space and natural areas.

NRRT 440 03(3-0-0). Applications in Environmental Communication. S. Prerequisite: NRRT 262.

Application of tools and techniques for communicating to audiences about issues related to conservation, environment and sustainability.

NRRT 441 03(2-2-0). Spatial Analysis of Protected Areas. S. Prerequisite: NRRT 231.

Spatial analytical techniques used in planning and managing protected areas, including locating, managing, and assessing parks.

NRRT 442 03(3-0-0). Tourism Planning. F, S. Prerequisite: NRRT 270.

Planning for regional tourism resources and programs.

NRRT 450 03. Wilderness Philosophy and Ethic Development. F, S, SS. Offered as correspondence course only.

History, philosophical origin, ethics, and international context of wilderness; history of conservation movement. (NT-C)

NRRT 451 03. National Wilderness Preservation System. F, S, SS. Prerequisite: NRRT 450. Offered as correspondence course only.

Early history and key components of the Wilderness Act, wilderness legislation since 1964, and related natural systems. (NT-C)

NRRT 452 04. Management of the Wilderness Resource. F, S, SS. Prerequisite: NRRT 451. Offered as correspondence course only.

Ecosystem characteristics, basic principles of wilderness management, and management of specific resources and nonconforming uses. (NT-C)

NRRT 453 03. Management of Recreation Resources. F, S, SS. Prerequisite: NRRT 451. Offered as correspondence course only.

Managing for quality visitor experiences and for minimal recreation impacts; techniques for wilderness education/information. (NT-C)

NRRT 454 03. Wilderness Management Planning. F, S, SS. Prerequisite: NRRT 451. Offered as correspondence course only.

Agency differences in planning, basic planning concepts, and the Limits of Acceptable Change. (NT-C)

NRRT 455 03. Wilderness Management Skills and Projections. F, S, SS. Prerequisite: NRRT 451. Offered as correspondence course only.

Using primitive means to achieve management objectives, no-trace camping methods and volunteers, and expectations for the future. (NT-C)

NRRT 457 03. Off-Highway Vehicle Recreation in America. F, S, SS. Offered as correspondence course only.

Overviews the supply and demand of off-highway vehicle recreation. (NT-C)

NRRT 458 03. Planning for Off-Highway Vehicle Recreation. F, S, SS. Prerequisite: NRRT 457. Offered as correspondence course only.

Develop working knowledge of the planning tools, concept, and process for off-highway vehicle recreation. (NT-C)

NRRT 459 03. Managing Off-Highway Vehicle Recreation. F, S, SS. Prerequisite: NRRT 457. Offered as correspondence course only.

Developing working knowledge of the management tools, techniques, trends, and challenges with off-highway vehicle recreation. (NT-C)

NRRT 460/RMM 460 03(3-0-0). Event and Conference Planning. S. Prerequisite: NRRT 270 or RRM 101. Credit not allowed for both NRRT 460 and RRM 460.

Foundation in planning, organizing, and producing special events and conferences. Functions and strategies necessary for effective event management.

NRRT 462 03(3-0-0). Environmental Communication—Natural Resources. S. Prerequisite: NRRT 262.

Exploration and application of theories, concepts, and techniques for successful environmental communication in natural resources.

NRRT 463 03(3-0-0). Non-Profit Administration in Conservation. S. Prerequisite: NRRT 231; NRRT 262.

Role of NGOs in protected-area management and conservation education; models for development, including grant writing, in conservation.

NRRT 470 03(3-0-0). Tourism Impacts. F, S. Prerequisite: NRRT 270.

Social, cultural, physical, and economic impacts of tourism; techniques for assessing impacts.

NRRT 471 03(3-0-0). Starting and Managing Tourism Enterprise. F, S. Prerequisite: NRRT 231 or NRRT 262 or NRRT 270.

Aspects of starting and managing a tourism enterprise.

NRRT 473 03(3-0-0). Ski Area Management. F, S. Prerequisite: NRRT 270; senior standing.

Ski area management; history and trends, ski area operations, human resource management, environmental issues, liability, resort planning and design. ($)

NRRT 483 Var. Off-Campus Study.

NRRT 487 Var. Internship.

NRRT 495A-C Var. Independent Study.


NRRT 496 Var. Group Study.

NRRT 499 Var. Senior Thesis.

Independent research project culminating in thesis presented to faculty mentor.

NRRT 504 02(2-0-0). Water-Based Recreation. S. Prerequisite: Written consent of instructor.

Identify issues and management strategies for recreation utilization of water resources.

° Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
NRRT 505 03(3-0-0). Environmental Education History and Theory. F, S, SS. Prerequisite: Upper-division course in natural resources.

- History and theories, planning and instruction; outcomes; historical events; ecological literacy, experiential learning models. (NT-O)

NRRT 506 03(3-0-0). Methods in Environmental Education Research. F, S, SS. Prerequisite: Upper-division course in natural resources.

- Research methods and designs; literature reviews, needs assessments and program evaluation of environmental education in informal settings. (NT-C)

NRRT 507 03(3-0-0). Environmental Education Planning. F, S, SS. Prerequisite: One upper-division course in natural resources, biological sciences, or ecology.

- Informal learning theory; evaluation models focused on education in informal settings such as nature centers, zoos, etc. (NT-C)

NRRT 508 03(3-0-0). Current Issues in Environmental Education. F, S, SS. Prerequisite: One upper-division course in natural resources, biological sciences, or ecology.

- Impact of current events, legislation, demographic changes, and other events on informal environmental education. (NT-C)

NRRT 509 03(3-0-0). Science Education in Informal Settings. S, SS. Prerequisite: Upper division course in natural resources or related field.

- NOTE: This course does not count towards State teacher licensure.

- Theory, application of teaching environmental science in informal settings – nature centers, zoos, etc. Inquiry, safety, group management, experience.

NRRT 510 03(3-0-0). Ecotourism. S. Prerequisite: NRRT 470.

- Concept of ecotourism, impacts associated with ecotourism, and role of education/interpretation in mitigating these impacts.

NRRT 565 03(3-0-0). Research-Human Dimensions Natural Resources. F. Prerequisite: None.

- Theory, research, literature review, hypothesis development, scientific writing, proposal development.

NRRT 600 02(0-0-2). Tourism Industry Concepts and Practices. F. Prerequisite: Graduate standing. Offered only as an online course. This is a partial semester course.

- Primary conceptual issues of contemporary tourism important to comprehend the practice of tourism. (NT-O)

NRRT 601 02(0-0-2). Tourism Quantitative Analysis I. S. Prerequisite: STAT 312; graduate student standing. Offered only as an online course. This is a partial semester course.

- Statistical techniques used by researchers to inform and support tourism decision-making. (NT-O)

NRRT 602 02(0-0-2). Tourism Quantitative Analysis II. S. Prerequisite: Graduate student standing. Offered only as an online course. This is a partial semester course.

- Explores the domestic and international sources of data and their applications for decision-making in tourism. (NT-O)

NRRT 605 03(3-0-0). Human Dimensions of Natural Resources Theory. S. Prerequisite: None.

- Application of theories and conceptual approaches from social sciences to study of recreation behavior and natural resource issues.

NRRT 610 02(0-0-2). Natural Resource Management and Tourism. F. Prerequisite: Graduate student standing. Offered only as an online course. This is a partial semester course.

- Connection between the management of tourism resources and the changing conditions of the natural world. (NT-O)

NRRT 615 02(0-0-2). Sustainable Tourism Development Foundations. F. Prerequisite: Graduate student standing. Offered only as an online course. This is a partial semester course.

- Theory, practice, history, terminology and issues surrounding sustainable tourism development. (NT-O)

NRRT 625 02(0-0-2). Communication/Conflict Management in Tourism. S. Prerequisite: Graduate student standing. Offered only as an online course. This is a partial semester course.

- Negotiation tools for effective organizational communication/conflict management in tourism. (NT-O)

NRRT 655 02(0-0-2). Tourism Marketing Concepts and Applications. F. Prerequisite: Graduate student standing. Offered only as an online course. This is a partial semester course.

- Marketing processes as they apply to travel and tourism. (NT-O)

NRRT 662 02(0-0-2). Global Tourism Policy. S. Prerequisite: Graduate student standing. Offered only as an online course. This is a partial semester course.

- Major global policies, trends, and challenges facing the travel and tourism industry. (NT-O)

NRRT 665 03(2-2-0). Survey Research and Analysis. S. Prerequisite: NRRT 565; STAT 301.

- Survey research, design, and analysis in human dimensions of natural resources.

NRRT 666 03(3-0-0). Qualitative Research in NRRT. Prerequisite: NRRT 565.

- Qualitative approaches to tourism research and techniques from a range of disciplinary backgrounds; methodological aspects.

NRRT 671 02(0-0-2). Strategic Management for Travel and Tourism. S. Prerequisite: Graduate standing. Offered only as an online course. This is a partial semester course.

- Factors, tools, and techniques for strategic management of a travel and tourism business or organization. (NT-O)

NRRT 679A-B 01(0-0-1). Current Topics in Nature-Based Tourism. F, S. Prerequisite: Graduate standing. Students will enroll in this course during both the Fall and Spring semesters.

- Current topics in nature-based travel and tourism.

A) Fall. B) Spring.

NRRT 695A-D Var. Independent Study.


NRRT 698 Var. Research.


NRRT 765 03(2-2-0). Applied Multivariate Analysis. F. Prerequisite: NRRT 665.

- Application and interpretation of multivariate statistics to human dimensions in natural resources, recreation, and tourism.

NRRT 784 Var. Supervised College Teaching.

NRRT 798 Var. Research.


° Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCCsubcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
NATURAL SCIENCES COURSES
Nondepartmental
College of Natural Sciences

NSCI 192 02(0-0-2). Introductory Seminar. F. Prerequisite: None.
Introduction to the culture and values of science and the College of Natural Sciences.

NSCI 295 Var[1-3]. Independent Study-Natural Sciences. Prerequisite: Written consent of Natural Sciences Dean’s Office.

NSCI 296 Var[1-3]. Group Study-Natural Sciences. Prerequisite: Written consent of Natural Sciences Dean’s Office.

NSCI 298 Var[1-3]. Undergraduate Research-Natural Sciences. Prerequisite: Written consent of Natural Sciences Dean’s Office.

NSCI 384 Var[1-3]. Supervised College Teaching. F, S. Prerequisite: Written consent of instructor. A maximum of 10 combined credits for all 364 and 484 courses are counted towards graduation requirements. Supervised experience in computer lab.

NSCI 487 Var[1-3]. Internship-Natural Sciences. Prerequisite: Written consent of Natural Sciences Dean’s Office.

NSCI 495 Var[1-3]. Independent Study-Natural Sciences. Prerequisite: Written consent of Natural Sciences Dean’s Office.

NSCI 496 Var[1-3]. Group Study-Natural Sciences. Prerequisite: Written consent of Natural Sciences Dean’s Office.

NSCI 498 Var[1-3]. Undergraduate Research-Natural Sciences. Prerequisite: Written consent of Natural Sciences Dean’s Office.

NSCI 579/VS 579 03(3-0-0). Animal Behavior in Captive Populations. F, S. Prerequisite: Enrollment in the M.P.N.S., Zoo, Aquarium and Shelter Management specialization, or BZ 300. Credit not allowed for both NSCI 579 and VS 579.

How animals learn, perceive their world, and behave, and how all of those intersect to alter behavior in captive settings.

NSCI 590A-G. Workshop in Instruction.
A) Science instruction in rural Colorado. Var[1-3]. Concurrent registration not allowed in NSCI 590A-B and EDUC 591B.
B) Mathematics instruction in rural Colorado. Var[1-3]. Concurrent registration not allowed in NSCI 590A-B and EDUC 591B.
C) Small-scale science-teachers as researchers. 04(2-4-0).
D) Colorado science teacher enhancement project. 07(7-9-0).
E) Summer mathematics. 03(3-0-0).
F) Small-scale chemistry. 02(1-2-0).

NSCI 596 Var[1-3]. Small-Scale Science Group Study.

NSCI 601/PHIL 601 01(0-0-1). Master of Profess. Natural Sciences Ethics. F. Prerequisite: Enrollment in the Master of Professional Natural Sciences program. Credit not allowed for both NSCI 601 and PHIL 601. This is a partial-semester course.
Ethical issues involving the care and treatment of animals in captive environments. Lectures, case studies, discussions, and student presentations.

NSCI 610 03(2-2-0). Team Research in Quantitative Ecology. S. Prerequisite: Written consent of instructor.
Interdisciplinary team-based research aimed at studying real life models in quantitative ecology using mathematical and statistical tools.

NSCI 619 03(1-3-1). Physics for Science Educators. F, S, SS. Prerequisite: Admission into the MNS program.
Materials and energy transduction for grade 6-12 science teachers, with emphasis on optics, acoustics, and electromagnetism. (NT-O)

NSCI 620 03(1-3-1). Chemistry for Science Educators. F, S, SS. Prerequisite: Admission into the MNS program.
Theoretical and experimental chemistry for grade 6-12 science teachers, with emphasis on water chemistry. (NT-O)

NSCI 630 03(1-3-1). Spectroscopy for Science Educators. F, S, SS. Prerequisite: Admission into the MSN program.
Theory and applications of spectroscopy for grade 6-12 science teachers. (NT-O)

NSCI 640 03(1-3-1). Energetics for Science Educators. F, S, SS. Prerequisite: Admission into the MNS program.
Production and use of energy for grade 6-12 science teachers, with emphasis on chemical and biological systems. (NT-O)

NSCI 650 03(1-3-1). Pollution and Environmental Biology for Educators. F, S. Prerequisite: Admission to the MNS program. (NT-O)

NSCI 660 03(0-0-3). Evolutionary Biology for Educators. F, S, SS. Prerequisite: Admission to Master of Natural Sciences Education (M.N.S.E.) degree program.
Evolutionary theory, with an emphasis on innovative methods for teaching evolutionary biology in grades 6-12. (NT-O)

NSCI 687A-B. MPNS Internship. F, S, SS

NSCI 693 01(0-0-1). Seminar—MPNS. F. S. SS. Prerequisite: Enrollment in the MPNS program.
Students will present and discuss current research relevant to their specializations and present results of their internships and group projects.

NSCI 695 03(0-0-3). Independent Study for the MNSE, SS. Prerequisite: NSCI 698 and written consent of instructor.
Independent study based on review of the primary scientific literature in biology, chemistry, or physics.

NSCI 696 Var[1-6]. Group Study. F, S, SS. Prerequisite: Bachelor’s degree.

NSCI 698 06(0-0-6). Research Experience in Natural Sciences. SS. Prerequisite: Nine credits MNSE program coursework.
Research experience in biology, chemistry, or physics.

° Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCCsubcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
### OCCUPATIONAL THERAPY COURSES

**Department of Occupational Therapy**  
**College of Health and Human Sciences**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Note</th>
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</thead>
<tbody>
<tr>
<td>OT 110 03(3-0-0)</td>
<td>Introduction to Occupational Therapy.</td>
<td>F, S, SS. Prerequisite: None. Roles and activities in occupational therapy. (NT-O)</td>
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<tr>
<td>OT 215 01(0-0-1)</td>
<td>Medical Terminology.</td>
<td>F, S. Prerequisite: None. Definition and use of medical terms. (NT-O)</td>
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<tr>
<td>OT 355 02(1-0-1)</td>
<td>Handicapped Individual in Society.</td>
<td>F, S. Prerequisite: PSY 100 or SOC 100. Description and exploration of handicapping conditions; review of support systems including legal and financial implications.</td>
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<tr>
<td>OT 450 03(0-1-2)</td>
<td>Biomechanics of Human Occupation.</td>
<td>S, SS. Prerequisite: Minimum of 4 credits of either combined anatomy and physiology or human anatomy at the 200-level or higher; concurrent registration allowed. Exploration of performance of the activities of daily living in context as impacted by function/dysfunction of the human musculoskeletal system. (NT-B)</td>
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<tr>
<td>OT 597 Var.</td>
<td>Group Study.</td>
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<tr>
<td>OT 601 03(1-0-2)</td>
<td>Occupation and Rehabilitation Science I.</td>
<td>F. Prerequisite: Admission to master’s degree program in occupational therapy. Multidisciplinary perspectives on human performance and participation in everyday occupations.</td>
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<tr>
<td>OT 610 03(0-2-2)</td>
<td>Professional Decision Making.</td>
<td>F. Prerequisite: Admission to master’s degree program in occupational therapy. Exploration of the thought processes occupational therapists use when determining how best to address clients’ needs. (S)</td>
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<tr>
<td>OT 611 03(0-0-3)</td>
<td>Reflective and Evidence-Based Practice.</td>
<td>F. Prerequisite: OT 678 or sufficient exposure in fieldwork to contribute to and complete course requirements. Development of reflective and evidence-based practice skills through integrating and synthesizing fieldwork experiences in OT practice.</td>
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<tr>
<td>OT 620 03(3-0-0)</td>
<td>Research to Practice I.</td>
<td>F. Prerequisite: Admission to master’s degree program in occupational therapy. Critically evaluate qualitative and quantitative research processes pertaining to individuals.</td>
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<tr>
<td>OT 621 03(1-2-1)</td>
<td>Occupational Performance: Infancy-Childhood.</td>
<td>F. Prerequisite: OT 678. Optimizing occupational performance and participation for infants and children within a contextual framework. (S)</td>
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<tr>
<td>OT 630 03(0-0-3)</td>
<td>Occupational Performance: Adult to Old Age I.</td>
<td>S. Prerequisite: OT 610; OT 620. Concurrent registration in OT 636, OT 660, OT 665, and OT 686C. Optimizing occupational performance for adults and older adults with attention to roles, satisfaction, competence and activities.</td>
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<tr>
<td>OT 631 03(0-0-3)</td>
<td>Program Assessment and Development.</td>
<td>F. Prerequisite: OT 678. Assessment of program strengths and needs, followed by development of proposals to support occupational performance and participation.</td>
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<tr>
<td>OT 636 02(0-4-0)</td>
<td>Occupational Performance: Adult/Old Age I Lab.</td>
<td>S. Prerequisite: Concurrent registration in OT 630; OT 660; OT 665; OT 686C Optimizing occupational performance for adults and older adults with attention to roles, satisfaction, competence, and activities.</td>
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<tr>
<td>OT 640 03(3-0-0)</td>
<td>Research to Practice II.</td>
<td>S. Prerequisite: OT 620. Critically evaluate qualitative and quantitative research processes pertaining to groups and systems.</td>
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<tr>
<td>OT 641 03(1-0-2)</td>
<td>Occupation and Rehabilitation Science II.</td>
<td>S. Prerequisite: OT 601; OT 621; OT 631. Explore historical evolution of topics and the link to future implications for and growth of occupation and rehabilitation science.</td>
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<tr>
<td>OT 656 03(2-0-1)</td>
<td>Topics on Brain Plasticity and Performance.</td>
<td>S. Prerequisite: Occupational Therapy graduate student or written consent of instructor. Multidisciplinary viewpoints on brain plasticity and its relationship to performance across the lifespan.</td>
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<tr>
<td>OT 660 03(0-0-3)</td>
<td>Occupational Performance: Adult to Old Age II.</td>
<td>S. Prerequisite: OT 610; OT 620; Concurrent registration in OT 630, OT 636, OT 665, and OT 686C. Foundations of occupational performance for adults and older adults with attention to abilities, skills and developed capacities. (S)</td>
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<tr>
<td>OT 661 03(1-2-1)</td>
<td>Occupational Performance: Adolescent-Young Adult.</td>
<td>S. Prerequisite: OT 621. Corequisite: OT 686D must be taken concurrently. Optimizing occupational performance and participation for youth and young adults within a contextual framework.</td>
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<tr>
<td>OT 665 02(0-4-0)</td>
<td>Adult to Old Age II Lab.</td>
<td>S. Concurrent registration in OT 660. Optimizing occupational performance for adults and older adults with attention to abilities, skills and developed capacities.</td>
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<tr>
<td>OT 666 03(0-0-3)</td>
<td>Optimizing Occupation through Technology.</td>
<td>S. Prerequisite: Admission to Occupational Therapy M.O.T., M.S., or Ph.D. program. Use of technology-based resources and/or strategies (current and emerging) to meet client needs in their everyday occupations and contexts.</td>
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<tr>
<td>OT 676 03(3-0-0)</td>
<td>Pathokinesiological Conditions and Assessment.</td>
<td>S. Prerequisite: OT 450. Various musculoskeletal imbalances and injuries that present as difficulties in function and participation in everyday activity.</td>
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<tr>
<td>OT 684 Var.</td>
<td>Supervised College Teaching.</td>
<td>F, S.</td>
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<tr>
<td>OT 686A-E</td>
<td>Fieldwork I.</td>
<td>Prerequisite: Evidence of professional liability insurance. Level I fieldwork in various settings. A) OT Process Var[1-4]. F, S, SS. Prerequisite: Admission to OT master’s degree program. (S) B) Seminar 03(0-2-2). F, S. Prerequisite: Successful completion of all first year courses. (S) C) Adult to Old Age Var[1-4]. S, SS. Prerequisite: OT 686A; OT 610. Corequisite: OT 630 and OT 660 must be taken concurrently. (S) D) Infancy to Young Adult Var[1-4]. F, S. Prerequisite: Evidence of professional liability insurance. OT 687; (OT 621 or concurrent registration) or (OT 661 or concurrent registration). (S) E) Special Interest Var[1-4]. F, S, SS. Prerequisite: OT 686A. (S)</td>
<td></td>
</tr>
</tbody>
</table>
OT 688A-T Var[1-12]. Fieldwork IIB. F, S, SS. Prerequisite: Evidence of professional liability insurance; successful completion of all coursework and approval of department head or degree in Occupational Therapy.


OT 690 Var[1-9]. Workshop.

OT 692 Var. Seminar.

OT 694 Var. Independent Study.

OT 696 Var. Group Study.

OT 698 Var. Research.


OT 701 03(0-0-3). Occupation and Rehabilitation Science III. F. Prerequisite: OT 640 or 3 credits quantitative and 3 credits qualitative research; OT 641.
Investigation of the intersection of occupational science and rehabilitation science research situated in various paradigms.

°OT 710 03(0-0-3). Teaching Occupation and Rehab Science. S. Prerequisite: Written consent of instructor.
Design and implementation of teaching and learning philosophies and approaches in occupation and rehabilitation science contexts.

OT 784 Var[1-4]. Supervised College Teaching. F, S, SS. Prerequisite: Admission into a PhD program.

OT 786 Var[1-9]. Practicum. F, S, SS. Prerequisite: Concurrent enrollment in OT 620 or 3 credits of qualitative research.

OT 792 Var[1-3]. Seminar. F, S, SS. Prerequisite: Admission into a PhD program.

OT 794 Var[1-6]. Independent Study. F, S, SS. Prerequisite: Admission into a PhD program.

OT 796 Var[1-6]. Group Study. F, S, SS. Prerequisite: Admission into a PhD program.

OT 799 Var[1-15]. Dissertation. F, S, SS. Prerequisite: None.

° Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
PUBLIC HEALTH COURSES
Graduate Degree Program in Public Health
Special Academic Unit

PBHL 516 02(2-0-0-0), Public Health Foundations. F. Prerequisite: Graduate standing; Colorado School of Public Health student. Credit not allowed for both PBHL 516 and PSY 516A-C.
   Introduction to public health history, concepts, principles, and current trends.

PBHL 686 02(0-0-2), Public Health Practicum. F, S, SS. Prerequisite: Admission to Master of Public Health Program.

PBHL 692 Var[1-6], Public Health Seminar. F, S, SS. Prerequisite: Graduate standing. May be taken for credit up to 3 times; maximum of 9 credits allowed in course.
   Seminars pertaining to current public health issues. Topics will vary.

PBHL 695 Var[1-6], Public Health Independent Study. F, S, SS. Prerequisite: Graduate standing; Colorado School of Public Health student. May be taken for credit up to 3 times; maximum of 9 credits allowed.

PBHL 698 A-G 02(0-0-2), Public Health Capstone. F, S, SS. Prerequisite: Admission to Master of Public Health program.

◊ Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
PF 110 03(2-0-1). Performing Arts Around the World. F. Prerequisite: None.
Music, theatre, and dance traditions via exploration of a broad range of representative cultures.

PF 250 02(1-3-0). Performing in Musical Theatre. S. Prerequisites: MU 272Q; TH 151 or D 120A or D 120B or D 120C.
Skills and techniques used in music, theatre, and dance. Brief history and technical production overview of musical theatre.

° Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
PHYSICS COURSES

Department of Physics

College of Natural Sciences

PH 110 03(3-0-0). Descriptive Physics. (GT-SC2, AUCC 3A). F, S, SS. Prerequisite: None. Credit not allowed for both PH 110 and PH 121. Conceptsual aspects of physics applied to phenomena in everyday life and to problems in other fields of science.

PH 111 01(0-2-0). Descriptive Physics Laboratory. (GT-SC1, AUCC 3A). F, S, SS. Prerequisite: PH 110 or concurrent registration. Experiments dealing with basic physics concepts including explorations of everyday phenomena.

PH 121 05(3-2-1). General Physics I. (GT-SC1, AUCC 3A). F, S, SS. Prerequisite: MATH 125 or concurrent registration; Credit not allowed for both PH 121 and PH 110; or for both PH 121 and PH 141. Concepts of force, torque, energy, momentum, work used to cover fluids, waves, sound, temperature, heat; biological, physical examples (noncalculus).

PH 122 05(3-2-1). General Physics II. (GT-SC1, AUCC 3A). F, S, SS. Prerequisite: PH 121. Credit not allowed for both PH 122 and PH 142. Electricity including electrostatics and simple circuits; magnetism; optics; nuclear physics; radiation; biological, physical examples (noncalculus).

PH 141 05(3-2-1). Physics for Scientists and Engineers I. (GT-SC1, AUCC 3A). F, S. SS. Prerequisite: MATH 125 or concurrent registration; MATH 155 or concurrent registration) or MATH 160 or concurrent registration. Credit not allowed for both PH 141 and PH 121. Forces, energy, momentum, angular momentum, oscillations, waves, heat, thermodynamics (calculus based).

PH 142 05(3-2-1). Physics for Scientists and Engineers II. (GT-SC1, AUCC 3A). F, S. SS. Prerequisite: MATH 161 or concurrent registration or MATH 255 or concurrent registration; PH 141. Credit not allowed for both PH 142 and PH 122. Electricity and magnetism, circuits, light, optics (calculus based).

PH 160 03. Basic Physics and Physical Worldview. F, S, SS. Prerequisite: High school algebra or MATH 118; MATH 126. Offered as telecourse only. Physics, cultural and historical background of physical thought, humans' relationship to physical world. (NT-T)

PH 192 02(0-0-2). The Flying Circus of Physics. F. Prerequisite: None. Richness and variety of physical phenomena; physical world view including appreciation for the academic community.

PH 245 03(2-3-0). Introduction to Electronics. F. Prerequisite: MATH 161; PH 142. AC circuits, physical bases and applications of electronic devices.

PH 293 01(1-0-0). Selected Topics in Physics. F, S, SS. Prerequisite: PH 142. Selected topics in physics with emphasis on depth of understanding.

PH 298 Var[1-6]. Introductory Research. Prerequisite: Written consent of instructor.

PH 314 04(4-0-0). Introduction to Modern Physics. S. Prerequisite: MATH 261 or concurrent registration; PH 142. Relativity; quantum mechanics; atomic structure; applications to solid-state, nuclear, and elementary particle physics.

PH 315 02(0-4-0). Modern Physics Laboratory. S. Prerequisite: PH 314 or concurrent registration. Experiments in modern physics.

PH 341 04(4-0-0). Mechanics. F. Prerequisite: MATH 340 or MATH 345; PH 141. Particle dynamics, translation and rotation of rigid bodies, moving coordinate systems, Lagrangian mechanics, matrix and tensor methods.

PH 351 04(4-0-0). Electricity and Magnetism. S. Prerequisite: MATH 340 or MATH 345; PH 142. Electrostatics, magnetostatics, currents, time-dependent electric and magnetic fields, radiation.

PH 353 04(3-3-0). Optics and Waves. F. Prerequisite: MATH 261; PH 142. Geometrical optics; wave optics; interference, diffraction, and polarization; quantum optics.

PH 361 03(3-0-0). Physical Thermodynamics. S. Prerequisite: MATH 261; PH 142. Laws of thermodynamics; thermodynamic potentials; applications such as fluids, phase transitions, electrical and magnetic systems, binary mixtures.

PH 384 Var[1-5]. Supervised College Teaching. Prerequisite: PH 121 or PH 141; written consent of department head. A maximum of 10 combined credits for all 384 and 484 courses are counted towards graduation requirements. Participation as a physics tutor.

PH 425 02(0-4-0). Advanced Physics Laboratory. S. Prerequisite: PH 315; PH 451. Advanced experiments in electricity and magnetism, statistical physics and quantum mechanics.

PH 451 03(3-0-0). Introductory Quantum Mechanics I. F. Prerequisite: MATH 340 or MATH 345; PH 314. Schroedinger's theory of wave mechanics, potential wells, harmonic oscillators, wave packets, operators, angular momentum.

PH 452 03(3-0-0). Introductory Quantum Mechanics II. S. Prerequisite: PH 451. Approximation techniques, perturbation theory, identical particles and spin, structure and spectra of atoms and molecules, hydrogen atom.

PH 462 03(3-0-0). Statistical Physics. F. Prerequisite: MATH 340; PH 314; PH 361. Maxwell-Boltzmann, Fermi-Dirac, and Bose-Einstein distribution functions; kinetic theory; applications to solids, metals, semiconductors, and gases.

PH 492 01(0-0-1). Seminar. S. Prerequisite: Written consent of instructor. Preparation and presentation of seminars on selected modern topics.

PH 495 Var[1-6]. Independent Study. Prerequisite: Written consent of instructor.

PH 498 Var[1-6]. Research. Prerequisite: Written consent of instructor.

PH 521 03(3-0-0). Introduction to Lasers. S. Prerequisite: CHEM 476 or PH 451; MATH 340; PH 353. Stimulated emission; laser resonators; theory of laser oscillation; specific laser systems; applications.

PH 522 01(0-2-0). Introductory Laser Laboratory. S. Prerequisite: PH 521 or concurrent registration. Experiments providing hands-on experiences with lasers.

PH 531 03(3-0-0). Introductory Solid State Physics. S. Prerequisite: PH 361; PH 451. Crystal structures and bonding, electronic levels and vibrations, dielectric, optical and magnetic properties, quasiparticles, superconductivity.

* Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCCsubcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
PH 541 03(3-0-0). Classical Physics. S. Prerequisite: PH 341; PH 351.
Linear and orbital motions, rotation, moment-of-inertia matrix, electrostatics, images, magnetostatics, induction, Maxwell’s equations.

PH 551 03(3-0-0). Modern Physics. F. Prerequisite: PH 452; PH 462 or concurrent registration.
Wave functions, energy levels, harmonic oscillator, transmission and reflection, perturbation theory, thermodynamic potentials, partition function.

PH 561 03(3-0-0). Elementary Particle Physics. S. Prerequisite: PH 451.
Particle interactions and detection techniques. Quark model, scattering models and standard model of electromagnet weak interactions, physics of colliders.

PH 571 03(3-0-0). Mathematical Methods for Physics I. F. Prerequisite: MATH 340.
Vector analysis, eigenvalues and eigenvectors, infinite series, method of Frobenius, complex variables, contour integration.

PH 572 03(3-0-0). Mathematical Methods for Physics II. S. Prerequisite: PH 571.

PH 621 03(3-0-0). Classical Mechanics. F. Prerequisite: PH 341; PH 571 or concurrent registration.
Central forces, scattering, noninertial reference frames, Coriolis force, Lagrange’s and Hamilton’s equations, small oscillations, continuum mechanics.

PH 631 03(3-0-0). Solid State Physics. S. Prerequisite: PH 531.
Electronic band structure and conduction phenomena; cohesive energy; lattice dynamics and thermal properties; metals; insulators; semiconductors.

PH 641 03(3-0-0). Electromagnetism I. F. Prerequisite: PH 351; PH 572.
Electrostatics in a vacuum and a medium, general solution of Laplace’s equation, Green’s functions, magnetostatics in a vacuum and a medium.

PH 642 03(3-0-0). Electromagnetism II. S. Prerequisite: PH 641.
Maxwell’s equations, electromagnetic waves, radiation by accelerated charges, special relativity, Lagrangian formulation of electromagnetism.

PH 651 03(3-0-0). Quantum Mechanics I. F. Prerequisite: PH 452; PH 571 or concurrent registration.
WKB theory, Heisenberg picture, 3D wells, hydrogen atom, time-independent perturbation theory, angular momentum and spin, Clebsch-Gordan coefficients.

PH 652 03(3-0-0). Quantum Mechanics II. S. Prerequisite: PH 651.
Wigner-Eckhart theorem, symmetries, density matrix, identical particles, interaction picture, time-dependent perturbation theory, scattering.

PH 671 03(3-0-0). Statistical Mechanics II. F. Prerequisite: PH 452; PH 462; PH 571 or concurrent registration.
Canonical and grand-canonical ensembles; Maxwell-Boltzmann, Bose-Einstein, and Fermi-Dirac statistics; density operator; Bose-Einstein condensation.

PH 672/ECE 672 03(3-0-0). Principles of Semiconductors. S. Prerequisite: ECE 471B or PH 531. Credit not allowed for both PH 672 and ECE 672.
Electronic properties of semiconductors: band structure, statistics, transport properties, photoelectronic properties, potential barriers, interfaces.

PH 692 01(0-0-1). Seminar.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Subcode</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>PHIL 100 03(3-0-0)</td>
<td>Appreciation of Philosophy</td>
<td>GT-AH3, AUCC 3B</td>
<td>F, S, SS. Prerequisite: None. Major issues in philosophy including theories of knowledge, metaphysics, ethics, and aesthetics.</td>
</tr>
<tr>
<td>PHIL 103 03(3-0-0)</td>
<td>Moral and Social Problems</td>
<td>GT-AH3, AUCC 3B</td>
<td>F, S, SS. Prerequisite: None. Contempory ethical issues in the United States, such as abortion, euthanasia, and genetic engineering. (NT-O)</td>
</tr>
<tr>
<td>PHIL 104/ANEQ 104 03(3-0-0)</td>
<td>Values, Culture, and Food Animal Agriculture</td>
<td>S. Prerequisite: Non-Animal Science majors with a freshman or sophomore standing. Credit not allowed for both PHIL 104 and ANEQ 104.</td>
<td>Evolution of the social values and cultural understandings shaping modern animal agriculture; current problems in animal agriculture.</td>
</tr>
<tr>
<td>PHIL 106 03(3-0-0)</td>
<td>Wisdom of the East-Oriental Philosophy</td>
<td>F, S. Prerequisite: None.</td>
<td>Major philosophical issues and world views of the Orient.</td>
</tr>
<tr>
<td>PHIL 110 03(3-0-0)</td>
<td>Logic and Critical Thinking</td>
<td>GT-AH3, AUCC 3B</td>
<td>F, S, SS. Prerequisite: None. Identify, analyze, and evaluate real arguments in everyday life, politics, the sciences, and the professions. (NT-O)</td>
</tr>
<tr>
<td>PHIL 112 03(3-0-0)</td>
<td>Reasoning and Problem Solving</td>
<td>F. Prerequisite: None. Creative and critical techniques in problem solving and decision making.</td>
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<tr>
<td>PHIL 120 03(3-0-0)</td>
<td>History and Philosophy of Scientific Thought</td>
<td>GT-AH3, AUCC 3B</td>
<td>F, S. Prerequisite: None. Historical development of western, scientific world view from ancient times to the 20th century.</td>
</tr>
<tr>
<td>PHIL 130 02(2-0-0)</td>
<td>Bioethics and Society</td>
<td>S. Prerequisite: None. Major issues in bioethics.</td>
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<tr>
<td>PHIL 170 03(3-0-0)</td>
<td>World Philosophies</td>
<td>GT-AH3, AUCC 3E</td>
<td>F, S. Prerequisite: None. Philosophies of North America, Mesoamerica, West Africa, South Asia, and East Asia.</td>
</tr>
<tr>
<td>PHIL 171 03(3-0-0)</td>
<td>Religions of the West</td>
<td>F, S. Prerequisite: None. Major religions of the Near East and West emphasizing their classical development; Judaism, Zoroastrianism, Christianity, Islam.</td>
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<tr>
<td>PHIL 172 03(3-0-0)</td>
<td>Religions of the East</td>
<td>F, S. Prerequisite: None. Major religions of India and the Far East emphasizing their classical development; Hinduism, Buddhism, Confucianism, Taoism.</td>
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<tr>
<td>PHIL 173 03(3-0-0)</td>
<td>Philosophy of Traditional Judaism</td>
<td>F. Prerequisite: None. Concepts and essentials of Jewish philosophy and Judaism, including overview of Jewish lifecycle, history, law, literature, ethics, and mysticism.</td>
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<tr>
<td>PHIL 205 03(3-0-0)</td>
<td>Introduction to Ethics</td>
<td>F, S. Prerequisite: Sophomore standing or higher. Problems and theories concerning values and standards, right action, and the good life.</td>
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<tr>
<td>PHIL 206 03(3-0-0)</td>
<td>Knowledge and Existence-An Introduction</td>
<td>F, S. Prerequisite: Sophomore standing or higher. Problems and theories concerning knowledge, being, nature of the world.</td>
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<tr>
<td>PHIL 210 03(3-0-0)</td>
<td>Introduction to Formal Logic</td>
<td>F. S. Prerequisite: Sophomore standing or higher. Elementary principles, techniques in propositional and predicate logic.</td>
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<tr>
<td>PHIL 240 03(3-0-0)</td>
<td>Philosophies of Peace and Nonviolence</td>
<td>F. Prerequisite: None. Classic and contemporary religious and philosophical work on peace and nonviolence.</td>
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<tr>
<td>PHIL 270 03(3-0-0)</td>
<td>Issues in the Study of Religion</td>
<td>F, S. Prerequisite: Sophomore standing or higher. Contemporary religion, its nature, types, forms of expression.</td>
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<tr>
<td>PHIL 295 Var[1-3]</td>
<td>Independent Study</td>
<td>F.</td>
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<tr>
<td>PHIL 297 Var[1-3]</td>
<td>Group Study</td>
<td>F.</td>
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<tr>
<td>PHIL 300 03(3-0-0)</td>
<td>Ancient Greek Philosophy</td>
<td>F, S, SS. Prerequisite: PHIL 205 or PHIL 206 or PHIL 210. Philosophy of ancient Greece emphasizing Plato and Aristotle.</td>
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<tr>
<td>PHIL 301 03(3-0-0)</td>
<td>17th and 18th Century European Philosophy</td>
<td>S. Prerequisite: PHIL 206 or PHIL 210 or PHIL 300. Philosophy from the scientific revolution through Kant.</td>
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<tr>
<td>PHIL 302 03(3-0-0)</td>
<td>19th-Century Philosophy</td>
<td>F. Prerequisite: PHIL 301. Major figures, movements, concepts in Europe and America from about 1800 to early 20th century.</td>
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<tr>
<td>PHIL 310 03(3-0-0)</td>
<td>Writing and Reasoning</td>
<td>F, S, SS. Prerequisite: CO 150; PHIL 110 or PHIL 210. Logic-based, analytic and critical writing and reading of complex argument and explanation types.</td>
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<tr>
<td>PHIL 312 03(3-0-0)</td>
<td>Philosophy of Law</td>
<td>F. Prerequisite: Sophomore standing. Philosophical concepts, theories, and problems concerning the law.</td>
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<tr>
<td>PHIL 315 03(3-0-0)</td>
<td>Philosophy of Language</td>
<td>S. Prerequisite: PHIL 205 or PHIL 206 or PHIL 210 or any upper-division course in philosophy. Basic concepts and principles in the theory of language.</td>
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<tr>
<td>PHIL 318 03(3-0-0)</td>
<td>Aesthetics-Visual Arts</td>
<td>F. S. Prerequisite: None. Central, traditional, and contemporary theories of the nature of visual arts.</td>
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<tr>
<td>PHIL 320 03(3-0-0)</td>
<td>Ethics of Sustainability</td>
<td>F. S. Prerequisite: None. Required field trips. Ethical and conceptual issues surrounding creation of sustainable societies and lifestyles.</td>
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<tr>
<td>PHIL 325 03(3-0-0)</td>
<td>Philosophy of Natural Science</td>
<td>F. Prerequisite: PHIL 210; one course in natural sciences. May be repeated for credit with consent of department head. Structure of theories; basic concepts and assumptions; methods of explanation and confirmation; emphasis varies between physical and life sciences.</td>
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PHIL 327 03(3-0-0). Philosophy of Behavioral Sciences. S. Prerequisite: PHIL 120 or PHIL 205 or PHIL 206 or PHIL 210 or any upper-division course in philosophy. May be repeated for credit with consent of department head.

Structure of theories; basic concepts; explanation and confirmation; reductionism and values; emphasis varies between psychology and social sciences.

PHIL 330/AGRI 330 03(3-0-0). Agricultural and Food System Ethics. S. Prerequisite: CO 150. Credit not allowed for both PHIL 330 and AGRI 330.

Basic concepts in ethics and their application to agriculture and the food system.

PHIL 335 03(3-0-0). Islam: Cosmology and Practice. F. Prerequisite: None.

Cosmological, spiritual, ritual, and practical aspects of Islam.

PHIL 345 03(3-0-0). Environmental Ethics. F. S. Prerequisite: Sophomore standing or higher.

Scientific, philosophical, and religious concepts of nature as they bear on human conduct; an ecological perspective.

PHIL 348 03(3-0-0). Philosophy of Literature and the Arts. S. Prerequisite: None.

Aesthetic and philosophical issues in literature and the arts.

PHIL 349 03(3-0-0). Philosophies of East Asia. S. Prerequisite: Sophomore standing or higher.

Philosophical traditions of East Asia, including Confucianism, Daoism, and Zen Buddhism.

PHIL 350 03(3-0-0). Social and Political Philosophy. F. S. Prerequisite: PHIL 205 or PHIL 206 or any upper-division course in philosophy.

Moral relationships between persons and institutions.

PHIL 351 03(3-0-0). Interpreting the New Testament. S. Prerequisite: None.


PHIL 353 03(3-0-0). Feminist Philosophies. S. Prerequisite: Sophomore standing or higher.

Conceptual, moral, and social analysis of women’s issues from a variety of philosophical feminist perspectives.

PHIL 355 03(3-0-0). Philosophy of Religion. F. Prerequisite: PHIL 106 or PHIL 171 or PHIL 172 or PHIL 270.

Philosophical analysis of nature of religion and structure of meaning in religious discourse.

PHIL 359 03(3-0-0). Philosophy of Human Nature. F. Prerequisite: PHIL 105 or PHIL 205 or PHIL 206 or any upper-division course in philosophy.

Philosophical study of theories of human nature.

PHIL 360 03(3-0-0). Topics in Asian Philosophy. S. Prerequisite: Sophomore standing or higher.

Examination of major philosophical topics from ethics, sociopolitical philosophy, metaphysics, aesthetics.

PHIL 366 03(3-0-0). Philosophy of Aging. S. Prerequisite: None.

Philosophical problems related to experience of growing old.

PHIL 370 03(3-0-0). Contemporary Western Religious Thought. F. Prerequisite: PHIL 106 or PHIL 171 or PHIL 172 or PHIL 270.

Contemporary interpretations of significant Western religious traditions.

PHIL 371 03(3-0-0). Contemporary Eastern Religious Thought. S. Prerequisite: None.

Transformation of Indian and Chinese religious thought in the modern period.

PHIL 372 03(3-0-0). Meaning and Truth in Religion. F. Prerequisite: PHIL 106 or PHIL 171 or PHIL 172 or PHIL 270.


PHIL 375 03(3-0-0). Science and Religion. S. Prerequisite: PHIL 106 or PHIL 171 or PHIL 172 or PHIL 270.

Encounter of religious belief with Western science, influences on each other, present relations.

PHIL 379 03(3-0-0). Mysticism East and West. F. Prerequisite: PHIL 106 or PHIL 171 or PHIL 172 or PHIL 270.

Varieties of mystical experience in selected Eastern and Western representatives.

PHIL 384 Var[1-5]. Supervised College Teaching. F. S. Prerequisite: None. A maximum of 10 combined credits for all 384 and 484 courses are counted towards graduation requirements.

Teaching basic philosophy courses.

PHIL 407 03(3-0-0). Phenomenology and Existentialism. F. Prerequisite: PHIL 205 or PHIL 206 or PHIL 300 or PHIL 301.

Methods, epistemology, metaphysics, axiology, ethics of 20th-century phenomenologists and existentialists.

PHIL 409 03(3-0-0). 20th-Century Philosophy. S. Prerequisite: PHIL 301.

Major figures, trends, and concepts in 20th-century philosophy.

PHIL 410 03(3-0-0). Formal Logic. F. S. Prerequisite: PHIL 210 or CS 270.

Quantification theory; axiomatic systems; rigorous axiomatization of some logical or mathematical theory.

PHIL 415 03(3-0-0). Logic and Scientific Method. F. S. Prerequisite: None.

Approaches to analysis, assessment of scientific inference, problems of induction; applications to natural, behavioral, social sciences.

PHIL 425 03(3-0-0). Epistemology. S. Prerequisite: PHIL 210 or PHIL 300 or PHIL 301.

Concepts, problems, and theories of knowledge.

PHIL 435 03(3-0-0). Metaphysics. F. Prerequisite: PHIL 210 or PHIL 300 or PHIL 301.

Philosophical problems concerning nature, structure, and basic constituents of reality.

PHIL 438 03(3-0-0). Philosophy of Mind. S. Prerequisite: PHIL 300 or PHIL 301 or PHIL 302 or PHIL 352 or PHIL 357 or PHIL 359.

Nature and status of mind, mental states, mental activity; the mind-body problem, mind and human sciences, mind and self, nature of human action.

PHIL 447 03(3-0-0). Ethical Theory. F. Prerequisite: PHIL 205 or PHIL 300 or PHIL 301.

Fundamental problems and options in ethical theory.

PHIL 455 03(3-0-0). Islamic Philosophy. S. Prerequisite: PHIL 206; PHIL 210.

Development of philosophical thought in early, middle, and late Muslim civilization.

PHIL 460 03(3-0-0). Seminar in Great Philosophers. F. Prerequisite: PHIL 300 or PHIL 301 or PHIL 302. Maximum of 9 credits allowed in course.

Works of one major figure in the history of philosophy.

PHIL 461 03(3-0-0). Seminar in Philosophical Issues and Problems. S. Prerequisite: PHIL 300 or PHIL 301 or PHIL 302.

Thorough examination of a major philosophical problem or issue.
PHIL 462 03(0-0-3). Capstone Seminar. F, S. Prerequisite: Senior standing; any two of the following courses: PHIL 300, PHIL 301, PHIL 302, PHIL 409.
In-depth, integrative study of major topics, texts, and problems in both philosophy and religion.

PHIL 463 03(0-0-3). Seminar in Religious Studies. F, S, SS.

PHIL 479 03(3-0-0). Topics in Comparative Religions. F. Prerequisite: PHIL 171 or PHIL 172 or PHIL 270; 300-level religious studies course.
Comparative study of topics in world religions and philosophy or religion.

PHIL 495 Var[1-9]. Independent Study.

PHIL 497 Var[1-9]. Group Study.

PHIL 499 03(0-0-3). Thesis. Prerequisite: Written consent of department head.

PHIL 500 03(0-0-3). Seminar in Major Philosophical Texts. F. Prerequisite: Admitted graduate student.
Intensive study of one or two major works in the history of philosophy.

PHIL 501 03(0-0-3). Seminar: Topics in History of Philosophy. S. Prerequisite: None.
Selected figures and periods from the history of western philosophy, from ancient to modern. Topics change from semester to semester.

PHIL 525 03(0-0-3). Seminar in Epistemology. F. Prerequisite: PHIL 425.
Analysis of contemporary theories of knowledge.

PHIL 527 03(0-0-3). Seminar in Philosophy of Science. S. Prerequisite: PHIL 325 or PHIL 327 or PHIL 415.
Systematic survey of major 20th-century philosophies of science.

°PHIL 535 03(0-0-3). Seminar in Metaphysics. S. Prerequisite: PHIL 500.
Contemporary topics philosophical metaphysics.

°PHIL 545 03(3-0-0). Concept of Natural Value. S. Prerequisite: PHIL 345.
Philosophical analysis of nature as a value carrier. Types of value associated with nature, their interrelations.

PHIL 547 03(0-0-3). Seminar in Meta-Ethics. S. Prerequisite: PHIL 447.
Systematic and historical overview of contemporary theories of meta-ethics.

PHIL 550/IE 550 03(0-0-3). Ethics and International Development. F. Prerequisite: Written consent of instructor. Credit not allowed for both PHIL 550 and IE 550.
Ethical reflection applied to development goals, strategies of Third World countries; relations between developed and developing countries.

°PHIL 555 03(0-0-3). Seminar in Philosophical Models of Nature. F. Prerequisite: Written consent of instructor.
Comparative inquiry into the “nature” of nature as viewed by philosophers of the past and present.

°PHIL 564 03(0-0-3). Seminar in Animal Rights. S. Prerequisite: Written consent of instructor.
Contemporary issues concerning nature and moral status of nonhuman animals.

°PHIL 565 03(0-0-3). Seminar in Environmental Philosophy. F. Prerequisite: Written consent of instructor.
Aesthetic appreciation of nature, duties concerning fauna, flora, endangered species, ecosystems.

° Alternate year offering (odd); ° Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
## POLITICAL SCIENCE COURSES

### Department of Political Science

**College of Liberal Arts**

**POLS 101 03(3-0-0). American Government and Politics.** (GT-SS1, AUCC 3C). F, S, SS. Prerequisite: None.

- Principles, structures, and processes of American national government. (NT-O)

**POLS 103 03(3-0-0). State and Local Government and Politics.** (GT-SS1, AUCC 3C). F, S. Prerequisite: None.

- Principles, organization, and operation of American state and local government. (NT-O)

**POLS 131 03(3-0-0). Current World Problems.** (GT-SS1, AUCC 3E). F, S. Prerequisite: None.

- Background and nature of international political events.

**POLS 232 03(3-0-0). International Relations.** (GT-SS1, AUCC 3E). F, S. Prerequisite: None.

- Basic concepts and approaches in international relations.

**POLS 241 03(3-0-0). Comparative Government and Politics.** (GT-SS1, AUCC 3E). S. Prerequisite: None.

- Major foreign political systems stressing cross-national comparison of political forces, parties, ideologies, and institutions. (NT-O)

**POLS 302 03(3-0-0). U.S. Political Parties and Elections.** F. Prerequisite: POLS 101.

- Foundational, institutional, and behavioral features of American political parties and elections. (NT-O)

**POLS 303 03(3-0-0). Politics of Organized Interests.** F. Prerequisite: POLS 101.

- Role of interests in varied forms: social movements, institutions, associations, and membership groups in American politics.

**POLS 304 03(3-0-0). Legislative Politics.** F, S. Prerequisite: POLS 101.

- Structure, organization, behavior, processes, and policy implications of U.S. legislatures.

**POLS 305 03(3-0-0). Judicial Politics.** F. Prerequisite: POLS 101.

- Allocation of powers among judicial structures in American federal system.

**POLS 306 03(3-0-0). Executive Politics.** F. Prerequisite: POLS 101.

- Structure, organization, behavior, processes, and policy implications of U.S. executive leadership.

**POLS 309 03(3-0-0). Urban Politics.** F, S. Prerequisite: POLS 101 or POLS 103.

- Governmental structures and political processes in urban government.

**POLS 320 03(3-0-0). Empirical Political Analysis.** F, S. Prerequisite: None.

- Methods of empirical political inquiry.

**POLS 321 01(0-2-0). Empirical Political Analysis Laboratory.** F, S. Prerequisite: Concurrent registration in POLS 320.

- Laboratory applications of empirical research methods.

**POLS 331 03(3-0-0). Politics and Society Along Mexican Border.** F, S. Prerequisite: None.

- Analysis of U.S.-Mexican relations and domestic politics as these affect regional characteristics and development of U.S.-Mexican border region.

**POLS 332/ECON 332 03(3-0-0). International Political Economy.** F, S. Prerequisite: AREC 202 or ECON 202; POLS 232. Credit not allowed for both POLS 332 and ECON 332.

- Theories on relations between international politics and economics. Policy implications of different theories and case studies.

**POLS 341 03(3-0-0). Western European Government and Politics.** F. Prerequisite: POLS 241.

- Politics in Western European countries such as Britain, France, and Germany, and countries influenced by European traditions.

**POLS 345 03(3-0-0). Russian, Central, and East European Politics.** F. Prerequisite: POLS 241.

- Political structures and processes in Russia, Central and East Europe, and selected post-Communist countries.

**POLS 351 03(3-0-0). Public Administration.** F, S, SS. Prerequisite: POLS 101.

- Government organization and management; decision processes; political and intergovernmental relations in administration.

**POLS 361 03(3-0-0). U.S. Environmental Politics and Policy.** F, S, SS. Prerequisite: POLS 101.

- Analysis of U.S. space politics, space law, and space policy making.


- Discussion and analysis of energy use and its impact on the economy and environment with an emphasis on future policy. (NT-O)

**POLS 371 03(3-0-0). U.S. Space Policy.** F. Prerequisite: None.

- Analysis of U.S. space politics, space law, and space policy making. (NT-O)

**POLS 405 03(3-0-0). Race and Ethnicity in U.S. Politics.** S. Prerequisite: POLS 101.

- Relationships among American racial/ethnic groups, political attitudes, behavior, and ethnicity roles in elections; implications for public policy.

**POLS 409 03(3-0-0). Urban and Regional Politics.** F, S. Prerequisite: POLS 101 or POLS 103.

- Governance processes and public policies in metropolitan regions.

**POLS 410 03(3-0-0). American Constitutional Law.** F. Prerequisite: POLS 101.

- Allocation of powers among structures in American federal system.

**POLS 413 03(3-0-0). U.S. Civil Rights and Liberties S, SS. Prerequisite: POLS 101.

- U.S. Constitutional provisions and cases pertaining to the rights and liberties of individuals.

**POLS 420 03(3-0-0). History of Political Thought.** F, S. Prerequisite: None.

- Issues and texts related to tradition of political thought from the ancient through the modern period. (NT-O)

**POLS 421 03(3-0-0). Contemporary Political Theories.** F. Prerequisite: None.

- Major political theories and ideologies of contemporary times.

**POLS 422 03(3-0-0). Democratic Theory.** F, S, SS. Prerequisite: POLS 101; completion of AUCC category 2.

- Competing approaches to the theory and practice of democracy, both locally and globally.

*Alternate year offering (odd); * Alternate year offering (even); + Field trips; S Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
POLS 423 03(3-0-0). American Political Theories. S. Prerequisite: POLS 101.
Major American theories and ideologies: their development and present uses.

POLS 431 03(3-0-0). International Law. F, S. Prerequisite: POLS 232.
Rules and obligations for conduct of relations among states and other international entities.

POLS 433 03(3-0-0). International Organization. F, S. Prerequisite: POLS 232.
History, development, structure, process, and activity of selected public international organizations.

POLS 435 03(3-0-0). United States Foreign Policy. F, S, SS. Prerequisite: POLS 232.
Institutions, responsibilities, processes, and issues in formulation and execution of U.S. foreign policy.

POLS 436 03(3-0-0). Comparative Foreign Policy. S. Prerequisite: POLS 232; POLS 241.
Effect of varying international and domestic contexts on foreign policy choices and outcomes across different countries, cultures, issues, and time.

POLS 437 03(3-0-0). International Security. F, S. Prerequisite: None.
Examines the conditions that make for war and peace in international relations. (NT-O)

POLS 442 03(3-0-0). Environmental Politics in Developing World. F, S, SS. Prerequisite: POLS 241.
Examines environmental politics in developing countries and evaluates climate change, natural resource governance and environmental justice.

POLS 443 03(3-0-0). Comparative Social Movements. F, S. Prerequisite: POLS 241.
Reviews major works dealing with conceptual and theoretical foundations of social movements and examines a number of cases across regions.

POLS 444 03(3-0-0). Comparative African Politics. S, SS. Prerequisite: POLS 241.
African political systems focusing on precolonial, colonial influences; rise of nationalism; approaches to new political order; influences of development.

POLS 445 03(3-0-0). Comparative Asian Politics. F, SS. Prerequisite: POLS 241.
East and South Asian political systems emphasizing issues of development, political culture, and institutional change.

POLS 446 03(3-0-0). Politics of South America. F, S. Prerequisite: POLS 241.
South American political actors and institutions with emphasis on themes of development, democracy, revolution, and international affairs.

POLS 447 03(3-0-0). Politics in Mexico, Central America, Caribbean. F, S. Prerequisite: POLS 241.
Mexican politics with comparison to one or more Central American and Caribbean countries.

POLS 448 03(3-0-0). Comparative Racial/Ethnic Politics. F, S. Prerequisite: POLS 241.
Comparative examination of politics of race and ethnicity and role it plays in formation of nation-states.

POLS 449 03(3-0-0). Middle East Politics. F, S. Prerequisite: POLS 241.
Political issues of the Middle East, including the Palestinian-Israeli conflict, Islamism, and democratization.

POLS 451 03(3-0-0). Public Policy Design and Governance. S. Prerequisite: POLS 101 or POLS 103; junior standing.
Examination of governance institutions outside the scope of traditional bureaucratic organizations and accountability.

POLS 459 03(3-0-0). Program Evaluation for Public Administrators. F, S, SS. Prerequisite: POLS 101; junior or senior standing.
An overview of research methods and statistical methods for public administrators. (NT-O)

POLS 460 03(3-0-0). Public Policy Process. F, S. Prerequisite: POLS 101; junior standing.
Explanations of U.S. policy formation, implementation, and impact. (NT-O)

POLS 463 03(3-0-0). Urban Policy and Management. F, S, SS. Prerequisite: POLS 101 or POLS 103; completion of AUCC category 2.
Policy choices and management issues associated with urban government.

POLS 462 03(3-0-0). Globalization, Sustainability, and Justice. F, S, SS. Prerequisite: POLS 232 or POLS 241.
Public and private policies to promote sustainability and social justice in a globalizing world.

POLS 465 03(3-0-0). Public Policy Analysis. F, S, SS. Prerequisite: POLS 101; completion of AUCC category2; junior standing.
Methods and tools used in the practice of policy analysis and evaluation of current public policy; emphasis on applied analysis. (NT-O)

POLS 486A-B. Practicum.
+A Legislative politics 06(0-8-2). (S) B Government Var[1-6].

POLS 492 03(0-0-3). Capstone Seminar. Prerequisite: Upper-division course in at least four subfields of political science.

POLS 495 Var. Independent Study.

POLS 500 03(3-0-0). Governmental Politics in the U.S. F, S. Prerequisite: Three upper-division credits in American politics with a B or better.
Selected primary source materials on performance of government officials and institutions at federal, state, and local levels.

POLS 501 03(3-0-0). Citizen Politics in the U.S. F, S. Prerequisite: Three upper-division credits in American politics with a B or better.
Selected primary source materials on behavior of individuals and groups in American politics.

POLS 509 03(3-0-0). Gender and the Law. F, S. Prerequisite: POLS 410 or POLS 443.
Relationship between gender and the law and the changing nature of that relationship over time.

POLS 520 03(3-0-0). Theories of Political Action. F, S. Prerequisite: POLS 420 or POLS 421.
Intensive review of primary material on Western political thought.

POLS 530 03(3-0-0). International Relations. F, S. Prerequisite: Nine credits in international relations or related studies.
Theory and methodology utilized in different approaches to international relations.

POLS 531 03(3-0-0). Policy Making, Diplomacy, and World Politics. F, S. Prerequisite: Three upper-division credits in international relations with a B or better.
Theories of policy making and bargaining in international politics as applied to different countries, organizations, and historical periods.

POLS 532 03(3-0-0). Governance of the World Political Economy. F, S. Prerequisite: 9 upper division credits in international relations with a B or better.
Theoretical and practical debates on the organization and governance of the world political economy.

\( ^a\)Alternate year offering (odd); \(^*\) Alternate year offering (even); \(^{+}\) Field trips; \(^{S}\) Special course fee; \(^{NT}\) Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); \(\text{GT-subcode} = \text{State Guarantee Transfer course and AUCC-subcode} = \text{All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)}\)
POLS 540 03(3-0-0). Comparative Politics. F, S. Prerequisite: Three upper-division credits in comparative politics with a B or better.

Theories, methods, and approaches to study of comparative politics.

POLS 541 03(3-0-0). Political Economy of Change and Development. F, S. Prerequisite: Three upper-division credits in comparative politics with a B or better.

Responses of the state and its institutions to political, economic, and social change.

POLS 542 03(3-0-0). Democracy and Democratization. F, S. Prerequisite: None.

Theoretical foundations of democracy and democratization across world regions.

POLS 544/ETST 544 03(3-0-0). National Identities and Nation Building. F. Prerequisite: None. Credit not allowed for both POLS 544 and ETST 544.

How statist conceptions of race and ethnicity have been mobilized in nation-building projects.

POLS 550 03(3-0-0). Advanced Public Administration. F, S. Prerequisite: POLS 351; written consent of instructor.

Overview of study of public administration; recent developments in theory and practice.

POLS 552A-C 03(3-0-0). Topics in Public Administration. F, S. Prerequisite: POLS 351; GPA of 3.000 or better.


POLS 620 03(3-0-0). Approaches to the Study of Politics. F. Prerequisite: Fifteen credits in political science.

"POLS 621 03(3-0-0). Qualitative Methods in Political Science. S. Prerequisite: POLS 620 or concurrent registration or SOC 311. Credit not allowed for both POLS 621 and SOC 610.

Research design, data gathering and organization, ethical issues, and computer applications in qualitative political research.

POLS 624 03(3-0-0). Scope and Methods of Political Science. F, S. Prerequisite: 15 credits of upper division (300-level and above) coursework in Political Science.

Graduate survey of the scope of the Political Science discipline and the range of research designs and methods in the discipline.

POLS 625 03(3-0-0). Quantitative Methods of Political Research. S. Prerequisite: POLS 320.

Quantitative approaches and methods for study of political life.

POLS 626 01(0-2-0). Political Research Laboratory. S. Prerequisite: POLS 321; concurrent registration in POLS 625.

POLS 652 03(0-0-3). Public Organization Theory. F. Prerequisite: POLS 351.

Theories of behavior of individuals and organizations in government bureaucracies.

POLS 660 03(3-0-0). Theories of the Policy Process. F, S. Prerequisite: POLS 351 or POLS 460.

Recent developments in policy analysis.

"POLS 665 03(0-0-3). Public Policy Analysis. S. Prerequisite: POLS 625.

The practice of policy analysis and the tools used to conduct an analysis including: forecasting CBA, CEA, and policy design.

POLS 670 03(3-0-0). Politics of Environment and Sustainability. F. Prerequisite: Written consent of instructor.

Domestic, international, and comparative dimensions of environment and natural resource politics and policy.

Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
PSYCHOLOGY COURSES
Department of Psychology
College of Natural Sciences

PSY 100 03(3-0-0). General Psychology. (GT-SS3, AUCC 3C). F, S, SS. Prerequisite: None.
Principles of psychology emphasizing empirical approaches; theories and research on learning, individual differences, perception, social behavior. (NT-O/T)

PSY 121 01(1-0-0). Health and the Mind. F, S. Prerequisite: None.
Maintenance of positive mental health.

PSY 175/HDFS 175 03. Developmental Psychology Across the Life Span. F, S, SS. Prerequisite: None. Credit not allowed for both PSY 175 and HDFS 175. Offered as telecourse only.
Theory and research on physical, cognitive, and psychosocial human development across the life span. (NT-T)

PSY 192 01(0-0-1). Psychology First-Year Seminar. F, S. Prerequisite: None.
Special topics in psychology.

PSY 210 03(3-0-0). Psychology of the Individual in Context. F, S, SS. Prerequisite: PSY 100.
Psychological explanations of cultural, social, and individual differences in behavior. (NT-O)

PSY 228 03(3-0-0). Psychology of Human Sexuality. F, S, SS. Prerequisite: None.
Physiology, psychology of human sexuality; cross cultural issues, development, social perspectives, values, sexual dysfunction. (NT-C/O)

PSY 250 04(4-0-0). Research Methods in Psychology. F, S, SS. Prerequisite: PSY 100.
Design, analysis, and reporting of psychological research. (NT-O)

PSY 252 03(3-0-0). Mind, Brain, and Behavior. F, S, SS. Prerequisite: PSY 100.
Psychological, physiological, and evolutionary explanations of perception, cognition, and behavior. (NT-O)

PSY 260 03(3-0-0). Child Psychology. F, S, SS. Prerequisite: PSY 100.
Description and explanation of development of human behavior emphasizing theory and research concerned with infant and child.

PSY 292 A-D. Seminar. F, S, SS. Prerequisite: None.
A) Industrial/Organizational 01(0-0-1). B) Mind, Brain & Behavior 01 (0-0-1). C) Controversial Issues in Psychology 01(0-0-1).
D) Special Topics in Psychology Var[1-3].

PSY 295 Var[1-3]. Independent Study. Maximum of 12 credits allowed for psychology majors toward graduation for any combination of PSY 295, PSY 296, PSY 484, PSY 486, PSY 488, PSY 495A-F, PSY 496A-F, PSY 498A-F, PSY 499A-F; enrollment limited to one per student per semester.
Individual investigation of a special topic in psychology under direction of faculty.

PSY 296 Var[1-3]. Group Study. Maximum of 12 credits allowed for psychology majors toward graduation for any combination of PSY 295, PSY 296, PSY 484, PSY 486, PSY 488, PSY 495A-F, PSY 496A-F, PSY 498A-F, PSY 499A-F; enrollment limited to one per student per semester.

PSY 299 A-D. Seminar. F, S, SS. Prerequisite: None.
A) Industrial/Organizational 01(0-0-1). B) Mind, Brain & Behavior 01 (0-0-1). C) Controversial Issues in Psychology 01(0-0-1).
D) Special Topics in Psychology Var[1-3].

PSY 305 03(3-0-0). Psychology of Religion. F, S, SS. Prerequisite: PSY 100.
Collective investigation of a special topic in psychology under direction of faculty.

PSY 310 03(3-0-0). Basic Counseling Skills. S. Prerequisite PSY 100.
Psychologically-based interpersonal communication skills; rapport thinking, gathering information and bringing about change in others.

PSY 311A-B 02(0-4-0). Basic Counseling Skills Laboratory. Prerequisite: PSY 100; PSY 310 or concurrent registration. Credit not allowed for both PSY 311A and PSY 311B.
A) CACI. Application of psychologically-based interpersonal skills in drug addiction treatment, for students seeking CACI certification.
B) Non-CACI. Application of psychologically-based interpersonal communication skills.

PSY 315 03(3-0-0). Social Psychology. F, S, SS. Prerequisite: PSY 100.
Social psychological theory and research findings emphasizing research methodology; applications to contemporary social problems. (NT-O)

PSY 316 03(3-0-0). Environmental Psychology. F, S, SS. Prerequisite: PSY 100.
Social psychological theory and research on effects of behavior on the environment; environmental influences on behavior. (NT-C)

PSY 317 02(0-4-0). Social Psychology Laboratory. F, S, SS. Prerequisite: PSY 250; PSY 315 or concurrent registration.
Review of research techniques in social psychology. Computer simulations with applications to contemporary social problems. (NT-O)

PSY 320 03(3-0-0). Abnormal Psychology. F, S, SS. Prerequisite: PSY 100.
Definition and description of behavior pathology; theory and research on factors in etiology and treatment of behavior disorders. (NT-T)

PSY 325 03(3-0-0). Psychology of Personality. F, S, SS. Prerequisite: PSY 100.
Theory and research related to personality as a psychological concept; analytic, phenomenological, and behavioralist views. (NT-O)

PSY 327 03(2-0-1). Psychology of Women. F, S, SS. Prerequisite: PSY 100.
Contemporary theory and research focusing on emotional, cognitive, biosocial, and interpersonal contributions to female identity and sex role.

*PSY 330 03(3-0-0). Clinical and Counseling Psychology. S. Prerequisite: PSY 100.
Specialty areas, conceptualization of clients, assessment, intervention techniques for behavior change, research methods, ethical issues.

PSY 335 03(3-0-0). Forensic Psychology. F, S, SS. Prerequisite: PSY 100; junior or senior standing.
The psychology of crime and criminal behavior, including theory on deviance, the criminal mind, and the root causes of violence in society.

PSY 340 03(3-0-0). Organizational Psychology. F. Prerequisite: PSY 250; concurrent registration in PSY 341; STAT 301 or STAT 311.
Theories and research on interpersonal relations, work group processes, decision making, power, and change strategies within organizations. (NT-O)

* Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
PSY 341 01(0-2-0). Organizational Psychology Laboratory. F. Prerequisite: Concurrent registration in PSY 340.
Application of organizational psychology through simulations and field involvements. (NT-O)

PSY 350 03(3-0-0). Applied Research Methods in Psychology I. F. Prerequisite: PSY 250, STAT 311; enrollment in University Honors Program. Application of research methods concepts to design and conduct experiments.

PSY 352 03(3-0-0). Learning and Memory. F, S, SS. Prerequisite: PSY 252. Research, theory, and applications regarding conditioning, learning, and retention in animals and humans.

PSY 354 03(3-0-0). Human-Computer Interaction. F, S. Prerequisite: PSY 100. Theoretical and applied areas of psychology and computer science in the area of human-computer interaction.

PSY 360 03(3-0-0). Psychology of Drug Addiction Treatment. S, SS. Prerequisite: PSY 100; PSY 320. Psychological theory and method for treating substance use addictions. (NT-O)

PSY 362 03(3-0-0). Professional Issues in Addiction Treatment. F, SS. Prerequisite: PSY 360 or concurrent registration. Diversity, ethno-cultural, and ethical issues in drug addiction treatment.

PSY 364 03(0-0-3). Infectious Diseases and Substance Use. F, S, SS. Prerequisite: PSY 100. Infectious disease transmission/progression related to substance use, risk assessment and treatment of substance users in alcohol and drug treatment. (NT-O)

PSY 370 03(3-0-0). Psychological Measurement and Testing. F, S, SS. Prerequisite: PSY 100; concurrent registration in PSY 371; STAT 301 or STAT 311. Measurement theory including scale properties, reliability, and validity; construction and evaluation of psychological tests. (NT-O)

PSY 371 01(0-2-0). Psychological Measurement and Testing Laboratory. F, S. Prerequisite: Concurrent registration in PSY 370. Exercises and problems in test administration, norming, reliability, validity, and scale construction. (NT-O)

¹PSY 384 Var[1-3]. Supervised College Teaching. Prerequisite: PSY 100; written consent of department head. A maximum of 10 combined credits for all 384 and 484 courses are counted towards graduation requirements. Maximum of 12 credits allowed for psychology majors toward graduation for any combination of PSY 295, PSY 296, PSY 384, PSY 484, PSY 486, PSY 488, PSY 495A-F, PSY 496A-F, PSY 499A-F; enrollment limited to one per student per semester. Supervised teaching, training, and discussion leadership in undergraduate courses.

²PSY 392 02(0-0-2). Honors Seminar: Current Topics in Psychology. F. Prerequisite: PSY 100; PSY 250; enrollment in University Honors Program. Research areas in psychology; reading and discussing current journal articles.

PSY 401 03(3-0-0). History and Systems of Psychology. F, S. Prerequisite: PSY 250; junior or senior standing. Philosophical and scientific underpinnings of psychology; major historical developments in psychology; schools of psychological thought. (NT-O)

PSY 410 03(3-0-0). Psychobiology of Addictions. F. Prerequisite: PSY 250, PSY 252. Biological basis of the psychology of addictions.

PSY 437 03(3-0-0). Psychology of Gender. F. Prerequisite: PSY 210. Psychology of gender in cultural context.

PSY 440 03(3-0-0). Industrial Psychology. F, S, SS. Prerequisite: PSY 250; concurrent registration in PSY 441; STAT 301 or STAT 311. Problems and procedures in selection and classification of personnel; work motivation; job satisfaction; leadership. (NT-O)

PSY 441 01(0-2-0). Industrial Psychology Laboratory. F. Prerequisite: Concurrent registration in PSY 440. Laboratory and field experiences in job analysis, selection strategies, performance appraisal, and criterion development.

PSY 450 04(3-2-0). Applied Research Methods in Psychology II. S. Prerequisite: PSY 350; enrollment in University Honors Program. Interpretation and reporting of psychological research findings.

PSY 452 03(3-0-0). Cognitive Psychology. F, S, SS. Prerequisite: PSY 252. Human thinking processes as related to perception, attention, memory, knowledge representation, reasoning, decision making, and problem solving. (NT-C/O)

PSY 453 02(0-4-0). Cognitive Psychology Laboratory. F, S, SS. Prerequisite: PSY 250; PSY 452 or concurrent registration. Exercises in laboratory research in perceptual processes, attention, memory, language, problem solving, and decision making. (NT-O)

PSY 454 03(3-0-0). Biological Psychology. F, S, SS. Prerequisite: PSY 252. Research and theory on the biological basis of behavior.

PSY 455 04(3-2-0). Biological Psychology Laboratory. F, S, SS. Prerequisite: PSY 250; PSY 454 or concurrent registration. Laboratory exercises in biological psychology.

PSY 456 03(3-0-0). Sensation and Perception. F, S, SS. Prerequisite: PSY 252. Review of research on physiological substrates of sensation; methods of scaling sensory experience; role of perception in behavioral adaptation.

PSY 457 02(0-4-0). Sensation and Perception Laboratory. F, S, SS. Prerequisite: PSY 250; PSY 456 or concurrent registration. Review of research on physiological substrates of sensation; methods of scaling sensory experience; role of perception in behavioral adaptation.


PSY 459 02(0-4-0). Cognitive Neuroscience Laboratory. F, S, SS. Prerequisite: PSY 250; PSY 458 or concurrent registration. Laboratory exercises in cognitive neuroscience.

PSY 460 03(3-0-0). Child Exceptionality and Psychopathology. F, S, SS. Prerequisite: PSY 100. Definition and description of child exceptionality and psychopathology; theory and research in etiology, educational implications, and treatment. (NT-O)

PSY 465 03(3-0-0). Adolescent Psychology. F, SS. Prerequisite: PSY 100. Contemporary theory and research on adolescence including physiological and psychological changes, social influences.

* Alternate year offering (odd); ° Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
PSY 484 Var[1-3]. Supervised College Teaching. F, S, SS. Prerequisite: PSY 100; written consent of department chair. A maximum of 10 combined credits for all 384 and 484 are counted towards graduation requirements. Maximum of 12 credits allowed for psychology majors toward graduation for any combination of PSY 295, PSY 296, PSY 384, PSY 484, PSY 486, PSY 488, PSY 495A-F, PSY 496A-F, PSY 498A-F, PSY 499A-F.

Advanced supervised teaching, training and discussion leadership in undergraduate courses.

PSY 486 Var[1-3]. Practicum. Maximum of 12 credits allowed for psychology majors toward graduation for any combination of PSY 295, PSY 296, PSY 384, PSY 484, PSY 486, PSY 488, PSY 495A-F, PSY 496A-F, PSY 498A-F, PSY 499A-F; enrollment limited to one per student per semester.

Supervised work experience in approved psychological setting with periodic consultation of faculty.

PSY 488 Var[1-3]. Field Placement. Maximum of 12 credits allowed for psychology majors toward graduation for any combination of PSY 295, PSY 296, PSY 384, PSY 484, PSY 486, PSY 488, PSY 495A-F, PSY 496A-F, PSY 498A-F, PSY 499A-F; enrollment limited to one per student per semester.

Supervised affiliation with and/or service work in approved psychological setting. (S)

PSY 492A-F Var[1-3]. Seminar. F, S, SS. Prerequisite: None.


PSY 495A-F Var[1-3]. Independent Study. F, S, SS. Maximum of 12 credits allowed for psychology majors toward graduation for any combination of PSY 295, PSY 296, PSY 384, PSY 484, PSY 486, PSY 488, PSY 495A-F, PSY 496A-F, PSY 498A-F, PSY 499A-F; enrollment limited to one per student per semester.

Individual investigation of a special topic in psychology under direction of faculty.


PSY 496A-F Var[1-3]. Group Study. F, S, SS. Maximum of 12 credits allowed for psychology majors toward graduation for any combination of PSY 295, PSY 296, PSY 384, PSY 484, PSY 486, PSY 488, PSY 495A-F, PSY 496A-F, PSY 498A-F, PSY 499A-F; enrollment limited to one per student per semester.

Collective investigation of a special topic in psychology under direction of faculty.


PSY 498A-F Var[1-3]. Research. F, S, SS. Maximum of 12 credits allowed for psychology majors toward graduation for any combination of PSY 295, PSY 296, PSY 384, PSY 484, PSY 486, PSY 488, PSY 495A-F, PSY 496A-F, PSY 498A-F, PSY 499A-F; enrollment limited to one per student per semester.

Independent research project culminating in formal research paper.


PSY 499A-F Var[1-6]. Thesis. F, S, SS. Maximum of 12 credits allowed for psychology majors toward graduation for any combination of PSY 295, PSY 296, PSY 384, PSY 484, PSY 486, PSY 495A-F, PSY 496A-F, PSY 498A-F, PSY 499A-F; enrollment limited to one per student per semester.

Independent research project culminating in a thesis presented to a faculty committee.


PSY 515 03(0-0-3). Women's Health. F. Prerequisite: None.

Current issues in women’s health.

PSY 517*/IE 517 03(0-0-3). Perspectives in Global Health. S. Prerequisite: None. Credit not allowed for both PSY 517 and IE 517. Science, skills, and beliefs directed at the maintenance and improvement of health for all people.

PSY 595A-F Var[1-3]. Independent Study. F, S, SS.

Individual investigation of a special topic in psychology under direction of faculty.


PSY 596A-F Var[1-3]. Group Study. F, S, SS.

Collective investigation of a special topic in psychology under direction of faculty.


PSY 600A-M 03(3-0-0). Advanced Psychology. F, S.


*PSY 601 01(0-2-0). Measurement Laboratory. S. Prerequisite: PSY 600K or concurrent registration.

Laboratory experience using measurement concepts and procedures.

PSY 605 03(0-0-3). Applied Measurement Theory. S. Prerequisite: Admission to the Plan C graduate program in Applied Industrial/Organizational Psychology. Credit not allowed for both PSY 605 and PSY 600K. PSY 605 offered only through Division of Continued Education. (NT-O)

PSY 610 03(3-0-0). Counseling and Clinical Pre-practicum I. F. Prerequisite: Written consent of instructor.

Basic assessment and intervention skills; accurate observation, conceptualization, and response.

PSY 611 03(3-0-0). Counseling and Clinical Pre-practicum II. S. Prerequisite: PSY 610.

Counseling and clinical techniques; assessment and intervention strategies; special applications.

PSY 643 03(3-0-0). Industrial/Organizational Psychology I. F. Prerequisite: None.

Integration of multiple perspectives for examining work organizations, roles, and relationships, and organizational entry and socialization.

PSY 644 03(3-0-0). Industrial/Organizational Psychology II. S. Prerequisite: None.

Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCSubcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
Multiple perspectives for examining individual and organizational development, orientation to organizations, and science and practice in industrial/organizational psychology.

**PSY 645 02(0-0-0). Industrial/Organizational Psychology at Work I. F. Prerequisite: None.**

- Integrating theory, research, and practice in industrial/organizational settings. Assessment and development of applications of psychology in organizations.

**PSY 646 02(0-0-0). Industrial/Organizational Psychology at Work II. S. Prerequisite: None.**

- Development and application of scientific, ethical, and professional standards and competencies in applying psychology in industrial/organizational settings.

**PSY 647 03(0-0-0). Applied Industrial Psychology. F. Prerequisite:**

- Must be admitted to the Master of Applied/Industrial Organizational Psychology program.

  - Applications of theory and methods for recruitment, selection, training, and performance management within organizations. (NT-O)

**PSY 648 03(0-0-3). Applied Organizational Psychology. S. Prerequisite:**

- Must be admitted to the Master of Applied/Industrial Organizational Psychology program. (NT-O)

**PSY 652 04(3-2-0). Methods of Research in Psychology I. F. Prerequisite:**

- One 300- or 400-level STAT course

  - Psychological research emphasizing hypothesis testing and simple research designs, introducing general linear model approach.

**PSY 653 04(3-2-0). Methods of Research in Psychology II. S. Prerequisite:**

- PSY 652

  - Advanced research designs emphasizing general linear model approach.

**PSY 655A-B 03(3-0-0). Research Issues and Models in Psychology. S.**

- Generation and development of research ideas, evaluating approaches, interpreting and reporting findings. A) Applied. B) Experimental.

**PSY 660 03(0-0-3). Applied Cross-Cultural I/O Psychology. S. Prerequisite:**

- Must be admitted to the Master of Applied/Industrial Organizational Psychology program; PSY 647 or PSY 648

  - Cultural differences in the application of individual and organizational interventions to improve human and organizational effectiveness. (NT-O)

**PSY 661 03(0-0-3). Applied Organizational Development. S. Prerequisite:**

- Must be admitted to the Master of Applied/Industrial Organizational Psychology program; PSY 647 or PSY 648

  - Techniques and interventions for developing, improving and effecting change in organizations through diagnosis, planned change, and survey feedback.

**PSY 662 04(0-0-4). Applied Psychological Research Methods I. F. Prerequisite:**

- Must be admitted to the Master of Applied/Industrial Organizational Psychology program; any upper-division statistics course. Credit not allowed for both PSY 662 and PSY 652

  - Psychological research emphasizing hypothesis testing and simple research designs, the general linear model approach with emphasis on application. (NT-O)

**PSY 663 04(0-0-4). Applied Psychological Research Methods II. S. Prerequisite:**

- Must be admitted to the Master of Applied/Industrial Organizational Psychology program; PSY 662. Credit not allowed for both PSY 663 and PSY 653

  - Advanced research designs emphasizing general linear model approach with emphasis on application. (NT-O)

**PSY 665 03(0-0-3). Applied Psychological Research Design. SS. Prerequisite:**

- Must be admitted to the Master of Applied/Industrial Organizational Psychology program; any graduate applied statistics course. Credit not allowed for both PSY 655C and PSY 665.

  - Review of scientific method, generation of hypotheses, and design of laboratory and field research studies. (NT-O)

**PSY 666 03(0-0-3). Succession Planning/Leadership Development. SS. Prerequisite:**

- Must be admitted to the Master of Applied/Industrial Organizational Psychology program; PSY 648.

  - Examines modern theories of leadership, strategies for succession planning; training, coaching, mentoring, professional development for leadership. (NT-O)

**PSY 667 03(0-0-3). Competency Modeling and Criterion Development. F. Prerequisite:**

- Must be admitted to the Master of Applied/Industrial Organizational Psychology program; PSY 647.

  - Conducting job analyses and competency modeling within organizations, application of the results of those processes to criterion development. (NT-O)

**PSY 668 03(0-0-3). Workforce Training and Development. S. Prerequisite:**

- Must be admitted to the Master of Applied/Industrial Organizational Psychology program; PSY 647.

  - An overview of adult learning theory, emphasizing the role of I/O psychology in identifying, designing, transferring, and evaluating training. (NT-O)

**PSY 670 03(3-0-0). Psychological Measurement-Personality. F. Prerequisite:**

- None

  - Construction, administration, interpretation of objective measures of personality including aptitudes, abilities, interests.

**PSY 672 03(3-0-0). Psychological Assessment. S. Prerequisite:**

- PSY 610; PSY 670

  - Use of test data to determine cognitive functioning and predict behavior; supervised test administration and interpretation.

**PSY 675 03(3-0-0). Ethics and Professional Psychology Practice. F. Prerequisite:**

- PSY 611

  - Ethical practice of psychology, duty-to-warn statutes, Colorado law, problematic ethical situations.

**PSY 684 Var[1-3]. Supervised College Teaching.**

  - Supervised teaching, training, and discussion leadership in undergraduate courses.

**PSY 686A-G Var. Practicum.**


**PSY 692A-F Var. Seminar. F, S, SS.**


**PSY 699A-E Var. Thesis. F, S, SS.**


**PSY 720 03(3-0-0). Psychopathology. F. Prerequisite:**

- Psychology graduate students only.

  - Adult and child behavior pathology; theory, research, and methods related to etiology, defining characteristics, and maintaining causes.

**PSY 722 03(3-0-0). Empirically Validated Therapies. S. Prerequisite:
PSY 720. Outline of major empirically validated approaches to assessment and treatment including cognitive-behavioral therapies, interpersonal therapy.

PSY 727 03(3-0-0). Theories of Vocational Development. S, SS. Prerequisite: Psychology graduate students only.
Nature and current status of vocational development theory with implications for career counseling.

PSY 729 03(3-0-0). Counseling and Psychotherapy II. S. Prerequisite: PSY 722.
Theory and practice of group psychotherapy and counseling.

*PSY 754 03(3-0-0). Multivariate Analysis in Behavioral Sciences. S. Prerequisite: PSY 653.
Multivariate analysis, including factor and component analysis, applied to psychological research.

PSY 775 03(3-0-0). Diversity Issues in Counseling. F. Prerequisite: PSY 611.
Diversity issues in clients and counselors such as gender, race, age, sexual orientation, education, religion, disability, socioeconomic status.

PSY 784 Var. Supervised College Teaching. F, S.
Philosophy, approaches, and techniques of college-level instruction; supervised teaching with consultation of faculty.

PSY 786A-J Var. Advanced Practicum. Prerequisite: Appropriate subtopic of PSY 686A-G.
A) Counseling and diagnosis II. C) Industrial-organizational II.

PSY 787 Var. Internship.
Supervised work experience under departmental guidelines in approved psychological agency or setting.

PSY 792A-F Var. Seminar. F, S, SS.
C) Counseling psychology. D) Industrial/organizational psychology.
E) Perceptual and brain sciences. F) Special topics in psychology.

PSY 795A-F Var[1-3]. Independent Study. F, S, SS.
Individual investigation of a special topic in psychology under direction of faculty.
C) Counseling/Clinical Psychology. D) Industrial/Organizational Psychology.
E) Perceptual and Brain Sciences. F) Special Topics in Psychology.

C) Counseling/Clinical Psychology. D) Industrial/Organizational Psychology.
E) Perceptual and Brain Sciences.

* Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
BUSINESS MANAGEMENT SCIENCE
COURSES
Department of Computer Information Systems
College of Business

QNT 270 03(2-2-0). Basic Business Statistics. F, S, SS. Prerequisite: STAT 204.
Statistical tools applied to business conditions and functions.

QNT 375 03(2-2-0). Models and Applications in Management Science. F, S. Prerequisite: STAT 204.
Introduction and application of operations research techniques to business decision problems.

QNT 570 03(3-0-0). Statistical Decision Making. F, SS. Prerequisite: QNT 270.
Classical statistical techniques including hypothesis testing and multiple regression; model building, control charts, time series and forecasting.
REAL ESTATE COURSES

Department of Finance and Real Estate
College of Business

REL 360 03(3-0-0). Real Estate Principles. F, S, SS. Prerequisite: AREC 202 or ECON 202.
Broad survey of real estate emphasizing land use, urban structure and growth, market analysis, real estate finance and valuation, and property rights. (NT-O)

REL 367 03(3-0-0). Real Estate Law. S. Prerequisite: BUS 205 or BUS 260 or HDFS 403.
Legal regulations applicable to real property ownership and transfer, to real estate agents, and to use of real property. (NT-O)

REL 430 03(3-0-0). Real Estate Analysis and Marketing. F. Prerequisite: REL 360.
How the brain impacts real estate analysis and marketing; real estate economics; major property types; and marketing research process.

REL 435 03(3-0-0). Real Estate Marketing and Brokerage. S. Prerequisite: REL 360. This is a partial semester course.
Practitioner focus including legal forms, valuation, sales techniques, escrow, fiduciary requirements, start-to-finish real estate project. (NT-O)

REL 440 03(3-0-0). Real Estate Development. S. Prerequisite: FIN 300; REL 360; REL 460.
Development process including urban dynamics, architecture, construction, law, public approvals, financing, marketing, and property management.

REL 442 03(3-0-0). Real Estate Professional Development. S. Prerequisite: REL 430.
Career and skills development; learn negotiation and conflict resolution, performance skills; sales skills; networking skills.

REL 452/AREC 452 02(2-0-0). Real Estate Appraisal Principles. S. Prerequisite: AREC 202 or ECON 202; AREC 305 or REL 360. Credit not allowed for both REL 452 and AREC 452.
Theoretical principles that underlie real estate appraisal methods. (NT-O)

REL 453/AREC 453 02(2-0-0). Real Estate Appraisal Practices. S. Prerequisite: AREC or REL 452. Credit not allowed for both REL 453 and AREC 453.
 Procedures and Practices used in real estate appraisal. (NT-O)

REL 455 02(2-0-0). Residential Real Estate Finance. F. Prerequisite: REL 360. This is a partial semester course.
Residential mortgage origination, mortgage loan amortization; secondary markets, residential investment. (NT-O)

REL 460 03(3-0-0). Real Estate Finance and Investment. F. Prerequisite: FIN 300 or FIN 305; REL 360.
Financing of real estate resources: real estate financial markets, policies; use of leverage and real estate investment analysis in real estate investment programs.

REL 487 Var[1-3]. Real Estate Internship. Maximum of 3 credits allowed in course.

REL 495 Var[1-3]. Real Estate Independent Study. Maximum of 3 credits allowed in course.

REL 496 Var[1-3]. Real Estate Group Study. Maximum of 3 credits allowed in course.

° Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
RESTAURANT/RESORT MANAGEMENT

Department of Food Science and Human Nutrition
College of Health and Human Sciences

RRM 101 03(3-0-0). Hospitality Industry. F, S.
Food service, lodging, and tourism industries; exploration of various industry segments and career opportunities.

RRM 200 03(3-0-0). Hotel Operations. F, S. Prerequisite: RRM 101.
Front office and room management as related to resorts and hotels. Computer application, financial controls, employee and guest relations.

RRM 310 03(3-0-0). Food Service Systems-Operations. F, S, SS.
Technical operations: menu planning, evaluation; recipe standardization; forecasting, food cost, sanitation, hospital food distribution systems. (NT-O)

RRM 311 03(3-0-0). Food Service Systems-Production and Purchasing. F, S, SS. Prerequisite: RRM 310.
Quantity food production principles, purchasing specifications, market channels. (NT-O)

RRM 312 03(2-0-1). Hospitality Human Resource Management. F, S. Prerequisite: RRM 310.
Principles and practices of employee management in the hospitality industry including employment process, training, legal aspects, performance.

RRM 330 02(2-0-0). Alcohol Beverage Control and Management. F. Prerequisite: CHEM 103 or CHEM 107.
Classification, production, and service of controlled beverages; management of facilities and people; safe service training; financial controls.

RRM 350 03(3-0-0). Restaurant and Resort Marketing. F. Prerequisite: RRM 101.
Restaurant and resort operations marketing, including planning, promotion, and special industry considerations.

RRM 386 03(0-0-9). Practicum. F, S, SS. Prerequisite: RRM 101.
Practicum in Hospitality Management.

RRM 400 03(2-0-1). Food and Society. S. Prerequisite: PSY 100 or SOC 100; must have completed category 3D and 3E AUCC requirements.
Exploration of the influence of food, dining, and nutrition on cultural aspects of the human experience.

RRM 415 03(0-6-0). Catering Techniques and Culinary Arts. S. Prerequisite: RRM 311.
Management of advanced techniques in culinary technique; catering of food and beverages for special functions. ($)

RRM 340 04(0-8-0). Restaurant Operations. F, S. Prerequisite: RRM 101 or concurrent registration.
Principles, practices, philosophies, systems for daily operations of casual or fine dining restaurant; focus on developing solutions to problems.

RRM 460/NRRT 460 03(3-0-0). Event and Conference Planning. F, S. Prerequisite: NRRT 270 or RRM 101. Credit not allowed for both RRM 460 and NRRT 460.
Foundation in planning, organizing, and producing special events and conferences. Functions and strategies for effective event management.

RRM 487 03(0-0-9). Internship: Hospitality Management. F, S, SS. Prerequisite: RRM 200; RRM 311 or concurrent registration; junior standing.

RRM 492 03(0-0-3). Seminar on Hospitality Management. F, S. Prerequisite: MKT 305.
Applying and synthesizing service knowledge and management functions; project discussions, benchmark presentations, execution of a capstone project. ($)

RRM 500 03(3-0-0). Understanding Food. F. Prerequisite: RRM 400.
Role of food in the creation of identity, as driver of technology, prominent role food plays in the media.

RRM 604 03(3-0-0). Research Methods in Food and Nutrition. S. Prerequisite: ERDM 606 or STAT 301 or STAT 311.
Research techniques used in food and nutrition disciplines. Emphasis on design, preparation, and evaluation of research.

RRM 686 01(0-4-0). Practicum-Food Service Management.
Food production, menu planning, nutritional analysis, and food costing.

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RS 300 03(3-0-0). Rangeland Conservation and Stewardship. F. Prerequisite: BZ 120 or LIFE 102.
  Conservation and management of rangeland-ecosystem values using sustainable practices. (NT-O)

RS 310/F 310 03(2-2-0). Forest and Rangeland Ecogeography. F, S. Prerequisite: BZ 101 or BZ 104 or BZ 110 or BZ 120 or LIFE 102.
  Distribution of wildland plant communities and identification of important grasses, forbs, shrubs and trees common in North America.

RS 312 01(0-2-0). Rangeland Plant Identification Lab. F. Prerequisite: Concurrent registration in RS 310.
  Identification of characteristic grasses, forbs, and shrubs common to North American rangelands.

RS 329 01(0-3-0). Rangeland Assessment. SS. Prerequisite: SOCR 240; RS 300; RS 331.
  Five-day intensive field-based course on principles of rangeland ecosystem assessment.

+RS 331 03(2-2-0). Wildland Plants and Plant Communities. F. Prerequisite: BZ 223 or NR 220. Required field trips.
  Distribution of non-forested wildland plant communities and important plant species in the western United States. (NT-O)

+RS 351 03(2-2-0). Wildland Ecosystems in a Changing World. F. Prerequisite: LAND 220/LIFE 220 or LIFE 320; SOCR 240. Required field trips.
  Understanding and conserving non-forested wildland ecosystems, processes, and services under changing environmental conditions.

RS 400 02(2-0-0). Rangeland Improvements. F. Prerequisite: RS 300 or SOCR 320.
  Improvement of rangelands through biological and cultural methods; management of improved rangelands.

RS 420 03(1-4-0). Grass Taxonomy. S. Prerequisite: BZ 223.
  Anatomy, morphology, and identification of grasses.

+RS 432 02(1-3-0). Rangeland Measurements and Monitoring. F. Prerequisite: NR 220; RS 300 or concurrent registration; STAT 201 or STAT 301 or STAT 307. Required field trips.
  Vegetation sampling and field measurements emphasizing applications for monitoring and adaptive management. ($)

+RS 452 03(3-0-0). Rangeland Herbivore Ecology and Management. F, S, SS. Prerequisite: RS 300; LAND 220/LIFE 220 or LIFE 320. Voluntary field trips.
  Ecology and management of large ungulate herbivores including consumer functions at organismal and ecosystem levels. (NT-O)

RS 470 02(2-0-0). Rangeland Economics and Analysis. F. Prerequisite: AREC 202 or ECON 202; RS 300.
  Economics of rangeland resource use; analytical techniques for allocation of rangeland resources.

RS 471 02(2-0-0). Rangeland Planning and Grazing Management. F. Prerequisite: RS 300 or SOCR 320.
  Definition of grazing management, grazing systems. Synthesis of animal, plant responses to grazing management. Structure, function of rangeland planning.

+RS 472 04(1-6-0). Rangeland Ecosystem Planning. S. Prerequisite: RS 471. Required field trips.
  Range allotment, ranch and restoration planning. ($)

RS 478 03(3-0-0). Ecological Restoration. S. Prerequisite: BZ 450 or LAND 220/LIFE 220 or LIFE 320; SOCR 240. Credit not allowed for both RS 478 and NR 678.
  Analysis of environmental factors influencing restoration of disturbed lands and practices for successful restoration of disturbed ecosystems.

RS 495 Var. Independent Study-Rangeland Ecosystem.

RS 496 Var. Group Study-Rangeland Ecosystem.

RS 500 03(3-0-0). Advanced Rangeland Management. F, S, SS. Prerequisite: One course in basic ecology.
  Rangeland management concepts. (NT-O)

RS 501 03(3-0-0). Range Habitat Manipulation. F. Prerequisite: RS 300 or SOCR 320.
  Improvement of range habitats and effects on ecosystem components.

+RS 520 02(2-0-0). Range Issues and Policy. F. Prerequisite: RS 300; SOCR 320.
  Explores and evaluates current issues and policies concerning range use.

RS 531 03(2-3-0). World Grassland Ecogeography. F. Prerequisite: BZ 223.
  Distribution, climate, and structure of the world’s major grasslands with emphasis on North America. (NT-O)

+RS 532 03(1-3-1). Rangeland Ecosystem Sampling. F. Prerequisite: STAT 301; one ecology course. Credit not allowed for both RS 532 and RS 432. Required field trips.
  Measurement, analysis techniques for rangeland vegetation. Applications to management emphasized. ($)

RS 552 04(3-0-1). Range Animal Production and Management. F, S, SS. Prerequisite: One course in ecology; one course in animal or wildlife management.
  Biological and ecological basis for production of meat from rangelands. (NT-O)

+RS 565 03(2-2-0). Riparian Ecology and Management. S. Prerequisite: LAND 220 or LIFE 220 or LIFE 320. Required field trips.
  Analysis of interactions among biotic and abiotic processes as relates to the ecology and management of riparian systems, emphasizing case studies.

RS 630 03(3-0-0). Ecology of Grasslands and Shrublands. F. Prerequisite: RS 300.
  Distributions and climatic controls on grassland and shrubland plant communities.

*RS 640 03(3-0-0). Vegetation-Environment Analysis. F. Prerequisite: STAT 301.
  Multivariate analyses and ecological interpretations of vegetation communities.

RS 651 04(3-2-0). Primary Production and Decomposition. F. Prerequisite: One course in plant physiology; one course in soils.
  Energy transformations within primary producer compartment; dissipation of ecosystem biomass by decomposers, mineralization. (NT-O)

RS 693 01(1-0-0). Seminar.

RS 695 Var. Independent Study-Rangeland Ecosystem.

RS 696 Var. Group Study-Rangeland Ecosystem.

RS 698 Var. Research.


RS 703 01(0-0-1). Seminar.

RS 793 Var. Group Study-Rangeland Ecosystem.

RS 795 Var. Independent Study-Rangeland Ecosystem.

RS 798 Var. Research.

SA 482 [Var] Study Abroad. (AUCC 3E).
Students participating in a semester study abroad program register for SA 482. This is not a course for credit.

SA 682 [Var] Graduate Study Abroad. Prerequisite: Approval of graduate committee, Graduate School, and International Programs.
Vehicle to allow graduate students to enroll in a study program abroad as part of their approved program. This is not a course for credit.
### SOCILOGY COURSES

**Department of Sociology**  
**College of Liberal Arts**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Delivery Formats</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 100 03(3-0-0)</td>
<td>General Sociology. (GT-SS3, AUCC 3C). F, S, SS.</td>
<td></td>
<td></td>
<td>Analysis of human societies in the U.S. and abroad; major institutions, groups, and interaction patterns from the sociological perspective. (NT-O)</td>
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<tr>
<td>SOC 105 03(3-0-0)</td>
<td>Social Problems. (GT-SS3, AUCC 3C). F, S.</td>
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<td>Analysis of global and domestic social problems. (NT-O)</td>
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<tr>
<td>SOC 192 03(0-3-0)</td>
<td>Civic Culture and Social Responsibility. S.</td>
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<td>Erosion of civility in society with particular emphasis on civic culture on the university campus.</td>
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<tr>
<td>SOC 205 03(3-0-0)</td>
<td>Contemporary Race-Ethnic Relations. (GT-SS3, AUCC 3E). F, S.</td>
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<td>People of color and white ethnic groups in the U.S. and internationally. (NT-O)</td>
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<tr>
<td>SOC 210 03(3-0-0)</td>
<td>Quantitative Sociological Analysis. F, S. Prerequisite: Mathematics placement exam or one credit of 100-level mathematics.</td>
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<td>Application of quantitative concepts and methodology to investigation of social problems.</td>
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<tr>
<td>SOC 220 03(3-0-0)</td>
<td>Global Environmental Issues. F, S.</td>
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<td>Relationship between human societies around the world and the larger natural environment.</td>
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<tr>
<td>SOC 253 03(3-0-0)</td>
<td>Introduction to Criminal Justice. F, S, SS.</td>
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<td>Criminal justice as a system. History, philosophy, components and administration of criminal justice.</td>
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<tr>
<td>SOC 301 03(3-0-0)</td>
<td>Development of Sociological Thought. F, S. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Central themes in sociological thought from Enlightenment to present. (NT-O)</td>
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<tr>
<td>SOC 302 03(3-0-0)</td>
<td>Contemporary Sociological Theory. F, S, SS. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Theoretical approaches and models in sociology.</td>
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<tr>
<td>SOC 311 03(3-0-0)</td>
<td>Methods of Sociological Inquiry. F, S, SS. Prerequisite: SOC 100 or SOC 105; MATH 118.</td>
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<td>Application of sociological concepts to sociological problems including problem formulation, data gathering, and research design. (NT-O)</td>
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<tr>
<td>SOC 313 01(1-0-0)</td>
<td>Computer Methods in Sociology. F. Prerequisite: SOC 210.</td>
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<td>Experimental introduction to typical uses of computers in sociology with emphasis on data analysis. (NT-O)</td>
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<tr>
<td>SOC 320 03(3-0-0)</td>
<td>Population-Natural Resources and Environment. F. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Population studies; world growth patterns and their relationship to natural resources and environment. (NT-O)</td>
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<tr>
<td>SOC 321 03(3-0-0)</td>
<td>Soil, Environment, and Society. F, S. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Role of soil in our environment and its value as it relates to the social and economic well-being of society.</td>
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<tr>
<td>SOC 322 03(3-0-0)</td>
<td>Introduction to Environmental Justice. F, S. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Unequal distribution of environmental risks, benefits, policies and regulatory practices across different populations.</td>
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<tr>
<td>SOC 323 03(3-0-0)</td>
<td>Sociology of Environmental Governance. S. Prerequisite: SOC 100 or SOC 105; minimum of 30 credits.</td>
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<td>Roles of government and civil society in creating environmental problems and in developing effective responses to those problems.</td>
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<tr>
<td>SOC 330 03(3-0-0)</td>
<td>Social Stratification. F. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Theories of social inequality and mobility and their ramifications in American society. (NT-O)</td>
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<tr>
<td>SOC 332 03(3-0-0)</td>
<td>Comparative Majority-Minority Relations. S. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Discrimination, ideology, power, policy issues in the U.S. and selected societies; application of basic concepts in student’s self appraisal. (NT-O)</td>
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<tr>
<td>SOC 333 03(3-0-0)</td>
<td>Gender and Society. F. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Analysis of social organization of gender in contemporary society, emphasizing gendered experiences and institutional linkages.</td>
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<tr>
<td>SOC 340 03(3-0-0)</td>
<td>Bureaucracy and Modern Organizations. S. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Structure and function of large-scale organization: coordination of activities between organizations and society.</td>
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<tr>
<td>SOC 341 03(3-0-0)</td>
<td>Sociology of Rural Life. S. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Rural life in U.S. and Third World societies: analysis of sociocultural systems, social differentiation, social institutions, and problems of social change. (NT-T)</td>
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<tr>
<td>SOC 342 03(3-0-0)</td>
<td>Leisure and Society. F, S, SS. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Nature and purpose of leisure and work in society; influences of culture and social structure on leisure values and behavior.</td>
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<tr>
<td>SOC 343 03(3-0-0)</td>
<td>Sport and Society. F, S. Prerequisite: None.</td>
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<td>Sport as a microcosm of American society focusing on sport and values, socialization, institutions, stratification, race, and gender.</td>
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<tr>
<td>SOC 352 03(3-0-0)</td>
<td>Criminology. F, S, SS. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Crime in contemporary society; behavioral, causation, prevention, and justice issues. (NT-O)</td>
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<tr>
<td>SOC 353 03(3-0-0)</td>
<td>Criminal Investigations. F, S. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Examination of the social, organization, and applied facets of the criminal investigation process.</td>
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<tr>
<td>SOC 354 03(3-0-0)</td>
<td>Law Enforcement and Society. F, S. Prerequisite: SOC 100 or SOC 105; SOC 253.</td>
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<td>Rise and development of law enforcement as a societal reaction to crime.</td>
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<tr>
<td>SOC 358 03(3-0-0)</td>
<td>Correctional Organizations. S. Prerequisite: SOC 100 or SOC 105; SOC 253.</td>
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<td>Social and organizational issues in the administration of punishment and correction.</td>
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<tr>
<td>SOC 360 03(3-0-0)</td>
<td>Political Sociology. S. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Analysis of power as a sociological concept, emphasizing competing theories of the state and power.</td>
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<td>SOC 362 03(3-0-0)</td>
<td>Social Change. S. Prerequisite: SOC 100 or SOC 105.</td>
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<td>Sources of stability and stress in changing societies, consequences of planned and unplanned change; future trends.</td>
</tr>
</tbody>
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SOC 364 03(3-0-0). Agriculture and Global Society. S. Prerequisite: SOC 100 or SOC 105. Analysis of relationships between global agriculture and social change.

SOC 366 03(3-0-0). Peoples and Institutions of Latin America. F. Prerequisite: SOC 100 or SOC 105. Change in the cultures and institutions of contemporary Latin America.

SOC 371 03(3-0-0). Symbolic Interaction. F, S. Prerequisite: SOC 100 or SOC 105. Basic concepts and issues in sociological perspective of social action and interactionism.

SOC 372 03(3-0-0). Sociology of Deviance. F, S. SS. Prerequisite: SOC 100 or SOC 105. Description, comparison, and analysis of theories and research of deviance. (NT-O)

SOC 375 03(3-0-0). Sociology of Religion and Medicine. F. Prerequisite: SOC 100 or SOC 105. Descriptions and analyses of the roles and relationships of religion and medicine as modern social institutions.

SOC 403 03(0-0-3). Capstone Seminar. F, S. Prerequisite: SOC 210 or SOC 2**; SOC 301 or SOC 302; SOC 311; SOC 313. Student demonstration of central concepts and procedures currently employed in sociology discipline.

*SOC 422/*ANTH 422 03(3-0-0). Comparative Legal Systems. S. Prerequisite: ANTH 100 or SOC 100. Credit not allowed for both SOC 422 and ANTH 422. Traditional approaches to law, competing concepts of law in the global system and experiences of minorities in state legal systems.

*SOC 429 03(3-0-0). Comparative Urban Studies. S. Prerequisite: SOC 100 or SOC 105. World urbanization and metropolitan development, measurement of growth and change in cities, and sociological perspective in planning.

SOC 431 04(3-2-0). Community Dynamics and Development. F, S. Prerequisite: SOC 100 or SOC 105; SOC 311. Nature of community; its institutions, problems and processes, including growth, disintegration, and development.

SOC 444/ETST 444 03(3-0-0). Federal Indian Law and Policy. S. Prerequisite: None. Credit not allowed for both SOC 444 and ETST 444. Indian policy processes and their impact on Native lives and culture, particularly Native sovereignty.

SOC 450 03(3-0-0). Gender, Crime, and Criminal Justice. F. Prerequisite: SOC 100 or SOC 105. Issues related to women as offenders, victims, and professionals in the criminal justice system.

SOC 455 03(3-0-0). Sociology of Law. F. Prerequisite: SOC 100 or SOC 105; SOC 253. Social origins, functions, and procedures of law in society.

SOC 460 03(3-0-0). Society and Environment. S. Prerequisite: SOC 100 or SOC 105. Technology as a social phenomenon interacting with social organization and the natural environment.

SOC 461 03(3-0-0). Water, Society, and Environment. F, S, SS. Prerequisite: SOC 100 or SOC 105. Social aspects of water resource utilization; interface of social organization with physical environment. (NT-O)

SOC 462 03(3-0-0). Applied Social Change. S. Prerequisite: SOC 100 or SOC 105. Applied sociology with a focus on research and practice designed to foster social change.

SOC 463 03(3-0-0). Sociology of Disaster. S. Prerequisite: SOC 100 or SOC 105. Determinants and consequences of behavior and response to environmental extremes including floods, earthquakes, wind, severe storms, and technological emergencies. (NT-O)

*SOC 474 03(0-0-3). Social Movements and Collective Behavior. S. Prerequisite: SOC 100 or SOC 105. Theory and research on causes, organizational structure, and outcomes of social movements and collective behavior.


SOC 487 03(0-9-1). Internship. Prerequisite: SOC 210; SOC 301 or SOC 302; SOC 311; SOC 313. Academic-based work experience with selected organizations or agencies. Supervised application of sociological principles and seminar participation.

SOC 492 01(0-0-1). Seminar. F, S, SS. Prerequisite: SOC 210 or 2**; SOC 301 or SOC 302; SOC 311; SOC 313; concurrent registration in SOC 487. Examination of work-oriented instruction in seminar setting where sociological principles are analyzed using internship experience.

SOC 495 Var. Independent Study.

SOC 500 01(1-0-0). The Sociological Profession I. F. Prerequisite: Fifteen credits in sociology. Examination of issues and values affecting sociology as a profession.

SOC 501 03(3-0-0). The Sociological Profession II. F. Prerequisite: Fifteen credits in sociology. Examination of the activities and procedures critical to the socialization of professional sociologists.

SOC 502 03(3-0-0). Foundations of Theoretical Sociology. F. Prerequisite: SOC 500 or concurrent registration. Contributions of major sociological theorists prior to mid-20th century.

*SOC 503 03(3-0-0). Contemporary Sociological Theory. S. Prerequisite: SOC 502. Contributions of major sociological theorists since mid-20th century.

*SOC 510 03(3-0-0). Sociological Methods I. F. Prerequisite: SOC 210 or SOC 311. Linkage of sociological theory and conceptual models; case studies; data-gathering techniques.

*SOC 511 03(3-0-0). Sociological Methods II. S. Prerequisite: SOC 510. Linkage of sociological theory and conceptual models; case studies; data-gathering techniques.

SOC 540 03(3-0-0). Community Sociology. F. Prerequisite: SOC 500. Intellectual roots of community sociology and contemporary community studies.

SOC 555 03(0-0-3). Society, Deviance, and Crime. F. Prerequisite: 12 credits of sociology at the 300 level or above. Sociological perspectives and research in the areas of deviance and crime, including classical, positivist, and critical approaches.

° Alternate year offering (odd); † Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
SOC 562/AGRI 562 03(2-0-1). Sociology of Food Systems and Agriculture. F. S.
How agricultural choices generate intended and unintended consequences for human communities and the natural environment.

SOC 564 03(3-0-0). Environmental Justice. S. Prerequisite: SOC 100 or SOC 105.
Unequal distribution of environmental risks, benefits, policies and regulatory practices across different populations.

°SOC 566/AREC 566 03(3-0-0). Contemporary Issues of Developing Countries. S. Prerequisite: Two or more courses in AREC or ECEN or SOC. Credit not allowed for both SOC 566 and AREC 566.
Social, economic, and technological factors in developing countries.

*SOC 610 03(0-0-3). Seminar in Methods of Qualitative Analysis. S. Prerequisite: POLS 620 or concurrent registration or SOC 311. Credit not allowed for both SOC 610 and POLS 621.
Examination and application of qualitative techniques of analysis.

*SOC 612 03(0-0-3). Seminar in Methods of Evaluational Research. S. Prerequisite: SOC 511.
Quantitative and qualitative techniques of evaluating social action programs.

°SOC 613 03(0-0-3). Seminar in Multiple Regression and Path Analysis. F. Prerequisite: SOC 511.
Analysis and application of techniques for multiple regression and path analysis.

*SOC 614 03(3-0-0). Comparative Sociology. S. Prerequisite: SOC 500.
Examination of problems and prospects in extending and carrying out sociological research across social systems.

*SOC 630 03(3-0-0). Social Stratification. S. Prerequisite: SOC 500.
Theory and research on class structure, status attainment, ideology, and social change.

*SOC 631 03(3-0-0). Sociology of Rural Development. F. Prerequisite: SOC 500.
Rural social organization and development, modernization, and social change as it relates to rural social systems; underdeveloped regions of world.

°SOC 633 03(3-0-0). Theories of Modern Organizations. S. Prerequisite: SOC 340.
Comparison of various theoretical perspectives on functioning of modern large-scale organizations.

*SOC 63903(3-0-0). Technology Assessment and Social Forecasting. F. Prerequisite: SOC 500.
Interrelationships between technology and society emphasizing procedures for evaluating impacts and forecasting alternatives.

*SOC 660 03(3-0-0). Theories of Development and Social Change. F. Prerequisite: SOC 500.
Central concepts, issues, and approaches in sociology of development.

°SOC 661 03(0-0-3). Gender and Global Society. S. Prerequisite: SOC 500.
Gender relations and social change in global society.

SOC 662 03(0-0-3). Seminar in Sociological Policy Analysis. S. Prerequisite: SOC 500.
Examination of sociological perspectives on formulation and impact of policies to deal with social problems.

*SOC 663 03(3-0-0). Sociology of Sustainable Development. S. Prerequisite: SOC 500.
Social dimensions of sustainable Third World development and implications for policy.

° Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCCSubcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)

°SOC 664 03(3-0-0). Sociology of Water Resources. F. Prerequisite: SOC 500.
Social organization, conflict, and power in arid environments.

SOC 665 03(3-0-0). Sociology of Science and Technology. F. Prerequisite: Ten credits of undergraduate natural sciences; SOC 100.
Examination of connections among science, technology, and social development in national and global context.

°SOC 666 03(0-0-3). Globalization and Socioeconomic Restructuring. S. Prerequisite: SOC 500.
Sociological theories and issues in globalization; socioeconomic restructuring of the world economy.

°SOC 667 03(3-0-0). Theories of State, Economy, and Society. S. Prerequisite: SOC 500.
Major classical and contemporary sociological theories of state-economy-society relations emphasizing development.

SOC 668 03(3-0-0). Environmental Sociology. S. Prerequisite: SOC 500.
Connections between social organizations, the environment, and science and technology.

SOC 669 03(0-0-3). Global Inequality and Change. F. Prerequisite: SOC 500.
Major issues in global inequality and change from a historical and contemporary perspective.

SOC 671 03(0-0-3). Metatheoretical Issues in Sociology. F. Prerequisite: SOC 502.
Analysis of metatheoretical concepts and issues in sociological theory.

SOC 693A-D 03(0-0-3). Seminar. S. Prerequisite: SOC 602.

SOC 695 Var. Independent Study.

SOC 696 Var[1-3]. Group Study. Maximum of 8 credits allowed in course.


°SOC 752 03(0-0-3). Seminar in Utopian Thought. F. Prerequisite: SOC 602.
Sociological analysis of major utopian writings.

SOC 784 Var. Supervised College Teaching.

SOC 787 Var. Internship.

°SOC 793A-D 03(0-0-3). Seminar. S. Prerequisite: SOC 511.

SOC 795 Var. Independent Study.

SOC 799 Var. Dissertation.
SOIL AND CROP SCIENCES COURSES
Department of Soil and Crop Sciences
College of Agricultural Sciences

SOCR 100 04(3-2-0). General Crops. F. Prerequisite: None.
Production and adaptation of cultivated crops; principles affecting growth, development, management, and utilization.

SOCR 171/HORT 171 03(2-0-1). Environmental Issues in Agriculture. (GT-SS3, AUCC 3E). F. Prerequisite: None. Credit not allowed for both SOCR 171 and HORT 171.
Historical development of agriculture; environmental consequences of modern food production and other cultural approaches to agriculture.

SOCR 177 01(1-0-0). Applied Information Technology in Agriculture. S. Prerequisite: None.
Introduction to database and project management, GIS/GPS, and remote sensing as they apply to agriculture, the environment, and business management.

SOCR 192 03(0-0-3). Water in the West. F. Prerequisite: None.
History and current status of water resources management and policy in the western United States.

SOCR 200 01(0-2-0). Seed Anatomy and Identification. F, S, SS. Prerequisite: BZ 104 or BZ 110 or BZ 120 or HORT 100 or LIFE 102 or SOCR 100.
Principles of seed anatomy including reproduction, identification, and seed characteristics of plant families. (NT-C/O)

SOCR 201 01(0-2-0). Seed Development and Metabolism. F, S, SS. Prerequisite: BZ 104 or BZ 110 or BZ 120 or HORT 100 or LIFE 102 or SOCR 100.
Basic processes controlling seed development, maturation, dormancy, storage, germination, and how these factors relate to seedling growth. (NT-C/O)

SOCR 240 04(3-2-0). Introductory Soil Science. F, S. Prerequisite: CHEM 107 or CHEM 111.
Formation, properties, and management of soils emphasizing soil conditions that affect plant growth.

SOCR 300 02(0-4-0). Seed Purity Analysis. F, S, SS. Prerequisite: SOCR 201 or written consent of instructor.
Fundamentals for determining physical purity of a seed lot using established rules and procedures. (NT-C/O)

SOCR 301 02(0-4-0). Seed Germination and Viability. F, S, SS. Prerequisite: SOCR 201 or written consent of instructor.
Seed viability tests including standard germination and tetrazolium, seed viability, dormancy, parameters of viability and evaluation. (NT-C/O)

SOCR 310 02(0-4-0). Agronomic Plant and Seed Identification. S. Prerequisite: BZ 104 or BZ 110 or BZ 120 or HORT 100 or LIFE 102 or SOCR 100.
Evaluate characteristics needed to identify agronomic plant and seed species.

SOCR 320 03(3-0-0). Forage and Pasture Management. S. Prerequisite: None. Credit not allowed for both SOCR 320 and RS 320.
Fundamentals of establishment, management, and utilization of cultivated forages including hay, silage, and pasture production. ($)

SOCR 322 03(3-0-0). Principles of Microclimatology. S. Prerequisite: Three credits in PH.
Principles of microclimatology including energy balance concepts for soil and vegetation surfaces, and their application.

SOCR 330 03(3-0-0). Principles of Genetics. F, S, SS. Prerequisite: BZ 110 or BZ 120 or LIFE 102.
Transmission, population, and molecular genetics; practical applications.

SOCR 331 01(0-2-0). Genetics Laboratory. F, S. Prerequisite: SOCR 330 or concurrent registration.
Experimental techniques in transmission and molecular genetics.

*SOCR 341 01(1-0-0). Microbiology for Sustainable Agriculture. S. Prerequisite: SOCR 240.
Functional roles and management of soil organisms in organic agriculture, emphasis on ecological interactions with plants and plant pathogens.

*SOCR 342 01(1-0-0). Organic Soil Fertility. F. Prerequisite: SOCR 240; SOCR 341; SOCR 350.
Organic soil fertility management in framework of holistic organic farming system. ($)

**SOCR 343 01(1-0-0). Composting Principles and Practices. F. Prerequisite: SOCR 240; SOCR 350.
Fundamentals of compost production, use, and regulation. ($)

*SOCR 344 01(1-0-0). Crop Development Techniques. S. Prerequisite: BZ 120 or LIFE 102 or LIFE 103.
Conventional and transgenic approaches to crop variety development.

*SOCR 345/*HORT 345 02(0-4-0). Diagnosis and Treatment in Organic Fields. SS. Prerequisite: BSPM 302 or BSPM 308 or BSPM 361; HORT 100 or SOCR 100; SOCR 240. Credit not allowed for both SOCR 345 and HORT 345.
Field experience in diagnosis of pest and nutrient problems on organic farms and development of treatment recommendations. ($)

SOCR 350 03(3-0-0). Soil Fertility Management. F. Prerequisite: SOCR 240.
Managing soil fertility and fertilizers to meet plant nutrient requirements in an environmentally sound manner with emphasis on nutrient cycling.

SOCR 351 01(0-2-0). Soil Fertility Laboratory. F. Prerequisite: SOCR 350 or concurrent registration.
Soil chemical analyses and development of fertilizer recommendations for crops. ($)

SOCR 370 02(2-0-0). Irrigation Principles. S. Prerequisite: HORT 100 or SOCR 100 or BZ 120; SOCR 240.
Determination of irrigation water requirements based on the estimation of storage and movement of water in the soil-plant-atmospheric system.

*SOCR 371 01(1-0-0). Irrigation of Field Crops. F. Prerequisite: SOCR 370.
Management of irrigation systems for field crops with emphasis on irrigation methods, irrigation scheduling and strategies for water conservation. Required field trips.

*SOCR 377 03(2-2-0). Geographic Information Systems in Agriculture. F. Prerequisite. Three credits in SOCR or CS. Credit allowed for only one of the following: SOCR 377 or CIVE 377 or SOCR 577.
Introduction to geographic information systems and global positioning systems with applications to agriculture. ($)

SOCR 384 Var[1-5]. Supervised College Teaching. F, S, SS. Prerequisite: None. A maximum of 10 combined credits for all 384 and 484 courses are counted towards graduation requirements.

*SOCR 400 03(2-2-0). Soils and Global Change: Science and Impacts. F. Prerequisite: LIFE 220 or LIFE 320; SOCR 240. Required field trips.
Foundations on the science of global change and its impact on soil processes and biota.

° Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
+SOCR 401 03(2-3-0). Greenhouse Gas Mitigation, Land Use, and Mgmt. F. Prerequisite: SOCR 240. Required field trips. Introduction to greenhouse gas estimation methods and mitigation project development in the land use sector.

SOCR 410 01(1-0-0). Seed Processes: Storage and Deterioration. F, S, SS. Prerequisite: BZ 104 or BZ 105 or BZ 120.

Environmental conditions and management factors influencing storage and deterioration of seeds, including physiological and biochemical changes. (NT-C/O)

SOCR 411 01(1-0-0). Large Seeded Legume Seed Production. F, S, SS. Prerequisite: BZ 104 or BZ 105 or BZ 120.

Principles for seed production of large-seeded legume crops with emphasis on common bean, peanut, and soybean. (NT-C/O)

SOCR 412 01(1-0-0). Seed Processes: Separation and Conditioning. F, S, SS. Prerequisite: SOCR 100.

Understanding the physical process required to separate pure seed from contaminants and maintain viability. (NT-C/O)

SOCR 420 03(3-0-0). Crop and Soil Management Systems I. S. Prerequisite: HORT 100 or SOCR 100; SOCR 240.

Principles of crop, soil management emphasizing environmental factors influencing crop growth and development, interactions with soil organic matter.

SOCR 421 04(3-2-0). Crop and Soil Management Systems II. F. Prerequisite: HORT 100 or SOCR 100; SOCR 240.

Principles of crop and soil management with emphasis on soil erosion control, water conservation, and plant-water relationships. ($)

*SOCR 424/*HORT 424 03(3-0-0). Topics in Organic Agriculture. F. Prerequisite: AREC 202 or ECON 202; AREC 328; HORT 100 or SOCR 100; SOCR 171/HORT 171; SOCR 240. Credit not allowed for both SOCR 424 and HORT 424.

Examination of issues specific to organic food production systems and marketing.

*SOCR 430 03(3-0-0). Applications of Plant Biotechnology. S. Prerequisite: SOCR 330.

Current and potential applications of DNA-based biotechnology in crop agriculture and other plant disciplines.

SOCR 440 04(2-3-1). Pedology. F. Prerequisite: None.

Process of soil formation, characterization, classification of soils; soil survey methods. ($)

SOCR 441 03(2-3-0). Soil Ecology. S. Prerequisite: SOCR 455.

An integrative, hands-on experience in the theory and application of ecology principles to the soil environment.

SOCR 442 03(3-0-0). Forest and Range Soils. S. Prerequisite: None.

Soil and water relationships in forest and rangeland ecosystems; significant properties in their management.

SOCR 455 03(3-0-0). Soil Microbiology. F. Prerequisite: MIP 300 or SOCR 240.

Microbial activities in agricultural, forest, and grassland soils; in soil-plant relationships; and in maintenance of environmental quality.

SOCR 456 01(0-3-0). Soil Microbiology Laboratory. F. Prerequisite: SOCR 455 or concurrent registration.

Techniques used in study of ecology and activities of soil microorganisms.

*SOCR 460/*HORT 460 03(2-0-1). Plant Breeding. F. Prerequisite: BZ 350 or concurrent registration or LIFE 201A or concurrent registration or SOCR 330 or concurrent registration. Credit not allowed for both SOCR 460 and HORT 460.

Theory and practice of plant breeding using principles of genetics and related sciences.

*SOCR 461/*HORT 461 01(0-2-0). Plant Breeding Laboratory. F. Prerequisite: SOCR 460/HORT 460 or concurrent registration. Credit not allowed for both SOCR 461 and HORT 461.

Techniques and procedures used in public and commercial plant breeding programs.

SOCR 467 03(3-0-0). Soil and Environmental Chemistry. S. Prerequisite: CHEM 335.

Fundamental principles of soil chemistry with respect to environmental reactions between soils and other natural materials and priority pollutants.

SOCR 470 03(3-0-0). Soil Physics. F. Prerequisite: SOCR 240 or GEOL 232.

Physical properties of soils emphasizing mechanical composition, moisture, aeration, temperature, and structure related to management, plant growth.

SOCR 471 01(0-3-0). Soil Physics Laboratory. F. Prerequisite: SOCR 470 or concurrent registration.

Familiarization of techniques and equipment used in evaluation of soil physical properties.

*SOCR 475 03(3-0-0). Global Challenges in Plant and Soil Science. S. Prerequisite: SOCR 240 or GEOL 122; LIFE 102 or BZ 120.

Evaluation of case studies to define problems and develop solutions to address global challenges in plant and soil science.

SOCR 478 03(3-0-0). Environmental Soil Sciences. S. Prerequisite: SOCR 467 or concurrent registration; SOCR 470.

Chemical, biological, and physical aspects of prevention and remediation of soil and water pollution; environmental impact assessment.

SOCR 479 01(0-3-0). Environmental Soil Science Laboratory. S. Prerequisite: SOCR 478 or concurrent registration.

Laboratory and field studies of soil and groundwater contamination, including monitoring and remediation.

SOCR 486 Var[1-4]. Practicum. Prerequisite: Written consent of instructor.

Directed experiences in the application of soil and crop science principles.

SOCR 487 Var[1-12]. Internship.

SOCR 490 01(0-0-1). Hydrus-1D Workshop. S. Prerequisite: SOCR 470.

Using Hydrus-1D software for flow and transport of water, heat, and chemicals in soil.

SOCR 492 01(0-0-1). Seminar.

SOCR 495 Var. Independent Study.

SOCR 496 Var. Group Study.

SOCR 498 Var[1-6]. Undergraduate Research. Prerequisite: Written consent of instructor.

Research in soil and crop sciences.

SOCR 514/STAT 514 04(3-3-0). Agricultural Experimental Design and Analysis. S. Prerequisite: STAT 201 or STAT 301 or STAT 307. Credit allowed for only one of the following: SOCR 414, SOCR 514, STAT 350, or STAT 514.

Design and implementation of agricultural experiments and statistical analysis of resulting data.

SOCR 522 03(3-0-0). Micrometeorology. S. Prerequisite: Three credits in PH.

Microenvironments; physics of environmental variables; plant canopy microclimate; evapotranspiration; surface-atmosphere exchange; instrumentation.
SOCR 530/BSPM 530 01(1-0-0). Scientific Writing. S. Prerequisite: None. Credit not allowed for both SOCR 530 and BSPM 530.
Skills necessary to prepare complete scientific journal articles including writing, editing, and literature searching and assessment.

*SOCR 535 03(3-0-0). Origin and Evolution of Cultivated Plants. F. Prerequisite: SOCR 330.
Origin of crops from viewpoints of archaeology, history, botany, and taxonomy, and continued evolution of plants under cultivation.

*SOCR 540 03(3-0-0). Soil-Plant-Nutrient Relationships. S. Prerequisite: SOCR 350.
Soil and plant factors affecting nutrient uptake, mechanistic models of uptake, availability and functions of essential elements, diagnostic techniques.

*SOCR 550 03(3-0-0). Advanced Soil Genesis. S. Prerequisite: SOCR 440.
Modern concepts of specific mechanisms involved in formation of genetic soil groups and their relationship to environmental factors.

SOCR 567 04(3-0-1). Environmental Soil Chemistry. S. Prerequisite: CHEM 335. Credit not allowed for SOCR 467 and SOCR 567.
The chemistry of terrestrial environments and the interactions of soil constituents with bacteria, nutrients, and pollutants.

°SOCR 570 01(1-0-0). Plant Breeding for Drought Tolerance. F. Prerequisite: SOCR 330; SOCR 460. Offered as a nontraditional online course only through the Division of Continuing Education.
Principles and practices of evaluation, selection and cultivar development for crops in drought-stress environments with emphasis on agronomic crops. (NT-O)

SOCR 571 02(2-0-0). Foundations of Soil Science. S. Prerequisite: SOCR 240.
Importance of soils in ecology and earth system science with regard to the study and management of the soil resource.

+SOCR 577 03(2-2-0). Principles/Components: Precision Agriculture. F. Prerequisite: Three credits in SOCR or CS. Credit allowed for only one of the following: CIVE 377 or SOCR 377 or SOCR 577.
Principles and components of precision agriculture, including GPS, GIS, remote sensing, and their applications in soil and crop management. (S)

°SOCR 620 03(2-3-0). Modeling Ecosystem Biogeochemistry. F. Prerequisite: MATH 155 or MATH 160; LAND 220/LIFE 220 or SOCR 240 or ECOL 505.
Design and build biogeochemical process and ecosystem models with GUI-based software. Analyze and test models and interpret experimental data.

°SOCR 640 01(1-0-0). Crop Physiology. F. Prerequisite: BZ 440.
Developmental, physiological, and biochemical determinants of crop yields as controlled by genetic and environmental effects.

SOCR 650 01(1-0-0). Research Proposal Development. F. Prerequisite: Graduate standing.
Skills to develop and write an effective scientific research proposal.

°SOCR 670 03(2-2-0). Terrestrial Ecosystems Isotope Ecology. S. Prerequisite: None.
Isotopes distribution in biogeochemical cycles; research topics in biosphere-atmosphere interactions; lab experience with isotope techniques. Field trips required.

SOCR 675 01(1-0-0). Presentations for Scientific Audiences. F. Prerequisite: None.
Organization and presentation of scientific information to audiences in oral and poster format.


SOCR 720A-B 02(2-0-0). Advanced Plant Breeding. Prerequisite: HORT 460/SOCR 460; 3 credits in STAT.

*SOCR 725 03(2-2-0). Quantitative Inheritance in Plant Breeding. S. Prerequisite: None.
Quantitative genetic structure of populations, recognition of genetic, environmental variance. Methods of dealing with quantitatively inherited traits.

SOCR 730 01(1-0-0). Topics in Plant Breeding and Genetics. F. Prerequisite: None.
Current literature regarding mechanisms used for plant improvement.

*SOCR 731 01(1-0-0). Plant Breeding Data Management. F. Prerequisite: Three credits in computer science.
Principles and best practices for optimal data management for plant breeding and other data-intensive research programs.

*SOCR 740/BSPM 740 03(3-0-0). Plant Molecular Genetics. F. Prerequisite: BC 351; SOCR 330. Credit not allowed for both SOCR 740 and BSPM 740.
Advances in study of organization and function of nuclear and organelar genomes, gene expression in higher plants, and plant-microbe interactions.

*SOCR 755 03(3-0-0). Advanced Soil Microbiology. S. Prerequisite: MIP 624 or SOCR 455.
Ecology of soil microorganisms emphasizing population and activity relationships, nitrogen fixation, and microbe-pesticide interactions.

*SOCR 760 03(3-0-0). Advanced Soil Chemistry. F. Prerequisite: Four semesters of chemistry; one course in computer science; one semester of calculus.
Surface chemistry of soils, electrical double layer models of surface charge and potential, colloid stability, computer modeling of adsorption.

*SOCR 770 04(3-2-0). Advanced Soil Physics. S. Prerequisite: MATH 261 or SOCR 470.
Description and analysis of principles of storage and movement of water, solutes, heat, and gases in soils.

SOCR 784 Var. Supervised College Teaching.

SOCR 792 01(0-0-1). Seminar.

SOCR 795 Var. Independent Study.

SOCR 796 Var. Group Study.


° Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
SOWK 110 03(2-0-1). Contemporary Social Welfare. (GT-SS3, AUCC 3C) F, S, SS. Prerequisite: None. Principles, values and institutions of U.S. social welfare in context of human need within family, groups, and society.

SOWK 150 03(3-0-0). Introduction to Social Work. F, S. Prerequisite: PSY 100 or concurrent registration; SOC 100 or concurrent registration or SOC 105 or concurrent registration. Introduction to social work; history of social welfare in the U.S.; overview of knowledge, values, skills, practice settings, and populations served. (NT-T)

SOWK 233 03(3-0-0). Human Behavior in the Social Environment. F, S. Prerequisite: HDFS 101 or concurrent registration; SOWK 150 or concurrent registration.

Understanding human behavior theory relevant to social work practice.

SOWK 286A-B 03(0-3-2). Practicum. Prerequisite: SOWK 233 or concurrent registration.

Introductory social work practice skills in communication, relationship development, and professional behavior. A) Practicum I. B) Practicum II.

SOWK 300 03(3-0-0). Research in Applied Professions. F, S, SS. Prerequisite: Completion of AUCC 1B mathematics requirement.

Application of social science research methodology to applied professions including problem formulation, research design, and data collection.

SOWK 330 03(3-0-0). Human Diversity Practice Issues. F, S. Prerequisite: SOWK 233 or concurrent registration.

Knowledge about human differences and similarities essential for social work practice.

SOWK 340 03(0-0-3). Generalist Practice-Individuals and Families. F, S. Prerequisite: SOWK 286B or concurrent registration; progression into the major.

Knowledge and techniques used in applying the generalist planned change process to individual and family system assessments and interventions.

SOWK 341 03(0-0-3). Generalist Practice-Small Groups. F, S. Prerequisite: SOWK 340 or concurrent registration.

Within a generalist framework, focuses on the knowledge, skills, and competencies needed for the planned change process in groups.

SOWK 342 03(1-0-2). Generalist Practice-Organizations/Communities. F, S. Prerequisite: SOWK 340 or concurrent registration.

Knowledge regarding the planned change process with organizations and communities.

SOWK 350 03(0-0-3). Legal Issues in Human Services. SS. Prerequisite: None.

Legal principles, procedures, and issues relevant to social work including policy research and courtroom testimony. (NT-O)

SOWK 352/ETST 352 03(3-0-0). Indigenous Women, Children and Tribes. F. Prerequisite: None. Credit not allowed for both SOWK 352 and ETST 352.

Historical and contemporary lives of women, children, and tribal communities.


Application of practice processes with selected populations. A) Children and families. F, S. B) Juvenile offenders. F.

C) Adult offenders. S. D) Substance abusers. S. E) Social gerontology. F, S, SS. (NT-O)

SOWK 384 Var[1-5]. Supervised College Teaching. A maximum of 10 combined credits for all 384 and 484 courses are counted towards graduation requirements.

Assist instructor in teaching selected classes, group training, or discussion group leadership.

SOWK 410 03(2-0-1). Social Welfare Policy. F. S. Prerequisite: SOWK 342 or concurrent registration.

Issues and processes shaping social welfare institutions; definitions of social welfare policy; analytical framework for policy analysis.

SOWK 450/IE 450 03(3-0-0). International Social Welfare and Development. F. Prerequisite: None. Credit not allowed for both SOWK 450 and IE 450.

Framework of social welfare and development in international area; social need with focus on cultures/countries in transition.

SOWK 488 Var[5-10]. Field Placement. F, S, SS. Prerequisite: AHS 300 or concurrent registration; SOWK 330; SOWK 341; SOWK 342; SOWK 410 or concurrent registration. Maximum of 10 credits allowed in course.

Engagement, assessment, interventions, and evaluation at multiple levels of service as well as mastery of foundation practice roles. (S)

SOWK 492 03(2-0-1). Seminar. Prerequisite: SOWK 488 or concurrent registration.

Integrates theory with social work core competencies and practice behaviors while in field placement.

SOWK 495 Var[1-12]. Independent Study.

SOWK 496 Var[1-12]. Group Study.

SOWK 500 03(3-0-0). Principles and Philosophy of Social Work. F, S, SS. Prerequisite: Admission to the MSW program. Blended format is a partial-semester course.

Knowledge, values, history, and philosophy of social work. (NT-B)

SOWK 511 03(0-0-3). Generalist Practice-Small Client Systems. F. Prerequisite: SOWK 500 or concurrent registration; concurrent registration in SOWK 515.

Generalist practice perspective. Practice knowledge and skills related to intervention with individuals and families within a systems framework.

SOWK 512 01(0-0-3). Small Client Systems Skills Laboratory. F. Prerequisite: SOWK 511; concurrent registration in SOWK 588.

Application of communication and relationship skills for professional practice.

SOWK 515 04(3-0-1). Theoretical Foundations for Social Work. F, S. Prerequisite: SOWK 500 or concurrent registration. Blended format is a partial-semester course.

Socio-behavioral principles relevant to generalist social work practice. (NT-B)

SOWK 520 03(2-0-1). Social Welfare Policy Analysis. F. Prerequisite: Admission to the MSW program.

Historical analysis and impact of social welfare policy.

SOWK 550 03(2-0-1). Animal Assisted Therapy/Human-Animal Bond. SS. Prerequisite: None.

Nature of human-animal bond and animal assisted therapy as an intervention method.

SOWK 551 03(1-0-2). Fundamentals of Mediation. F, S, SS. Prerequisite: Bachelor’s degree.

Knowledge and skills essential to the successful application of mediation for a wide variety of interpersonal conflicts. (NT-O)

Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
SOWK 552 03(1-0-2). Conflict Management: Health and Elder Care. F, S, SS. Prerequisite: SOWK 551.
Knowledge, values, and skills necessary for the practice of conflict resolution in health and elder care settings. (NT-O)

SOWK 553 03(2-0-1). Multi-Party Conflict Resolution. F, S, SS. Prerequisite: SOWK 551.
Theories, models, and skills required for design and guidance of multi-party conflict resolution in group, community and organizational settings. (NT-O)

SOWK 554 03(1-0-2). Conflict Resolution in the Workplace. F, S, SS. Prerequisite: SOWK 551.
Knowledge, values, and skills necessary for the practice of conflict resolution in the workplace. (NT-O)

SOWK 556 03(1-0-2). Divorce and Family Mediation. F, S, SS. Prerequisite: SOWK 551.
Knowledge and skills essential to the practice of family mediation including divorce and child custody. (NT-O)

SOWK 560 03(2-0-1). Social Work Practice in Schools. S, SS. Prerequisite: M.S.W. or enrollment in M.S.W. program.
Knowledge and skills essential to practice of social work in educational settings. (NT-O)

SOWK 561 03(0-3-3). School/Community: People with Disabilities. F, SS. Prerequisite: None.
Teamwork approach to serving persons with special needs values, issues, and best practices related to creating desirable futures for them. (NT-O)

SOWK 571 03(2-0-1). Small Client Systems: Theory and Practice. SS. Prerequisite: admission to MSW program.
Theories and practice principles relevant to social work practice with small client systems.

SOWK 572 03(2-0-1). Large Client Systems: Theory and Practice. SS. Prerequisite: Admission to MSW Program.
Theories and practice principles relevant to social work practice with large client systems.

SOWK 588 Var[1-6]. Field Placement. S. Prerequisite: SOWK 512 or concurrent registration; SOWK 601 or concurrent registration; SOWK 611 or concurrent registration. Maximum of 6 credits allowed in course.
Supervised professional practice. ($) S

SOWK 590 Var[1-6]. Workshop.

SOWK 600 03(3-0-0). Methods of Research I. F. Prerequisite: Concurrent registration in SOWK 520; STAT 201.
Social work research: role of practitioners as consumers and initiators of research.

SOWK 601 03(3-0-0). Methods of Research II. S. Prerequisite: SOWK 600.
Data analysis, computer processing in social work research, and methods for evaluating one's own practice.

SOWK 602A-B 02(0-0-2). Macro-Level Social Work Practice Research. A) Prerequisite: SOWK 601; concurrent registration in SOWK 688. B) Prerequisite: SOWK 602A; concurrent registration in SOWK 688.
Design and implementation of needs assessment, program implementation, and community research.

SOWK 603A-B 02(0-0-2). Direct Practice Assessment and Evaluation.
Selection and application of techniques for monitoring and evaluating interventions with individuals, families, and groups. A) F. Prerequisite: SOWK 601; concurrent registration in SOWK 688. B) S. Prerequisite: SOWK 603A; concurrent registration in SOWK 688.

SOWK 611 03(1-0-2). Generalist Practice-Large Client Systems. S. Prerequisite: SOWK 511.
Practice knowledge and skills related to intervention with task groups, coalitions, organizations, and communities.

SOWK 630 02(1-0-1). Advanced Generalist Practice with Individuals. F. S. Prerequisite: SOWK 601; (SOWK 571; SOWK 572) or (SOWK 588; SOWK 611).
Knowledge and skills appropriate for clinical assessments and interventions with individuals focusing on contemporary theoretical constructs.

SOWK 631 02(1-0-1). Advanced Practice with Communities. F. S. Prerequisite: SOWK 601; (SOWK 571; SOWK 572) or SOWK 588.
Knowledge, skills, and values regarding the planned change process with communities.

SOWK 632 03(1-0-2). Advanced Practice: Manager/Administrator. F, S, SS. Prerequisite: SOWK 601; (SOWK 571; SOWK 572) or SOWK 588.
Knowledge, values, skills of organizational practice for a social work manager/administrator.

SOWK 633 02(0-0-2). Advanced Practice: Social Welfare Policy. F, S, SS. Prerequisite: SOWK 601; (SOWK 571; SOWK 572) or (SOWK 520; SOWK 588; SOWK 611).
Application of social welfare policy analysis models; normative aspects of policy analysis and assessment skills.

SOWK 634 03(1-0-2). Advanced Practice with Families and Groups. F, S, SS. Prerequisite: SOWK 630.
Apply engagement, assessment, and intervention skills, theoretical models, and evidence-bases practice approaches in work with families and groups.

SOWK 675 03(2-0-1). Psychopathology and Social Work. S, SS. Prerequisite: M.S.W. degree or current enrollment in an M.S.W. program.
Major forms of mental and emotional disorders and methods of diagnosis relevant to social work practice with individuals and families. (NT-O)

SOWK 684 Var[1-5]. Supervised College Teaching. Maximum of 10 credits allowed in course.

SOWK 688 Var[1-8]. Field Placement. F, S. Prerequisite: SOWK 511, SOWK 571; SOWK 572; SOWK 601. Maximum of 15 credits.
Integrates and applies competencies and measurable practice behaviors comprising knowledge, values, and skills in social work practice. ($) S

SOWK 695 Var. Independent Study. F, S, SS. (NT)

SOWK 696 Var. Group Study. F, SS. (NT)

SOWK 698 Var[1-6]. Research. Prerequisite: SOWK 601. Maximum of 6 credits allowed in course.


*SOWK 701 03(1-0-2). Contemporary Issues-Social Work Education. S. Prerequisite: Master’s degree in social work.
Issues and trends currently impacting professional education for social work practice.

*SOWK 702 03(1-0-2). Social Welfare Policies in Selected Countries. S. Prerequisite: SOWK 701.
Social welfare policy analysis and impact on professional social work practice.

*Alternate year offering (odd); * Alternate year offering (even); # Field trips; S Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
SOWK 703 03(1-0-2). Theoretical Analysis of Social Work Practice. SS. Prerequisite: SOWK 701.
   Social work practice theories; building, evaluating, and teaching for social work educators.

SOWK 704 03(1-0-2). Theoretical Foundations of Social Work. F.
   Prerequisite: SOWK 701.

SOWK 784 Var[1-3]. Supervised College Teaching.

SOWK 786 03(0-0-3). Research Practicum. F, S, SS. Prerequisite: EDRM 700; EDRM 704; SOWK 701.

SOWK 792 03(0-0-3). Seminar. F, S, SS. Prerequisite: SOWK 701.

SOWK 795 Var. Independent Study.


*SAlternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
**SPEECH COMMUNICATION COURSES**  
*Department of Communication Studies*  
*College of Liberal Arts*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCM 100 03(3-0-0)</td>
<td>Communication and Popular Culture. (GT-AH1, AUCC 3B)</td>
<td>F, S, SS</td>
<td>None.</td>
<td>Classical tradition of speech communication, its extension to broadcasting, and integration of both in contemporary culture. (NT-O)</td>
</tr>
<tr>
<td>SPCM 130 03(2-0-1)</td>
<td>Relational and Organizational Communication. (AUCC 3C)</td>
<td>F, S, SS</td>
<td>None.</td>
<td>Basic communication processes and skills central to relating and organizing in interpersonal, small group, and organizational contexts.</td>
</tr>
<tr>
<td>SPCM 200 03(3-0-0)</td>
<td>Public Speaking</td>
<td>F, S, SS</td>
<td>None.</td>
<td>Fundamentals of public speaking emphasizing content, organization, delivery, audience response. (NT-O)</td>
</tr>
<tr>
<td>SPCM 201 03(3-0-0)</td>
<td>Rhetoric in Western Thought. (GT-AH3, AUCC 3B)</td>
<td>F, S, SS</td>
<td>None.</td>
<td>Major concepts of Western rhetoric from Greece to modern times and their relationship to present-day approaches to communication.</td>
</tr>
<tr>
<td>SPCM 207 03(3-0-0)</td>
<td>Public Argumentation</td>
<td>F, S, SS</td>
<td>SPCM 200.</td>
<td>Key communication principles for democracy, including issue analysis, evidence, reasoning, decision-making, debate, dialogue, and deliberation.</td>
</tr>
<tr>
<td>SPCM 232 03(3-0-0)</td>
<td>Group Communication</td>
<td>F, S</td>
<td>SPCM 200.</td>
<td>Principles and methods of group communication emphasizing face-to-face and electronically mediated problem-solving and decision making.</td>
</tr>
<tr>
<td>SPCM 300 03(0-0-3)</td>
<td>Advanced Public Speaking</td>
<td>F, S, SS</td>
<td>SPCM 200.</td>
<td>Advanced technique in public speaking; emphasis on argument construction and refutation, style, and manuscript delivery.</td>
</tr>
<tr>
<td>SPCM 311 03(3-0-0)</td>
<td>Historical Speeches on American Issues.</td>
<td>F</td>
<td>CO 150; minimum of 30 credits.</td>
<td>Significant speeches and speakers as they reflected and affected American issues from colonial period through early 20th century.</td>
</tr>
<tr>
<td>SPCM 331 03(3-0-0)</td>
<td>Nonverbal Communication</td>
<td>S</td>
<td>None.</td>
<td>Non-language symbols in communication; systems and functions of nonverbal communication behaviors.</td>
</tr>
<tr>
<td>SPCM 332 03(3-0-0)</td>
<td>Interpersonal Communication Skills</td>
<td>F, S, SS</td>
<td>None.</td>
<td>Analysis, exploration, and skill enhancement strategies for interpersonal communication in friendship, couple, family, and business relationships.</td>
</tr>
<tr>
<td>SPCM 333 03(3-0-0)</td>
<td>Professional Communication</td>
<td>F, S</td>
<td>SPCM 200.</td>
<td>Technological, interpersonal, and ethical dimensions of professional communication, emphasizing interviews, teams, and presentations at work.</td>
</tr>
<tr>
<td>SPCM 334 03(3-0-0)</td>
<td>Co-Cultural Communication</td>
<td>F, SS</td>
<td>None.</td>
<td>Cultural concerns of communication among co-cultures of United States; diversity; self-awareness as cultural imperative for enhanced communication.</td>
</tr>
<tr>
<td>SPCM 335 03(3-0-0)</td>
<td>Gender and Communication</td>
<td>F</td>
<td>None.</td>
<td>Analysis and exploration of communication as it relates to gender and women’s and men’s roles and identities. (NT-O)</td>
</tr>
<tr>
<td>SPCM 341 03(3-0-0)</td>
<td>Evaluating Contemporary Television</td>
<td>F</td>
<td>None.</td>
<td>Rhetorical standards applied to content, ethical, and artistic aspects of American televised discourse; emphasizing nonentertainment programming. (NT-O)</td>
</tr>
<tr>
<td>SPCM 342 03(3-0-0)</td>
<td>Critical Media Studies</td>
<td>F, S</td>
<td>SPCM 100.</td>
<td>Analysis of communication media; history; structure, regulation, policy, and impact upon society. (NT-O)</td>
</tr>
<tr>
<td>SPCM 346 03(2-2-0)</td>
<td>Virtual Culture and Communication</td>
<td>F, S</td>
<td>SPCM 100 or SPCM 342.</td>
<td>Rhetorical theory applied to planning, producing, and evaluating computer-mediated messages.</td>
</tr>
<tr>
<td>SPCM 347 03(3-0-0)</td>
<td>Visual Communication</td>
<td>S</td>
<td>SPCM 100 or SPCM 342.</td>
<td>Media/visual aesthetics and literacy and the symbolic and affective dimensions of the codes, conventions, and formulas of media.</td>
</tr>
<tr>
<td>SPCM 349 03(3-0-0)</td>
<td>Freedom of Speech</td>
<td>F, S</td>
<td>None.</td>
<td>Historical and philosophical precendents to freedom of speech; development of free speech principles in the U.S.; ethical obligations of speakers. (NT-O)</td>
</tr>
<tr>
<td>SPCM 350 03(2-3-0)</td>
<td>Evaluating Contemporary Film</td>
<td>F</td>
<td>None.</td>
<td>Theory and development of film criticism; application of critical approaches to modern fiction and nonfiction film. (NT-O)</td>
</tr>
<tr>
<td>SPCM 354 03(2-3-0)</td>
<td>History and Appreciation of Film</td>
<td>F</td>
<td>SPCM 350 or concurrent registration.</td>
<td>Screening and evaluation of landmark fiction and nonfiction films; assessment of cinema as an art form and a social force.</td>
</tr>
<tr>
<td>SPCM 356 03(2-3-0)</td>
<td>Asians in the U.S. Media</td>
<td>S</td>
<td>SPCM 342 or SPCM 350 or concurrent registration.</td>
<td>Asian representations in the U.S. media from the 19th century to the present.</td>
</tr>
<tr>
<td>SPCM 357 03(2-3-0)</td>
<td>Film and Social Change</td>
<td>F, S, SS</td>
<td>SPCM 350 or concurrent registration.</td>
<td>Ways in which the medium of motion pictures has sparked significant social changes at home and abroad. (NT-O)</td>
</tr>
<tr>
<td>SPCM 358 03(2-3-0)</td>
<td>Gender and Genre in Film</td>
<td>S</td>
<td>SPCM 350 or concurrent registration.</td>
<td>Gender relations in film genres.</td>
</tr>
<tr>
<td>SPCM 378 03(0-0-3)</td>
<td>Virtual Workplace Communication</td>
<td>F, S, SS</td>
<td>None.</td>
<td>Interpersonal/organizational dimensions and communicative processes underpinning virtual/remote/distributed workers and workplaces. (NT-O)</td>
</tr>
<tr>
<td>SPCM 384 Var[1-3]</td>
<td>Supervised College Teaching</td>
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<td></td>
<td>A maximum of 10 combined credits for all 384 and 484 courses are counted towards graduation requirements. Open only to undergraduate students who are invited to assist in teaching selected courses.</td>
</tr>
</tbody>
</table>

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SPCM 387 01(1-0-0). Communication Internship. Prerequisite: SPCM 100 or SPCM 342; SPCM 200; SPCM 201; SPCM 207; 2.000 GPA.

SPCM 401 03(3-0-0). Rhetoric in Social Movements. F. Prerequisite: None.
Case studies of campaigns and social movements; genesis, leadership, and use of traditional and electronically mediated rhetoric to achieve objectives.

SPCM 407 03(3-0-0). Public Deliberation. F, S. Prerequisite: SPCM 200; SPCM 207.
Communication in collaborative decision-making and community problem-solving, examined through the lens of deliberative democracy.

SPCM 408 03(3-0-0). Applied Deliberative Techniques. F, S. Prerequisite: Written consent of instructor.
Skills development and direct experience in convening, facilitating, and reporting public forums tied to Center for Public Deliberation activities.

SPCM 411 03(3-0-0). Contemporary Speeches on American Issues. S. Prerequisite: CO 150; minimum of 30 credits.
Significant speeches and speakers as they reflect and affect issues, 1930 to present.

SPCM 412 03(3-0-0). Evaluating Contemporary Rhetoric. S. Prerequisite: CO 150; minimum of 30 credits.
Exploration and evaluation of contemporary persuasive communication in order to understand and assess a variety of forms of messages and symbols.

SPCM 415 03(3-0-0). Rhetoric and Civility. F. Prerequisite: CO 150; minimum of 30 credits.
Relationship between rhetoric and civility historically and in contemporary times.

SPCM 420 03(3-0-0). Political Communication. F. Prerequisite: None.
Rhetoric of political campaigns. (NT-O)

SPCM 429 03(3-0-0). Environmental Discourse. F, S. Prerequisite: None.
Environmental communication in advocacy campaigns, media representations of science, encounters with nature, and public policy.

SPCM 431 03(3-0-0). Communication, Language, and Thought. S. Prerequisite: None.
Influence of rhetoric, ranging from spoken language to electronically mediated communication, on human understanding and Western thought.

SPCM 433 03(3-0-0). Communication in Organizations. F. Prerequisite: Completion of AUCC category 2, Advanced Writing; minimum of 30 credits.
Communication theory and strategy for empowerment of non-supervisory and supervisory personnel.

SPCM 434 03(3-0-0). Intercultural Communication. F, S, SS. Prerequisite: CO 150; minimum of 30 credits.
Cultural influences on communication between people of different nations; communication rules/norms in specific cultures; cultural adaptation.

SPCM 436 03(3-0-0). Conflict Management and Communication. S. Prerequisite: None.
Theories and principles of communication in conflict management; application to conflict resolution situations.

SPCM 437 03(3-0-0). Studies in Persuasion. S. Prerequisite: None.
Rhetorical and behavioral theories of persuasion applied to persuasive practice in public and interpersonal arenas of social influence.

SPCM 454/ETST 454 03(2-2-0). Chicano/a Film and Video. F. Prerequisite: None. Credit not allowed for both SPCM 454 and ETST 454.
Emergence of Chicano/a cinema from a place of displacement, resistance, and affirmation found in contemporary Chicano/a film, video.

SPCM 455/LB 455 03(2-3-0). Narrative Fiction Film as a Liberal Art. S. Prerequisite: Senior standing. Credit not allowed for both SPCM 455 and LB 455.
Narrative fiction film and its role in human history, culture, and social interaction.

SPCM 479 03(3-0-0). Communication Studies Capstone. F, S. Prerequisite: SPCM 100; SPCM 200; SPCM 201; SPCM 207; seniors in Communication Studies majors only.
Synthesis of central issues in Communication Studies; examination of their relevance to students' professional, personal, and civic endeavors.

SPCM 486 Var. Practicum.
Directed experience of communication techniques and procedures in the community with periodic faculty consultation.

SPCM 495 Var. Independent Study.

SPCM 496 Var. Group Study.

SPCM 508 03(0-0-3). Deliberative Theory and Practice. S. Prerequisite: Graduate standing or SPCM 408.
Survey of current theory and practice connected to deliberative democracy.

SPCM 538 03(3-0-0). Communicating in the Health Clinic. S. Prerequisite: None. Organizational, interpersonal, and intercultural dimensions of communicating in public health clinical settings.

SPCM 540 03(3-0-0). Rhetoric, Race and Identity. F. Prerequisite: Graduate standing or SPCM 412 and 12 additional 300-400 SPCM credits. Credit not allowed for both SPCM 540 and ETST 540.
Critical race theory and its relevance to rhetorical studies.

SPCM 570 03(3-0-0). Instructional Communication Theory, Practice. F, S, SS. Prerequisite: None.
Communication theory and research in instructional contexts. Designed for current or prospective teachers. (NT-O)

*SPCM 592 03(0-0-3). Seminar-Topics in Speech Communication. S. Prerequisite: Graduate standing or fifteen 300-400 level credits in communication studies or English.

SPCM 595 03(3-0-0). History of Rhetorical Theory. F. Prerequisite: Fifteen 300- and 400-level credits in communication studies and/or English.
Rhetorical theories and theorists from the classical period to the present.

SPCM 604 03(3-0-0). Rhetoric of Everyday Life. S. Prerequisite: Graduate standing or SPCM 412 and 12 additional 300-400 SPCM credits.
Contemporary theories of rhetoric and of everyday life.

*SPCM 611 03(3-0-0). Topics in Public Address. F. Prerequisite: Graduate standing or either SPCM 311 or SPCM 411 with additional 300- and 400-level credits in communication studies, history, or English.
Theoretical and methodological issues in public address research; analysis of public discourse of selected movements or periods in U.S. history.

SPCM 612 03(3-0-0). Rhetorical Criticism. F. Prerequisite: Fifteen 300-400 level credits in communication studies and/or journalism.
Traditional and contemporary methods for analyzing persuasive discourse.

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SPCM 620 03(0-0-3). Rhetoric and Public Affairs. F. Prerequisite: Admission to graduate school.
Rhetoric’s role in contemporary policies and civil society.

SPCM 623 03(3-0-0). Feminist Theories of Discourse. F. Prerequisite: Admission to graduate school.
Exploration and evaluation of contemporary feminist theories of rhetoric and discourse.

SPCM 632 03(0-0-3). Theories of Interpersonal Communication. F. Prerequisite: Admission to graduate school.
Theories of communication in development, maintenance, and deterioration of friendship, couple, family, group, and business relationships.

SPCM 633 03(0-0-3). Discourse, Work, and Organization. S. Prerequisite: Admission to graduate school.
How organizing processes and discursive practices create, maintain, and destroy diverse forms of work in society.

°SPCM 634 03(0-0-3). Communication and Cultural Diversity. S. Prerequisite: Admission to graduate school.
Ethnographic approach to communication issues and concerns in a global context.

SPCM 638 03(3-0-0). Communication Research Methods. S. Prerequisite: None.
Historical and philosophical context of communication research; relationship between theory and method; dominant forms of communication research.

SPCM 639 03(3-0-0). Communication Theory. F. Prerequisite: Graduate standing or fifteen 300- and 400-level credits in communication studies and/or English.
Examination of communication philosophies and perspectives; analysis of modern theories of face-to-face communication.

SPCM 646 03(3-0-0). Media Theory. F. Prerequisite: Fifteen 300-400 level credits in communication studies, English, or journalism.
Survey of the broad range of rhetorical/qualitative theories that inform media studies.

°SPCM 647 03(0-0-3). Media Industries. F. Prerequisite: Graduate standing or fifteen 300-400 level credits in communication studies or English.
Political economy of the media both in the U.S. and globally, including how the media system operates and with what effects.

°SPCM 648 03(3-0-0). Media Texts. S. Prerequisite: Graduate standing or fifteen 300- and 400-level credits in communication studies or English.
Practical and theoretical implications for criticism in treating media products as texts; various approaches to textual or discourse analysis.

°SPCM 649 03(3-0-0). Media Audiences. F. Prerequisite: Graduate standing or fifteen 300- and 400-level credits in communication studies or English.
Theoretical and methodological issues concerning how audiences use and interpret media.

°SPCM 650 03(0-0-3). Contemporary Issues in Media. S. Prerequisite: Admission to graduate school.
Ever-changing media culture and landscape and how it affects personal, professional, and public lives.

SPCM 675 03(3-0-0). Speech Communication Pedagogy. F. Prerequisite: Admission to communication studies master’s program.
Instructional practices and theories in speech.

SPCM 684 Var[1-3]. Supervised College Teaching.

SPCM 686 Var. Practicum. F, S, SS. Prerequisite: Graduate standing; SPCM 408; SPCM 508 or concurrent registration.
Direction of communication studies fieldwork connected to the CSU Center for Public Deliberation under professional supervision.

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### APPLIED STATISTICS COURSES

**Department of Statistics**  
**College of Natural Sciences**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAA 551</td>
<td>Regression Models and Applications</td>
<td>F. Prerequisite: Admission to the M.A.S. program or written consent of instructor. This is a partial-semester course.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Estimated/hypothesis testing methods: t-test, ANOVA, regression, residual analyses, transformations, goodness of fit, interactions, confounding. (NT-V)</td>
<td></td>
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</tr>
<tr>
<td>STAA 552</td>
<td>Generalized Regression Models</td>
<td>F. Prerequisite: STAA 551 or concurrent registration or STAT 540. This is a partial-semester course.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nonlinear regression, iteratively reweighted least squares, dose-response models, count data, multi-way tables, survival analysis. (NT-V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAA 553</td>
<td>Experimental Design</td>
<td>S. Prerequisite: STAA 551 or STAT 540; STAA 562 or STAT 530. This is a partial-semester course.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Design/analysis of experiments. Emphasis on balanced design; use of computing packages SAS and R. Example based presentation, rather than theoretical. (NT-V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAA 554</td>
<td>Mixed Models</td>
<td>S. Prerequisite: STAA 553 or concurrent registration. This is a partial-semester course.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Topics in linear, generalized linear, and nonlinear models with fixed and random predictors, balanced and unbalanced cases. (NT-V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAA 556</td>
<td>Statistical Consulting</td>
<td>SS. Prerequisite: 28 credits of STAA coursework or written consent of instructor. Effective consulting to meet with clients, analyze real data, and prepare reports. (NT-V)</td>
<td></td>
</tr>
<tr>
<td>STAA 561</td>
<td>Probability with Applications</td>
<td>F. Prerequisite: Admission to the M.A.S. program or written consent of instructor. This is a partial-semester course.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Random variables, continuous and discrete distributions, expectations, joint and conditional distributions, transformations. (NT-V)</td>
<td></td>
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</tr>
<tr>
<td>STAA 562</td>
<td>Mathematical Statistics with Applications</td>
<td>F. Prerequisite: STAA 561 or concurrent registration or STAT 520 or written consent of instructor. This is a partial-semester course.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theory and applications of estimations, testing, and confidence intervals. Computer simulations, sampling from the normal distribution. (NT-V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAA 565</td>
<td>Quantitative Reasoning</td>
<td>F. Prerequisite: Concurrent registration in STAA 551 or written consent of instructor. This is a partial-semester course.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confounding, types of bias such as selection bias and regression effect bias, Simpson’s paradox, experiments versus observational studies. (NT-V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAA 566</td>
<td>Computational and Graphical Methods</td>
<td>F. Prerequisite: Admission to the M.A.S. program or written consent of instructor. This is a partial-semester course.</td>
<td></td>
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<tr>
<td></td>
<td>Exploratory data analysis using graphics, effective communication with graphs, data reduction methods. (NT-V)</td>
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<tr>
<td>STAA 567</td>
<td>Computational and Simulation Methods</td>
<td>F. Prerequisite: STAA 551 or concurrent registration or STAT 540; STAA 561 or concurrent registration or STAT 520 or written consent of instructor. This is a partial-semester course.</td>
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<tr>
<td></td>
<td>Methods to estimate probability distribution of nonstandard test statistics, find estimators, test hypotheses, and compute confidence intervals. (NT-V)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Alternate year offering (odd);  
* Alternate year offering (even);  
+ Field trips;  
$ Special course fee;  
NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD);  
GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
STATISTICS COURSES
Department of Statistics
College of Natural Sciences

STAT 101 03(2-2-0). Activity Based Statistics. F, SS. Prerequisite: None. Credit not allowed for students who have already taken any 200-level or higher statistics course. Population, sample, variation, data, relationships, probability and risk, polls, prediction, margin of error, critical assessment of studies.

STAT 110 03(2-0-1). Statistical Thinking: Concepts and Applications. S. Prerequisite: None. Credit not allowed for students who have already taken any 200-level or higher statistics course. Use of statistical tools in real-life problems using computer packages; integration of critical thinking skills using case studies.

STAT 192 01(0-0-1). First-Year Seminar in Statistics. S. Prerequisite: None. Explore careers in statistics and the variety of problems encountered by statisticians.

STAT 201 03(2-0-1). General Statistics. F, S, SS. Prerequisite: Mathematics placement exam or one credit of 100-level mathematics. Credit not allowed for both STAT 201 and STAT 204. Intended as a one-semester terminal course. Graphs, descriptive statistics, confidence intervals, hypothesis tests, correlation and simple regression, tests of association.

STAT 204 03(2-0-0). Statistics for Business Students. F, S, SS. Prerequisite: Mathematics placement exam or one credit of 100-level mathematics. Credit not allowed for both STAT 204 and STAT 201. Surveys, sampling, descriptive statistics, confidence intervals, contingency tables, control charts, regression, exponential smoothing, forecasting.

STAT 301 03(3-0-0). Introduction to Statistical Methods. (GT-MA1) F, S, SS. Prerequisite: MATH 117 or MATH 118 or MATH 124 or MATH 125 or MATH 126 or MATH 141 or MATH 155 or MATH 160. Credit allowed for only one of the following: ERHS 307, STAT 301, STAT 307, STAT 311, or STAT 315. Techniques in statistical inference; confidence intervals, hypothesis tests, correlation and regression, analysis of variance, chi-square tests. (NT-V).

STAT 303/ECE 303 03(3-0-0). Introduction to Communications Principles. F. Prerequisite: ECE 311 or concurrent registration; MATH 261. Credit not allowed for both STAT 303 and ECE 303. Basic concepts in design and analysis of communication systems.

STAT 305 03(3-0-0). Sampling Techniques. F. Prerequisite: STAT 301 or STAT 307 or STAT 311 or STAT 315. Sample designs: simple random, stratified, systematic, cluster, unequal probability, two phase; methods of estimation and sample size determination.

STAT 307 03(3-0-0). Introduction to Biostatistics. F, S, SS. Prerequisite: MATH 117 or MATH 118 or MATH 124 or MATH 125 or MATH 126 or MATH 141 or MATH 155 or MATH 160. Credit allowed for only one of the following: ERHS 307, STAT 301, STAT 307, STAT 311, or STAT 315. Biostatistical methods; confidence intervals, hypothesis tests, simple correlation and regression, one-way analysis of variance.

STAT 311 03(3-0-0). Statistics for Behavioral Sciences I. F, S, SS. Prerequisite: MATH 117 or MATH 118 or MATH 124 or MATH 125 or MATH 126 or MATH 141 or MATH 155 or MATH 160. Credit allowed for only one of the following: ERHS 307, STAT 301, STAT 307, STAT 311, or STAT 315. Classification, descriptive statistics; inference, testing, estimation; categorical data analysis; odds ratio. (NT-O)

STAT 312 03(3-0-0). Statistics for Behavioral Sciences II. F, S, SS. Prerequisite: STAT 311. One-way analysis of variance, factorial designs, blocked designs, multiple comparisons of means, and multiple regression. (NT-O)

STAT 315 03(3-0-0). Statistics for Engineers and Scientists. F, S, SS. Prerequisite: MATH 161 or MATH 255. Credit allowed for only one course: ERHS 307, STAT 301, STAT 307, STAT 311, STAT 315. Calculus-based probability and statistics: distribution theory, estimation, hypothesis testing, applications to engineering and the sciences. (NT-V)

STAT 321 03(3-0-0). Elementary Probabilistic-Stochastic Modeling. S. Prerequisite: CS 150 or CS 160 or MATH 151 or MATH 152; MATH 155 or MATH 160. Probabilistic and stochastic models of real phenomena; distributions, expectations, correlations; averages; simple Markov chains and random walks.

STAT 340 03(3-0-0). Multiple Regression Analysis. S, SS. Prerequisite: STAT 301 or STAT 307 or STAT 311 or STAT 315. Estimation and testing for linear, polynomial, and multiple regression models; analysis of residuals; selection of variables; nonlinear regression.

STAT 350 03(3-0-0). Design of Experiments. F, SS. Prerequisite: STAT 301 or STAT 307 or STAT 311 or STAT 315. Analysis of variance, covariance; randomization; completely randomized, randomized block, Latin-square, split-plot, factorial and other designs.

STAT 372 03(3-0-0). Data Analysis Tools. F. Prerequisite: STAT 301 or STAT 307 or STAT 311 or STAT 315. Data analysis principles and practice, statistical packages and computing; ANOVA, regression and categorical data methods.

STAT 420 03(3-0-0). Probability and Mathematical Statistics I. F. Prerequisite: MATH 255 or MATH 261. Probability, random variables, distribution functions, and expectations; joint and conditional distributions and expectations; transformations.

STAT 430 03(3-0-0). Probability and Mathematical Statistics II. S. Prerequisite: STAT 420. Theories and applications of estimation, testing, and confidence intervals; sampling distributions including normal, gamma, beta X², and F.

STAT 460 03(3-0-0). Applied Multivariate Analysis. S. Prerequisite: STAT 340. Principles for multivariate estimation and testing; multivariate analysis of variance, discriminant analysis; principal components, factor analysis. (NT-V)

STAT 472 03(0-0-3) Statistical Consulting. S. Prerequisite: STAT 372. Statistical consulting skills including data analysis, problem solving, report writing, oral communication, and planning experiments.

STAT 495 Var. Independent Study. Prerequisite: Written consent of instructor.

STAT 498 Var[1-3]. Undergraduate Research in Statistics. Prerequisite: Written consent of instructor. Research skills and techniques; include both oral and written communication of results.

STAT 500 01(0-2-0). Statistical Computer Packages. S. Prerequisite: STAT 340; STAT 350. Comparison, evaluation, and use of computer packages for univariate and multivariate statistical analyses.

STAT 501 01(1-0-0). Statistical Science. F. Prerequisite: None. Overview of statistics: theory; use in agriculture, business, environment, engineering; modeling; computing; statisticians as researchers/consultants.

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STAT 511 04(3-0-1). Design and Data Analysis for Researchers I. F.
Statistical methods for experimenters and researchers emphasizing design and analysis of experiments. (NT-V)

STAT 512 04(3-0-1). Design and Data Analysis for Researchers II. S.
Statistical methods for experimenters and researchers emphasizing design and analysis of experiments.

STAT 514/SOCR 514 04(3-3-0). Agricultural Experiment Design and Analysis. S. Prerequisite: STAT 201 or STAT 301 or STAT 307. Credit allowed for only one of the following: SOCR 414, SOCR 514, STAT 350, or STAT 514. Design and implementation of agricultural experiments and statistical analysis of resulting data.

STAT 515 03(2-2-0). Statistical Science and Process Improvement. S. Prerequisite: QNT 570 or STAT 511 or STAT 540. Statistical methods in process design; statistical methods; measurement processes; customer evaluation.

STAT 520 04(4-0-0). Introduction to Probability Theory. F.
Probability, random variables, distributions, expectations, generating functions, limit theorems, convergence, random processes.


STAT 522 03(3-0-0). Stochastic Processes II. F, SS. Prerequisite: STAT 521. Martingales and applications, random walks, fluctuation theory, diffusion processes, point processes, queueing theory.

STAT 523/NR 523 03(3-0-0). Quantitative Spatial Analysis. S. Prerequisite: STAT 301 or STAT 307. Credit not allowed for both STAT 523 and NR 523. Techniques in spatial analysis: point pattern analysis, spatial autocorrelation, trend surface and spectral analysis.

STAT 524/FIN 524 03(3-0-0). Financial Statistics. F.
Introduction to Probability Theory. F. Prerequisite: MATH 369; MATH 261; MATH 317. Credit not allowed for both STAT 524 and FIN 524. Probability and statistical concepts and quantitative tools used in financial modeling and decision-making. (NT-O)

STAT 525 03(3-0-0). Analysis of Time Series I. F. Prerequisite: STAT 430. Trend and seasonality, stationary processes, Hilbert space techniques, spectral distribution function, fitting ARIMA models, linear prediction.

STAT 526 03(3-0-0). Analysis of Time Series II. S, SS. Prerequisite: STAT 525. Spectral analysis; the periodogram; spectral estimation techniques; multivariate time series; linear systems, optimal control, Kalman filtering, prediction.

STAT 530 03(3-0-0). Mathematical Statistics. S. Prerequisite: STAT 520. Sampling distributions, estimation, testing, confidence intervals; exact and asymptotic theories of maximum likelihood and distribution-free methods.

STAT 540 03(3-0-0). Data Analysis and Regression. F. Prerequisite: Six credits of upper-division statistics courses. Introduction to multiple regression and data analysis with emphasis on graphics and computing.

STAT 544/ERHS 544 03(3-0-0). Biostatistical Methods for Quantitative Data. S. Prerequisite: STAT 301 or STAT 307. Credit not allowed for both STAT 544 and ERHS 544. Regression and analysis of variance methods applied to both observational studies and designed experiments in the biological sciences.

STAT 547/CIVE 547 03(3-0-0). Statistics for Environmental Monitoring. S. Prerequisite: STAT 301. Credit not allowed for both STAT 547 and CIVE 547. Applications of statistics in environmental pollution studies involving air, water, or soil monitoring; sampling designs; trend analysis; censored data.

STAT 548/CS 548 04(3-2-0). Bioinformatics Algorithms. F.
Prerequisite: STAT 301 or STAT 307 or STAT 315; knowledge of a contemporary programming language. Computational methods for analysis of DNA/protein sequences and other biological data.

STAT 560 03(3-0-0). Applied Multivariate Analysis. F, S. Prerequisite: STAT 520; STAT 540. Multivariate analysis of variance; principal components; factor analysis; discriminant analysis; cluster analysis. (NT-O/V)

STAT 570 03(3-0-0). Nonparametric Statistics. S, SS. Prerequisite: STAT 430. Distribution and uses of order statistics; nonparametric inferential techniques, their uses and mathematical properties. (NT-V)

STAT 586 01(0-2-0). Practicum in Consulting Techniques. F, S, SS.
Prerequisite: STAT 540. Instruction on planning studies, writing reports, and interacting with clients. Attend and critique consulting sessions.

STAT 592 01(0-0-1). Seminar.

STAT 600 03(3-0-0). Statistical Computing. F, S. Prerequisite: STAT 520; STAT 540. Optimization and integration in statistics; Monte Carlo methods; simulation; bootstrapping; density estimation; smoothing.

STAT 604/BUS 604 02(2-0-0). Managerial Statistics. F. Prerequisite: Admission to the MBA Program. Credit not allowed for both STAT 604 and BUS 604. Introduction to statistical thinking and methods used to support managerial-decision making. (NT-V)

STAT 605 03(3-0-0). Theory of Sampling Techniques. S. Prerequisite: STAT 301 or STAT 307 or STAT 311 or STAT 315; STAT 430. Survey designs; simple random, stratified, cluster samples; theory of estimation; optimization techniques for minimum variance or costs.

STAT 640 04(4-0-0). Design and Linear Modeling I. S. Prerequisite: MATH 369; STAT 540. Introduction to linear models; experimental design; fixed, random, and mixed models.

STAT 645 03(3-0-0). Categorical Data Analysis and GLIM. S. Prerequisite: Concurrent registration in STAT 640. Generalized linear models, binary and polytomous data, log linear models, quasi-likelihood models, survival data models.

STAT 650 03(3-0-0). Design and Linear Modeling II. F. Prerequisite: STAT 640. Mixed factorials; response surface methodology; Taguchi methods; variance components.

*STAT 673/FW 673 03(3-0-0). Hierarchical Modeling in Ecology. F.
Prerequisite: ESS 575 or STAT 420. Credit not allowed for both STAT 673 and FW 673. Hierarchical ecological modeling using common forms of data in fish and wildlife studies and emphasizing spatial and temporal aspects of analysis.
STAT 675A-L Var[1-3]. Topics in Statistical Methods. F, S, SS.
Prerequisite: STAT 430.
D) Computer intensive methods. F) Robustness and nonparametric methods.
(NT-O) L) Medical/pharmaceutical statistical methods (NT-V).

STAT 684 Var[1-3]. Supervised College Teaching. Prerequisite:
Enrollment in M.S./Ph.D. program in statistics.
Guidance and instruction in effective teaching of college courses in statistics.

STAT 695 Var. Independent Study.


STAT 720 04(4-0-0). Probability Theory. S. Prerequisite: MATH 517;
STAT 520.
Measure theoretic probability, characteristic functions; convergence;
laws of large numbers; central limit, extreme value, asymptotic theory.

STAT 721 03(3-0-0). Applied Probability and Stochastic Processes I.
F, S. Prerequisite: STAT 720.
General theory of processes; Markov processes in discrete,
continuous time; review of martingales, random walks; renewal and regenerative processes.

STAT 722 03(3-0-0). Applied Probability and Stochastic Processes II.
F, S, SS. Prerequisite: STAT 720.
Brownian motion, diffusion, stochastic differential equations; weak
convergence, central limit theorems. Applications in engineering, natural
sciences.

STAT 725 03(3-0-0). Time Series and Stationary Processes. F, S, SS.
Prerequisite: STAT 720; STAT 730.
Spectral theory of multivariate stationary processes; estimation,
testing for spectral, linear, AR-MA representations; best linear
predictors, filters.

STAT 730 04(4-0-0). Advanced Theory of Statistics I. F. Prerequisite:
STAT 530; STAT 720.
Minimal sufficiency, maximal invariance; Neyman-Pearson theory;
Fisher, Kullback-Leibler information; asymptotic properties of
maximum-likelihood methods.

STAT 731 03(3-0-0). Advanced Theory of Statistics II. S, SS.
Prerequisite: STAT 730.
Decision-theory model; Bayes, e-Bayes, complete, and admissible
classes; applications to sequential analysis and design of experiments.

STAT 740 03(3-0-0). Advanced Statistical Methods. F, S. Prerequisite:
STAT 640; concurrent registration in STAT 730.
Generalized additive models; recursive partitioning regression and
classification; graphical models and belief networks; spatial statistics.

STAT 750 03(3-0-0). Advanced Theory of Design. F, S. Prerequisite:
STAT 650.
Information theory; design evaluation, factorial designs and optimal
designs, orthogonal and balanced arrays, designs with discrete/
continuous factors.

STAT 760 03(3-0-0). Theory of Multivariate Statistics. F, SS. Prerequisite:
STAT 640; concurrent registration in STAT 730.
Theory of multivariate normal; maximum-likelihood inference,
union-intersection testing for single sample; theory of a multivariate
linear model.

STAT 770 03(3-0-0). Approximation Theory and Methods. F, S.
Prerequisite: STAT 730.
Edgeworth expansions, saddlepoint methods; applications of weak
convergence and other approximation methods in mathematical
statistics.

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University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TH 141</td>
<td>Introduction to Theatre</td>
<td>None</td>
<td>Theatre as an art and one of the humanities, its impact upon society, and its relationship to other art forms. ($)</td>
</tr>
<tr>
<td>TH 149</td>
<td>Movement for Actors I</td>
<td>TH 141; TH 150 or concurrent registration.</td>
<td>A broad survey of different movement theories from Asia, Africa, and Europe. ($)</td>
</tr>
<tr>
<td>TH 150</td>
<td>Introduction to Performance</td>
<td>None</td>
<td>Imagin as the actor’s primary resource: acting exercises, compositions, improvisations to acquire the basic approach to text through action.</td>
</tr>
<tr>
<td>TH 160</td>
<td>Introduction to Production Design</td>
<td>None</td>
<td>Concepts and practices in the visual arts of the theatre; studio processes and technical production; elementary work in theatre design and production.</td>
</tr>
<tr>
<td>TH 161</td>
<td>Technical Theatre: Stagecraft</td>
<td>TH 160</td>
<td>Skills and craft of technical theatre. Knowledge of tools, materials, and techniques essential to production realization. ($)</td>
</tr>
<tr>
<td>TH 163</td>
<td>Costume Construction for the Theatre</td>
<td>TH 160</td>
<td>Technical side of costum ing for live stage performances with an emphasis on all aspects of construction. ($)</td>
</tr>
<tr>
<td>TH 175</td>
<td>Storytelling</td>
<td>TH 141; TH 150</td>
<td>Study and practice of storytelling. ($)</td>
</tr>
<tr>
<td>TH 186</td>
<td>Theatre Practicum I</td>
<td>None</td>
<td>This is a partial-seminar course. Practical experience in mounting theatrical productions. ($)</td>
</tr>
<tr>
<td>TH 192</td>
<td>Freshman Seminar</td>
<td>F, S, SS</td>
<td>Prerequisite: Theatre majors only.</td>
</tr>
<tr>
<td>TH 241</td>
<td>Text Analysis for Performance</td>
<td>None</td>
<td>Reading, researching and discussing representative play types to foster an understanding of concepts used in theatrical staging. ($)</td>
</tr>
<tr>
<td>TH 242</td>
<td>Theatre History I</td>
<td>TH 241 or concurrent registration.</td>
<td>Theatre from its origins through the Renaissance.</td>
</tr>
<tr>
<td>TH 243</td>
<td>Theatre History II</td>
<td>TH 242</td>
<td>Theatre history from the English Restoration of 1660 through the postwar developments in Europe and the Americas from 1945 to 1960.</td>
</tr>
<tr>
<td>TH 249</td>
<td>Movement for Actors II</td>
<td>TH 149; TH 251 or concurrent registration.</td>
<td>Intermediate actor movement. ($)</td>
</tr>
<tr>
<td>TH 250</td>
<td>Voice and Speech for the Stage</td>
<td>TH 251 or concurrent registration.</td>
<td>L nklater and Skinner approaches to voice and speech for the theatre actor.</td>
</tr>
<tr>
<td>TH 251</td>
<td>Intermediate Acting</td>
<td>TH 151</td>
<td>Study in the application of the given circumstances to a text and development of characterization. Selection and preparation of audition material.</td>
</tr>
<tr>
<td>TH 255</td>
<td>Directing Workshop</td>
<td>TH 241 or concurrent registration.</td>
<td>Practical directing workshop, short directing exercises, short scenes, techniques, theories, readings, staging prompts.</td>
</tr>
<tr>
<td>TH 261</td>
<td>Drawing and Drafting for the Theatre</td>
<td>TH 160</td>
<td>Fundamental drawing, drafting, and rendering techniques needed by theatrical designers to effectively communicate their visual ideas. ($)</td>
</tr>
<tr>
<td>TH 262</td>
<td>Stage Management I</td>
<td>TH 151; TH 161</td>
<td>Duties and responsibilities of stage managers. Communication, rehearsal, performance techniques. Conceptual approaches to theatre.</td>
</tr>
<tr>
<td>TH 263</td>
<td>Costume Design I</td>
<td>TH 160</td>
<td>Basic theory and technique for visualization of theatrical characters through costume.</td>
</tr>
<tr>
<td>TH 264</td>
<td>Lighting Design: Fundamentals</td>
<td>TH 160; TH 161</td>
<td>Essential principles and theory for stage lighting including design process, control, equipment, and lighting aesthetics. ($)</td>
</tr>
<tr>
<td>TH 265</td>
<td>Scenic Design: Fundamentals</td>
<td>TH 160; TH 161</td>
<td>Theory and techniques for designing scenery for the stage. ($)</td>
</tr>
<tr>
<td>TH 266</td>
<td>Sound Design for the Theatre</td>
<td>TH 160; TH 161</td>
<td>Equipment, process, and recording techniques used in sound design for live performance. ($)</td>
</tr>
<tr>
<td>TH 267</td>
<td>Scenic Painting</td>
<td>TH 265</td>
<td>Basic techniques and practical applications in scenic painting for the theatre. ($)</td>
</tr>
<tr>
<td>TH 269</td>
<td>Theatrical Makeup</td>
<td>TH 251 or TH 261</td>
<td>Stage makeup. Individual skill in character analysis, application in pigment, plastic, hair, makeup, and selection and use of theatrical makeup. ($)</td>
</tr>
<tr>
<td>TH 275</td>
<td>Self-scripting and Performance Workshop</td>
<td>TH 175</td>
<td>Study and practice of the processes of self-scripting (theatrical storytelling from personal experience) as a tool for performers and writers.</td>
</tr>
<tr>
<td>TH 286</td>
<td>Theatre Practicum II</td>
<td>TH 186</td>
<td>This is a partial-semester course. Practical experience in mounting theatrical productions.</td>
</tr>
<tr>
<td>TH 301</td>
<td>Theatre Design and Production Special Topics</td>
<td>TH 261; TH 262; two of: TH 263, TH 264, TH 265, TH 266.</td>
<td>In-depth study of a topic of general interest in design and production. Possible topics include history of décor, storyboarding, etc.</td>
</tr>
<tr>
<td>TH 324</td>
<td>Teaching Creative Drama for Children</td>
<td>TH 251 or TH 275</td>
<td>Theoretical and practical experience in teaching creative drama.</td>
</tr>
</tbody>
</table>

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TH 343 03(3-0-0). Contemporary Plays and Alternative Theatre. F. Prerequisite: TH 243.
   The study of revolutionary movements and alternative staging practices in theatre prompted by plays written from 1960 to the present.

TH 344 03(0-0-3). Dramaturgy Protocol Seminar. S. Prerequisite: TH 343.
   Training in the application of dramaturgical techniques to facilitate the collaborative creative process in contemporary performance practice.

TH 349 02(0-4-0). Movement for Actors III. S. Prerequisite: TH 249; TH 351 or concurrent registration.
   Advanced assimilation techniques to challenge the actor physically and psychologically to conceptualize and fully realize theatrical characterization. (S)

TH 350 03(3-0-0). Classical Text. S. Prerequisite: TH 351 or concurrent registration or written consent of instructor.
   The Cicely Berry approach to voice and speech for speaking classical text.

TH 351 03(1-2-1). Acting III. S. Prerequisite: TH 249; TH 250; TH 251.
   Acting Methods for challenges presented in plays by Brecht, Moliere, Chekov, Ibsen, Pirandello, O’Neill, and contemporary re-workings of the Greeks.

TH 352 02(1-0-1). Acting for Singers. F. Prerequisite: MU 401 or concurrent registration.
   Acting class specifically for singers: improv, beginning scene work, harnessing given circumstance and augmenting physical character life onstage.

TH 353 03(2-2-0). Experimental Performance. SS. Prerequisite: None.
   Artistic exploration of experimental performance via radical innovations in dance, theatre, music, literature, film, art, and performance art.

TH 355 03(0-0-3). Directing Seminar. F. Prerequisite: TH 255; TH 265 or concurrent registration.
   Theatrical, practical, and creative approaches to directing a play: research, analysis, semiotics, identifying visual metaphor, point of view.

*TH 361 03(1-4-0). Technical Theatre: Technical Direction. F. Prerequisite: TH 161.
   Advanced training and techniques in construction management and technical production for the theatre.

*TH 362 03(3-0-0). Advanced Stage and Production Management. S. Prerequisite: TH 262.
   Stage and production management practices and procedures of theatre in the U.S.

*TH 363 03(1-4-0). Advanced Costume Design S. Prerequisite: TH 263.
   Theory and practice of advanced costume design techniques.

*TH 364 03(2-2-0). Advanced Lighting Design. S. Prerequisite: TH 264.
   Principles and theory for stage lighting including advanced programming, tour preparation, and presentation techniques.

TH 365 03(2-2-0). Advanced Scenic Design. S. Prerequisite: TH 267.
   The practice of scenic design from text to idea to realized work. Advanced scenic design techniques in divergent and increasingly complex situations.

*TH 366 03(2-2-0). Digital Media Design for the Stage. F. Prerequisite: TH 266.
   Training, content creation and presentation techniques for sound and projection design for live performance.

TH 369 03(1-4-0). Advanced Makeup and Hair Design. S. Prerequisite: TH 269.
   Advanced techniques in makeup, hair, and wig design for theatre.

TH 370A-B Var. Theatre Assistant. F, S.
   Assist a guest professional or faculty designer. A) Design. Prerequisite: TH 365. B) Directing. Prerequisite: TH 355.

TH 375 03(1-0-2). Playwright's Workshop. S. Prerequisite: TH 275.
   Character, conflict, structure, setting, dialogue, and the process of rewriting, resulting in a finished 10-minute play.

TH 386 01(0-2-0). Theatre Practicum III. F, S. Prerequisite: TH 286.
   This is a partial-semester course.
   Practical experience in mounting theatrical productions.

TH 392 03(0-0-3). Theatre Seminar. S, F. Prerequisite: TH 243 or concurrent registration.
   Various current theatre topics taught by visiting professionals, for example, "The League of Regional Theatres is our National Theatre.

TH 400 03(1-4-0). Theatre Production Workshop. F, S. Prerequisite: Written consent of instructor.
   Explores both the practical and dramaturgical essences of the production of a play. (S)

*TH 401 03(2-2-0). Theatrical Design and Prod Advanced Topics. F. Prerequisite: TH 362; three of the following or concurrent registration: TH 363, TH 364, TH 366, TH 369.
   Intensive study for advanced TD&P students, e.g., property design, advanced costume technology, wigmaking, company management, rigging, pyro, etc.

TH 449 03(0-0-3). Commedia and Masks. F. Prerequisite: TH 351 or written consent of instructor.
   Playing comedy, including commedia dell’arte techniques, clown work, masks, circus techniques, mime, and scene work from comic scripts.

TH 450 03(2-2-0). Professional Actor Preparation. S. Prerequisite: TH 351.
   Portfolios, casting, breakdowns, reels, agents, managers, interviews, cold reading techniques, on-camera work, marketing. (S)

TH 451 03(2-2-0). Advanced Topics in Acting. S. Prerequisite: TH 351. May be taken three times for credit.
   Author-specific actor challenges (e.g., Brecht, Beckett, Shakespeare, Chekhov, Moliere, and contemporary writers).

TH 455 04(2-0-2). Advanced Directing. S. Prerequisite: TH 250; TH 262; TH 344; TH 350; TH 355; TH 365; (TH 449 or concurrent registration).
   Intensive experience in stage direction focusing on specific directorial challenges posed by various types of texts and multiple collaborative projects.

*TH 460 03(2-2-0). Design Portfolio and Professional Preparation. F. Prerequisite: TH 363, TH 364, TH 365, TH 366.
   Creating effective portfolio and design presentations, digital portfolios, storyboarding, articulating concepts, professional preparation for career.

TH 471 03(0-0-3). Capstone in Theatre Practice. F, S. Prerequisite: Written consent of instructor.
   Major production assignment in acting, design, production, or dramatic literature.

TH 475 03(2-0-1). Advanced Playwriting. S. Prerequisite: TH 343; TH 375
   Development of imaginative capabilities and insights, to articulate an individual voice as a writer of longer and more complex plays for theatre.

° Alternate year offering (odd); * Alternate year offering (even); $ Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
TH 482 03(0-0-3). Theatre in London—Travel Abroad. SS. Prerequisite: Good academic and disciplinary standing.
Study abroad in and around London to foster research into theatre as an evolving art form with rich historical and artistic traditions.

TH 484 Var. [1-3]. Supervised College Teaching. F, S. Prerequisite: Written consent of instructor. Students must have taken the course they will be assisting. A maximum of 10 combined credits for all 384 and 484 courses are counted towards graduation requirements.

TH 486 01(0-2-0). Theatre Practicum IV. F, S. Prerequisite: TH 386; only for students in the Theatrical Design and Production concentration. This is a partial semester course. Advanced topics in applied theatre production. Challenges in developing and mounting a theatrical performance.

TH 487 Var. [1-12]. Theatre Internship. Adviser-approved position at a professional regional theatre, a professional training program, or professional summer theatre.

TH 491 Var. Repertory Theatre Workshop. Prerequisite: Audition only. Principles and practice of repertory theatre operation; practical experience offered.

TH 492 03(0-0-3). Theatre Seminar. F, S. Prerequisite: TH 344; senior standing. Contemporary theatre practice, trends, in-depth study of genres, authors, current theatre research, e.g., “Theatre of Revolt,” “Beckett’s Theatre.”

TH 495 Var. Independent Study.

TH 498 Var[3-6]. Theatre Research. F, S, SS. Prerequisite: Written consent of faculty advisor; theatre majors only. Scholarly research paper in theatre. Topic approved by faculty advisor.

TH 499 Var[3-6]. Theatre Thesis. F, S, SS. Prerequisite: Written consent of faculty advisor; theatre majors only. Written thesis in theatre. Topic approved by faculty advisor.
# VETERINARY MEDICINE COURSES

## Nondepartmental

### College of Veterinary Medicine and Biomedical Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM 603 01(1-0-0)</td>
<td>Veterinary Science: Research and Methods.</td>
<td>F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Conduct of responsible research, contributions of research to the practice of veterinary medicine, and career opportunities.</td>
</tr>
<tr>
<td>VM 606 03(3-0-0)</td>
<td>Veterinary Immunology.</td>
<td>F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Infectious agents, immune-mediated diseases, immune deficiencies, and principles of vaccination.</td>
</tr>
<tr>
<td>VM 610 01(5-1.5-0)</td>
<td>Foundations of Veterinary Medicine I.</td>
<td>F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Development of professional skills (ethics, communication, physical exam, surgical skills) necessary for the practice of veterinary medicine.</td>
</tr>
<tr>
<td>VM 611 01(5-1.5-0)</td>
<td>Foundations of Veterinary Medicine II.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Development of professional skills (ethics, communication, physical exam, surgical skills) necessary for the practice of veterinary medicine.</td>
</tr>
<tr>
<td>VM 612 01(0-0-1)</td>
<td>The Healer's Art.</td>
<td>S. Prerequisite: Enrollment in the Professional Veterinary Medicine program.</td>
<td>Exploration of student experiences, beliefs, and values related to their work as veterinary medical professionals.</td>
</tr>
<tr>
<td>VM 616 03(4-2-0)</td>
<td>Functional Anatomy.</td>
<td>F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Embryonic development and organogenesis are incorporated to improve understanding of normal anatomy and common developmental pathologies.</td>
</tr>
<tr>
<td>VM 618 07(5-6-0)</td>
<td>Veterinary Physiology and Histology.</td>
<td>F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Gross microscopic anatomy and physiology of gastrointestinal, cardiovascular, respiratory, hematopoietic, urinary systems in selected domestic animals.</td>
</tr>
<tr>
<td>VM 619 04(3-3-0)</td>
<td>Veterinary Neurobiology.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Structural and functional foundations of nervous system activity; introduction to clinical neurology.</td>
</tr>
<tr>
<td>VM 621 02(1-2-0)</td>
<td>Exotic Animal Anatomy and Husbandry.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Applied veterinary anatomy and husbandry of birds, reptiles, amphibia, and fish.</td>
</tr>
<tr>
<td>VM 623 02(2-0-0)</td>
<td>Veterinary Nutrition and Metabolism.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Intermediary metabolism, nutrients, and animal nutrition.</td>
</tr>
<tr>
<td>VM 624 03(2-2-0)</td>
<td>Veterinary Feeds and Feeding.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Description, advantages, and limitations of feedstuffs fed to domestic livestock; nutrient requirements and formulation of rations for various needs.</td>
</tr>
<tr>
<td>VM 625 02(2-0-0)</td>
<td>Principles of Diagnostic Imaging.</td>
<td>F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Diagnostic film and digital radiography, computed tomography, ultrasound, magnetic resonance, nuclear medicine, and radiographic and sonographic anatomy.</td>
</tr>
<tr>
<td>VM 637 03(3-0-0)</td>
<td>Veterinary Bacteriology and Mycology.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Biology of bacterial and fungal pathogens of animals with emphasis on common infectious diseases encountered in veterinary practice.</td>
</tr>
<tr>
<td>VM 638 02(2-0-0)</td>
<td>Veterinary Parasitology.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Biology of helminths, arthropod, and protozoan pathogens of animals with emphasis on common infectious diseases encountered in veterinary practice.</td>
</tr>
<tr>
<td>VM 639 02(2-0-0)</td>
<td>Veterinary Virology.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Biology of viral pathogens of animals with emphasis on common infectious diseases encountered in veterinary practice.</td>
</tr>
<tr>
<td>VM 640 05(4-0-1)</td>
<td>Biology of Disease I.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Introduction to mechanisms of subcellular, cellular, tissue, and organ response to injury and associated pathological processes.</td>
</tr>
<tr>
<td>VM 648/VS 648 02(2-0-0)</td>
<td>Food Animal Production and Food Safety.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program. Credit not allowed for both VM 648 and VS 648.</td>
<td>Basic orientation to food animal production units, herd health concepts, and issues of food safety from preharvest through processing and distribution.</td>
</tr>
<tr>
<td>VM 707 01(1-0-0)</td>
<td>Emerging Issues in Infectious Disease.</td>
<td>F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Influence of microbial, host, and environmental changes on the emergence, control, and prevention of infectious disease of veterinary importance.</td>
</tr>
<tr>
<td>VM 710 01(5-1.5-0)</td>
<td>Foundations of Veterinary Medicine III.</td>
<td>F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Development of professional skills (ethics, communication, physical exam, surgical skills) necessary for the practice of veterinary medicine.</td>
</tr>
<tr>
<td>VM 711 01(5-1.5-0)</td>
<td>Foundations of Veterinary Medicine II.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Development of professional skills (ethics, communication, physical exam, surgical skills) necessary for the practice of veterinary medicine.</td>
</tr>
<tr>
<td>VM 712 04(4-0-0)</td>
<td>Practice Management/Professional Development.</td>
<td>S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.</td>
<td>Veterinary practice management including marketing, finance, information systems, personnel issues, and client relations.</td>
</tr>
</tbody>
</table>

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VM 714 04(4-0-0). Veterinary Preventive Medicine. F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Principles of health promotion and disease prevention in populations.

VM 716 01(1-0-0). Principles of Shelter Veterinary Medicine. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Introduces the principles of veterinary shelter medicine. Emphasis on management of small animals with herd health concepts.

VM 720 01(1-0-0). Alternative and Complementary Therapeutics. F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Mechanisms and efficacy of alternative and complementary therapeutics used in veterinary medicine.

VM 721 02(0-0-2). Non-Mammalian Vertebrate Medicine. F. S. Prerequisite: VM 621; admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Diagnosis and treatment of diseases of non-mammalian vertebrates.

VM 722 04(4-0-0). Veterinary Pharmacology. F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Basic and clinical pharmacology, therapeutic practice, and pharmacy management.

VM 724 06(4-0-2). Bioanalytical Pathology. F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Clinical indications and interpretation for imaging modalities in examination of body systems.

VM 726 02(1-0-1). Principles of Imaging Interpretation I. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Clinical indications and interpretation for imaging modalities in examination of body systems.

VM 728 02(2-0-0). Principles of Imaging Interpretation II. F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Interpretation of clinical imaging techniques used in diagnosis of specific diseases of organ systems.

VM 730 02(2-0-0). Applied Animal Behavior. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Identification, characterization, and treatment of common disorders of animal behavior encountered by practicing veterinarians.

VM 731 02(2-0-0). Biology and Diseases of Small Mammals. F. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Diagnosis and treatment of diseases of small mammals.

VM 733 02(2-0-0). Principles of Surgery. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Principles and concepts of general and orthopedic surgery.

VM 737 03(2-0-1). Principles of Anesthesia. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Integration of physiological and pharmacological principles in clinical anesthesia.

VM 740 04(3-0-1). Biology of Disease II. F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Pathogenesis of organ system diseases and integrated systemic pathology.

VM 742 01(0-0-1). Biology of Disease III. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Pathogenesis of disease in organ systems, systemic pathology.

VM 744 03(2-2-0). Theriogenology. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Reproductive function and disease, including mammary gland and endocrine regulation of reproduction and lactation.

VM 745 05(5-0-0). Clinical Sciences I. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Diagnostic approaches to common medical problems of cardiovascular, urinary, and digestive-hepatic systems.

VM 747 05(5-0-0). Clinical Sciences II. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Diagnostic approaches to common medical problems of organ systems.

VM 749 05(5-0-0). Clinical Sciences III. F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Diagnostic approaches to common medical problems of organ systems.

VM 751 02(2-0-0). Veterinary Clinical Toxicology. F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Common toxicants and poisonous plants encountered by companion and farm animal species, their pathophysiological effects, and clinical treatments.

VM 753 05(5-0-0). Clinical Sciences IV. F. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Diagnostic approaches to common medical problems of organ systems.

VM 757 03(3-0-0). Bovine Herd Medicine. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Health management, and diagnosis and treatment of diseases of food animals.

VM 763 05(5-0-0). Equine Medicine and Surgery. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Health management, and diagnosis and treatment of diseases of horses.

VM 773 04(4-0-0). Small Animal Medicine and Surgery I. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Health management, and diagnosis and treatment of diseases of dogs and cats.

VM 774 04(4-0-0). Small Animal Medicine and Surgery II. S. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

Health management, and diagnosis and treatment of diseases of dogs and cats.

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VM 786A-B Var[1-22]. Practicum. Prerequisite: A-B) Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

A) Junior practicum Var[6-8].

B) Senior practicum.

VM 795 Var[1-18]. Independent Study. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

VM 796J-R. Group Study. Prerequisite: Admission to professional curriculum in veterinary medicine. All courses must be taken in prescribed sequence in the PVM program.

J) Swine medicine 01(1-0-0).

R) Food animal clinical problems 03(3-0-0).

Alternate year offering (odd); Alternate year offering (even); Field trips; Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
**CLINICAL SCIENCES COURSES**  
*Department of Clinical Sciences*  
**College of Veterinary Medicine and Biomedical Sciences**

**VS 313/ANEQ 313 03(3-0-0).** Prevention and Control of Livestock Diseases. F. Prerequisite: ANEQ 230 or ANEQ 305 or BMS 300; ANEQ 310 or concurrent registration; ANEQ 320 or concurrent registration; junior or senior standing. Credit not allowed for both VS 313 and ANEQ 313.

Common ailments of livestock; sanitation and disease prevention and control.

**VS 331 04(3-2-0).** Histology. F, S, SS. Prerequisite: BMS 300. Credit allowed for only one of the following: BMS 330, BMS 331, VS 331.

Analysis of animal cells, tissues and organs emphasizing light microscopy. (NT-O)

**VS 333 04(3-3-0).** Domestic Animal Anatomy. F, S, SS. Prerequisite: LIFE 102 or BZ 110. Credit not allowed for both VS 333 and BMS 305.

Comparative functional anatomy of the dog, horse, and cow. (NT-O)

**VS 495 Var. Independent Study.** F, S, SS.

**VS 533/MIP 533 03(2-0-1).** Epidemiology of Infectious Diseases/ Zoonoses. S. Prerequisite: MIP 300. Credit not allowed for both VS 533 and MIP 533.

Epidemiologic features of infectious and parasitic diseases that have a major impact on community medicine.

**VS 562 03(3-0-0).** Applied Data Analysis. S. Prerequisite: STAT 301 or STAT 307.

Data management, application and interpretation of statistical analysis, and reporting of results for students in health science fields.

**VS 570/AGRI 570 02(2-0-0).** Issues in Animal Agriculture. F. Prerequisite: None. Credit not allowed for both VS 570 and AGRI 570.

Issues that have a major impact on the direction of changes in animal agriculture.

**VS 579/NSCI 579 03(3-0-0).** Animal Behavior in Captive Populations. F, S. Prerequisite: Enrollment in the M.P.N.S., Zoo, Aquarium and Shelter Management specialization, or BZ 300. Credit not allowed for both VS 579 and NSCI 579.

How animals learn, perceive their world, and behave, and how all of those intersect to alter behavior in captive settings.

**VS 602 02(1-0-1).** Critical Evaluation of Scientific Literature. F. Prerequisite: None.

Method of evaluating scientific literature. Students present critiques of papers they have chosen.

**VS 605 02(2-0-0).** Comparative Anesthesiology. S. Prerequisite: None.

Techniques in anesthesia for large and small animals.

**VS 606 01(0-3-0).** Comparative Anesthesiology Laboratory. S. Prerequisite: Concurrent registration in VS 605.

Techniques in anesthesia for large and small animals.

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1 Offered every third year.

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\textsuperscript{1}VS 701 Var[1-3]. Postgraduate Medicine I. F.
Comprehensive review, update of immunology, emergency medicine, dermatology, and endocrinology.

\textsuperscript{1}VS 702 Var[1-3]. Postgraduate Medicine II. S.
Comprehensive review, update of neurology, gastroenterology, and ophthalmology.

\textsuperscript{1}VS 703 Var[1-3]. Postgraduate Medicine III. F.
Comprehensive review, update of oncology, cardiology, reproduction, ophthalmology, and radiology.

\textsuperscript{1}VS 704 Var[1-3]. Postgraduate Medicine IV. S.
Comprehensive review, update of hematology, nephrology, urology, respiratory, hepatic, and pancreatic.

VS 716 02(2-0-0). Advanced Studies in Reproduction. S.
Biological and physiological basis for problems in reproduction.

VS 718 02(0-0-4). Cancer Biology Clinical Practicum. SS.
Prerequisite: ERHS 510.
Exposes graduate students engaged in laboratory cancer research to cancer from a clinical perspective, through VTH clinical rotations.

\textsuperscript{2}VS 733 04(4-0-0). Advanced Veterinary Epidemiology. S. Prerequisite: ERHS 532; ERHS 542 or ERHS 544 or STAT 511 or STAT 512 or VS 662.
Advanced epidemiological and statistical techniques for the design and analysis of research projects.

\textsuperscript{*}VS 750 02(2-0-0). Clinical and Applied Pharmacology. S. Prerequisite: BMS 450 or DVM or equivalent degree.
Factors involved in drug dosing and variability of drug response. Applications in veterinary and human medicine.

VS 784 Var. Supervised College Teaching.

VS 792 Var. Seminar.

VS 795A-T Var[1-5]. Independent Study. Maximum of 5 credits allowed per subtopic.


VS 798 Var. Research.


\[\textsuperscript{1}\text{Offered every third year.}\]

\[\textsuperscript{2}\text{Alternate year offering (odd); } \textsuperscript{*} \text{Alternate year offering (even); } \textsuperscript{+} \text{Field trips; } \textsuperscript{S} \text{Special course fee; } \textsuperscript{NT} \text{Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); } \textsuperscript{GT} \text{State Guarantee Transfer course and } \textsuperscript{AUCCsubcode} \text{All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)}\]
WATERSHED SCIENCE COURSES
Department of Ecosystem Science and Sustainability
Warner College of Natural Resources

WR 304/GR 304 03(3-0-0). Sustainable Watersheds. (AUCC 3A). F, S. Prerequisite: Completion of the AUCC 1B Mathematics requirement. Credit not allowed for both WR 304 and GR 304. Effects of climate, land use, and water use on the sustainability of water quantity and quality.

+WR 406 03(2-3-0). Seasonal Snow Environments. S. Prerequisite: Junior or senior standing. Required field trips. Evaluation of the physical environment; characteristics of snow; methods of studying snow; snow safety. ($)

WR 416 03(3-0-0). Land Use Hydrology. F. Prerequisite: (GEOL 120 or GEOL 122 or GEOL 124 or GEOL 150 or SOCR 240); (CIVE 202 or STAT 201 or STAT 301 or STAT 307 or STAT 315); (PH 110 or PH 121 or PH 141).
Fundamental concepts in hydrology and effects of land use on hydrologic processes.

+WR 417 03(2-3-0). Watershed Measurements. F. Prerequisite: Concurrent registration in WR 416. Required field trips.
Instrument and field techniques in watershed science. Project design and data analysis. ($)

WR 418 03(3-0-0). Land Use and Water Quality. S. Prerequisite: (CHEM 103; CHEM 104) or (CHEM 107; CHEM 108) or (CHEM 111; CHEM 112).
Physical, chemical, biological water quality parameters affecting land use; land management to maintain water quality; water quality standards, legislation.

WR 419 02(0-4-0). Water Quality Laboratory for Wildland Managers. S. Prerequisite: Concurrent registration in WR 418.
Sampling and determination of water quality parameters. ($)

WR 440 03(2-2-0). Watershed Problem Analysis. S. Prerequisite: NR 322 or NR 319; WR 416; WR 418.
Capstone integration of spatial watershed issues, focused on problem solving in watershed science.

WR 465 04(3-3-0). Eolian and Fluvial Transport Processes. F. Prerequisite: PH 141.
Fundamental physical principles of eolian and fluvial transport processes.

WR 474 03(3-0-0). Snow Hydrology. F. Prerequisite: None.
Snowfall, accumulation, distribution, physical processes in the snowpack, energy balance, ablation and runoff, measurement methods, runoff forecasting.

+WR 486 02(0-6-0). Watershed Field Practicum. F. Prerequisite: Junior year standing. Required field trips.
Field visits to watershed management projects and sites of significant field studies. ($)

WR 487 Var[1-6]. Internship. F, S, SS. Prerequisite: Written consent of instructor.
Supervised work experience in professional settings related to Watershed Science.

WR 492 Var. Seminar.

WR 495 Var. Independent Study in Watershed Resources.

°WR 510 02(2-0-0). Watershed Management in Developing Countries. S. Prerequisite: CIVE 322/ENVE 322 or GR 304/WR 304.
Watershed management problems, approaches, and solutions in developing countries.

WR 511 03(3-0-0). Water Resource Development. S. Prerequisite: Graduate standing; written consent of instructor.
Basic principles of water resource management including surface and subsurface flows. (NT-O)

WR 512 03(0-0-3). Water Law for Non-Lawyers. S. Prerequisite: Written consent of instructor; graduate standing.
Basics of water law and policy for Colorado, western states, and the U.S. (NT-O)

°WR 516 03(2-0-1). Cumulative Effects and Watershed Analysis. S. Prerequisite: WR 416; WR 417.
Definition, casual processes, and modeling of cumulative watershed effects; comparison and evaluation of current watershed analysis procedures.

WR 520 02(2-0-0). Evapotranspiration. S. Prerequisite: PH 122.
Theory, estimation, measurement, simulation, and application of evapotranspiration processes in hydrology.

°WR 524/°CIVE 524 03(2-2-0). Modeling Watershed Hydrology. S. Prerequisite: CIVE 322/ENVE 322 or WR 416; CIVE 202 or STAT 301 or STAT 315. Credit not allowed for both WR 524 and CIVE 524.
Development and application of watershed models: structure, calibration, evaluation, sensitivity analysis, simulation.

°WR 574 04(3-0-1). Advanced Snow Hydrology. F. Prerequisite: CIVE 322/ENVE 322 or WR 416.
Snow processes in hydrologic cycle; physical and conceptual methods of modeling; techniques for measuring different states and change rates.

WR 575 01(0-2-0). Snow Hydrology Field Methods. S. Prerequisite: Enrollment in a graduate program.
Field course offering hands-on experience in snow hydrology. ($)

°WR 616 03(1-0-2). Hillslope Hydrology and Runoff Processes. S. Prerequisite: CIVE 322/ENVE 322 or WR 416.
Hillslope hydrology and runoff processes in different environments; implications for management and modeling.

°WR 674 03(3-0-0). Data Issues in Hydrology. S. Prerequisite: WR 574.
Types of data, data sources, data quality, missing data, spatial data, data usage, sensitivity in models, error, presentation of data and results.

WR 692 Var. Seminar.

WR 695 Var. Independent Study.

WR 696 Var. Group Study.

WR 698 Var. Research.


°WR 712 03(2-2-0). Watershed Systems. F. Prerequisite: CIVE 322/ENVE 322 or WR 416; STAT 340.
Dynamic simulation of watershed behavior; application and evaluation of current hydrologic models.

°WR 714 03(3-0-0). Water Quality for Wildland Managers. F. Prerequisite: WR 418.
Sampling, statistics of sampling, concepts of ionic equilibrium, water quality modeling, instream flow requirements.

WR 798 Var. Research.


° Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (B = blended, C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode = State Guarantee Transfer course and AUCC-subcode = All University Core Curriculum, where the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
WOMEN’S STUDIES COURSES
Department of Ethnic Studies
College of Liberal Arts

WS 200 03(3-0-0). Introduction to Women’s Studies. F, S, SS.
Prerequisite: None.
Examination of gender roles in work, education, spirituality, relationships, health, institutions, and organizations. (NT-O)

WS 397 03(3-0-0). Group Study.

WS 472 03(3-0-0). Seminar in Women’s Studies-Social Sciences. F, S.
Prerequisite: Enrolled in Women’s Interdisciplinary Studies Program.

WS 495 Var [1-3]. Independent Study. Prerequisite: Approval of Women’s Studies Director and relevant department head(s).

WS 692 03(0-0-3). Seminar in Women’s Studies. Prerequisite: One semester of enrollment in Women’s Interdisciplinary Graduate Studies Program.

WS 695 Var [1-3]. Independent Study. Prerequisite: Approval of Women’s Studies Director and relevant department head.

WS 699 Var [3-6]. Thesis. Prerequisite: Approval of Women’s Studies Program Board.