

campus resources, and personal and career development. Students will identify and discuss specific issues that pertain to them as student-athletes.

#### EDU 163 - Student-Athlete Success

Credits: 1. This seminar is designed to assist student-athletes in developing necessary life skills that will help them in their remaining years at the University of Montana. Topics will include a wide variety of areas such as: financial management, nutrition, career development and planning, healthy relationship skills, social responsibility, social etiquette, conflict resolution, and leadership.

#### EDU 202 - Early Field Experience

Credits: 1. Offered autumn and spring. Prereq., admission to Teacher Education Program. Guided introductory field experience for students committed to teaching as a profession. Connects field experience to content of co-requisite theory classes. Seminars include professional development portfolio, developmental level of students, diversity, learning/teaching strategies, motivation, classroom management, and assessment of learning.

#### EDU 210 - New Student Athlete Seminar

Credits: 2. Offered autumn. This course is designed to assist students in the development of necessary skills to be a successful college student-athlete. Topics will include a wide variety of areas including study skills, an introduction to campus resources, and personal and career development. Students will identify and discuss specific issues that pertain to them as student-athletes.

#### EDU 221 - Ed Psych & Measurement

Credits: 3. Offered autumn and spring. Prereq., admission to Teacher Education program; recommended prereq. or coreq., EDU 202. Analysis of fundamental psychological concepts underlying classroom teaching and management, learning and evaluation including educational measurement. Emphasis on cognition, developmental, and motivational aspects of learning.

#### EDU 222 - Educational Psych Child Dev

Credits: 3. Offered autumn and spring. Prereq., Admission to the Teacher Education Program. This course must be taken concurrently with Level 1 courses. This course will examine the classroom practices that impact elementary aged children's learning, motivation and development. The content is closely aligned with co-requisite courses and initial field experience, allowing opportunities for observation and practice of principles covered in class.

#### EDU 331 - Lit & Literacy for Children

Credits: 3. Offered autumn and spring. Prereq., WRIT 101; open to majors in elementary education, secondary education or pre-education. Genre survey, including cross-cultural literature, that focuses on responding to children's literature through reading, writing, listening, speaking, and activities that emphasize selecting literature, teaching critical thinking, and integrating literature into the elementary curriculum.

#### EDU 338 - Academic Interventions

Credits: 3. Offered autumn and spring. Prereq., Admission to the Teacher Education Program. This course must be taken concurrently with Level 1 courses. This course prepares pre-service teachers to work with all students including those who are struggling learners and high achievers. The course is focused on school-wide assessment and instruction methods with particular focus on working with individual children and small groups in core academic areas.

#### EDU 339 - Tchg Assess PK-8 Lang Arts

Credits: 3. Offered autumn and spring. Prereq., admission to the Teacher Education Program. This class must be taken concurrently with Level 2 courses and is restricted to students who have been admitted to the Elementary Education program. Language development and primary and secondary language acquisition, theory and application of teaching and assessing listening, speaking, writing, and viewing in a PK-8 setting. Course Attributes: Writing Course-Advanced

#### EDU 340 - Classroom Management

Credits: 3. Offered autumn and spring. Prereq., Admission to the Teacher Education Program. This course must be taken concurrently with Level 3 courses and is restricted to students who have completed coursework in Level 1 and 2. This course is designed to prepare pre-service teachers to set up a classroom, establish classroom policies and procedures and routines, establish and maintain cooperative relationships with parents, effectively provide feedback to students, motivate desired student behavior, and research professional literature to seek best classroom management practices to hone the craft of effective instruction.

#### EDU 345 - Excptnlty & Clsrm Mgmt

Credits: 3. Offered autumn and spring. Prereq., Admission to the Teacher Education Program. Recommended pre- or co-requisite of EDU 202. Focus on classroom management and the characteristics and instructional adaptations for exceptional students in the regular classroom. Addresses the Individuals with Disabilities Education Act and subsequent reauthorizations, presents practices for working with students who are at-risk and students with disabilities in inclusive settings, and includes technological considerations.

#### EDU 346 - Exceptionalities

Credits: 3. Offered autumn and spring. Prereq., Admission to the Teacher Education Program. This course must be taken concurrently with Level 2 courses and is restricted to students who have completed coursework in Level 1. This course will focus on characteristics and strategies for optimizing learning for children with exceptionalities in the regular education classroom. Addresses the Individuals with Disabilities Education Act and subsequent reauthorizations, presents practices for working with students who are at-risk and students with disabilities in inclusive settings, and includes technological considerations.

#### EDU 370 - IntegTech into Educ

Credits: 3. Offered autumn and spring. Prereq., Admission to the Teacher Education Program and general computer literacy skills. Recommended pre- or co-req., EDU 202. Integration and use of computer and other technologies in education.

#### EDU 392 - Independent Study

Credits: 1 TO 9. (R-9) Offered autumn and spring. Prereq., consent of instr. Course material appropriate to the needs and objectives of the individual student.

#### EDU 395 - Clinical Experience

Credits: 1. (R-4) Offered autumn and spring. Prereq., admission to the Teacher Education Program. Arranged field experience and seminar focusing on applying content from the co-requisite courses. This course number is used for multiple clinical experiences. Check the class schedule or with your advisor regarding the appropriate section. Elementary Education Majors: EDU 395 Clinical Experience Level 1 must be taken concurrently with Level 1 courses. EDU 395 Clinical Experience Level 2 must be taken concurrently with Level 2 courses.

Secondary and K-12 Licensure Students: EDU 395 Clinical Experience K-8 and EDU 395 Clinical Experience 9-12 have a prerequisite of an initial field experience and should be taken concurrently with a secondary or K-12 methods course. Course Attributes: Internships/Practicums

#### EDU 397 - Methods: Teaching & Assessing

Credits: 3. (R-15) Offered autumn and spring. Prereq., admission to the Teacher Education Program. This course number is used for multiple methods courses. Check the class schedule or with your advisor regarding appropriate sections. PK-4 Early Numeracy: Offered autumn and spring. This class must be taken concurrently with Level 1 courses and is restricted to students who have been admitted to the Elementary Education program. Students will learn mathematics concepts, methods of instruction, and the use of instructional materials appropriate for grades K-4 including the use of state and national standards for mathematics, appropriate technology, and manipulatives. Additionally, students will learn techniques for assessing the effectiveness of the counting and cardinality, operations and algebraic thinking, numbers and operations, measurement and data, and geometry. PK-3 Early Literacy: Offered autumn and spring. This class must be taken concurrently with Level 1 courses and is restricted to students who have been admitted to the Elementary Education program. The purpose of this course is to develop an understanding of emergent literacy and beginning reading and to examine developmentally appropriate methods of teaching and assessing reading to children in grades K-3. Course Attributes: Writing Course-Advanced

#### EDU 407E - Ethics & Policy Issues

Credits: 3. Offered every term. Prereq., admission to Teacher Education Program and EDU 202 or EDU 395. Practical application of ethical principles of the teaching profession. Analysis of the American public school and major policy issues from historical, legal, political, social as well as ethical perspectives. Course Attributes: Ethical & Human Values Course

#### EDU 411 - Impl IEFA K-12 Classroom

Credits: 3. Offered intermittently. This course is designed to equip educators with the essential skills, knowledge, and cultural awareness to implement Indian Education for All (IEFA) in the k-12 classroom and to assume a leadership role in IEFA programming.

#### EDU 421 - Statistical Procedures in Educ

Credits: 3. Prereq., M 115 or equiv. or consent of instr. Same as HHP 486. Concepts and procedures characterizing both descriptive and inferential statistics. Awareness of common statistical errors.

#### EDU 432 - Lit & Literacy for Yng Adlts

Credits: 3. Offered spring. Genre surveys; extensive reading, and analyzing of literature, authors and media addressed to students ages 12-18. Emphasizes effective teaching strategies for using high quality literature with middle school and secondary students. Not a substitute for EDU 331.

#### EDU 438 - Ltrcy Asmnt, Diagnosis & Instr

Credits: 3. Offered spring. Prereq., EDU 397 or 481 for education students. Based on the analytic process, emphasis on assessing, identifying, and devising instructional strategies to meet students' reading/writing strengths and needs.

#### EDU 441 - Leadership and Advocacy

Credits: 3. Offered autumn. Prereq., EDU 397 or EDU 481. Emphasis on teaching writing across the curriculum and supervising the school-wide writing program. Planning, implementing, and assessing writing, and connecting reading and writing will be addressed.

EDU 451 - Clinical Exp:L3 Pedagogy Cntnt

Credits: 1. (R-2) Offered autumn and spring. Prereq., Admission to the Teacher Education Program. This class must be taken concurrently with Level 3 courses and is restricted to students who have completed coursework in Levels 1 & 2. Arranged field experience in an elementary or middle school classroom completed with Elementary Professional Methods Block.

EDU 456 - Applctn of Literacy Modls K12

Credits: 6. Offered summer. Prereq., EDU 438 or C&I 533. Provides classroom teaching experience under direct supervision. Candidates teach reading and writing and apply knowledge of assessing and correcting reading and writing difficulties in grades K-12.

EDU 472 - Dev Digital Rich Workplace

Credits: 3. Offered spring. Prereq., CSCI 172. Project-based course to gain understanding and the ability to use web development tools to create a functional, well-designed web project. Additional topics/projects include: Web 2.0+ tapping the potential of digital tool; social media—educational and business uses; gamification in education and business, and introductory electronic game development for the classroom and the boardroom.

EDU 481 - Content Area Literacy

Credits: 3. Offered autumn and spring. Prereq., Admission to the Teacher Education Program. Theories, models, instructional approaches for using literacy for learning in content fields. Emphasis on research, instructional practice, classroom assessment, multicultural and discipline integration.

EDU 491 - Special Topics/Exp Courses

Credits: 1 TO 6. (R-6) Offered intermittently. Special courses experimental in nature dealing with a relatively narrow, specialized topic of particular current interest. Credit not allowed toward a graduate degree.

EDU 492 - Independent Study

Credits: 1 TO 6. (R-6) Offered every semester. Prereq., consent of instr. Course material appropriate to the needs and objectives of the individual student.

EDU 494 - Seminar:Refl Pract & App Rsrch

Credits: 1 TO 9. (R-9). Required seminar during student teaching. Focuses on learning to conduct research on P-12 student performance to determine teaching effectiveness. Includes on-campus and/or on-line planning, conducting, and analyzing classroom practice.

EDU 495 - Student Teaching

Credits: 1 TO 14. (R-14) Offered autumn and spring. Arranged capstone clinical experience required for all professional licensure students. Prereq., admission to the Teacher Education Program, completion of all required field experiences and methods courses, an application to student teach, and the consent of the Director of Field Experiences. In addition, elementary education majors must complete all coursework in all previous levels. Secondary and K-12 licensure students must complete at least two-thirds of content coursework and receive approval by departments in their major and minor content areas. Course Attributes: Internships/Practicums

EDU 497 - Teaching and Assessing

Credits: 0 TO 4. (R-15) Offered autumn and/or spring. Prerequisite: Admission to the Teacher Education Program. This course number is used for multiple elementary and secondary methods courses. Check the class schedule or with your advisor regarding appropriate sections. 5-8 Mathematics: 3 cr. Offered autumn and spring. This class must be taken concurrently with Level 3 courses and is restricted to students who have completed coursework in Levels 1 & 2. Methods of teaching, assessing, and evaluating mathematics in the 5-8 middle grades including number and operations, rational numbers, ratio and proportion, measurement, algebra, expressions and equations, geometry, probability, statistics, and functions. K-8 Social Studies: 3 cr. Offered autumn and spring. This class must be taken concurrently with Level 3 courses and is restricted to students who have completed coursework in Levels 1 & 2. Emphasis on developing teaching and assessing social studies teaching/learning opportunities that incorporate literature, primary sources and other developmentally appropriate activities. Overarching themes address diversity, integration across the curriculum and understanding state and national curriculum standards. K-8 Science: 3 cr. Offered autumn and spring. This class must be taken concurrently with Level 3 courses and is restricted to students who have completed coursework in Levels 1 & 2. Emphasis on developing, teaching, and assessing science teaching/learning opportunities that are inquiry-based, developmentally appropriate, integrated across the curriculum, and aligned with state and national curriculum standards. 4-8 Reading: 3 cr. Offered autumn and spring. This class must be taken concurrently with Level 3 courses and is restricted to students who have completed coursework in Levels 1 & 2. Preparation for teaching reading in a 4-8 setting so that all students are successful. Emphasis on reading to learn. Focus on using assessment to guide instruction, learning from trade books, textbooks, and electronic texts, activating prior knowledge, studying texts, and developing student enthusiasm for reading. 5-12 Science: 3 cr. Offered autumn. Methods of teaching science in the middle and secondary school. This course emphasizes the use of inquiry, problem-solving, appropriate use of technology, and assessment techniques that align with state and national curriculum standards. 5-12 Social Studies: 3 cr. Offered autumn. Foundations and purpose of the middle and secondary social studies curriculum. Elements of curricular design, including instructional methods, materials and assessment. 5-12 Mathematics: 4 cr. Offered autumn. Methods for teaching mathematics in grades 5-12 focusing on presentation of mathematics concepts and procedures through models, problem solving, and technology. Development of instructional strategies and classroom organizational models, discourse in the classroom, and multiple means for assessing student progress. 5-12 Business Subjects: 4 cr. Offered autumn. Methods for teaching business subjects in grades 5-12 focusing on content-specific topics in business, marketing, and information technology to include: instructional planning; effective teaching strategies (F2F & online); multiple means for assessing student progress; classroom management; and the relationship of the content area to standards-based curricula.

## Global Youth Development

### GYD 495 - Special Topics

Credits: 1 TO 6. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

### GYD 501 - Intercultural Dev't -I

Credits: 3. Offered autumn. Explorations of child rearing practices, parenting beliefs, and cultural variations in infancy and early child development. Level: Graduate

GYD 502 - Intercultural Dev't -II

Credits: 3. Offered spring. Explorations of cultural variations in later childhood, adolescence and adulthood, with particular focus on issues such as multicultural adoption, identity, and the role of poverty. Level: Graduate

GYD 510 - Intercultural Skills

Credits: 3. Offered autumn. Focus on applied skills in two areas: crosscultural negotiation and conflict management; program development and grant writing. Level: Graduate

GYD 520 - Critical Issues

Credits: 3. Exploration of psychological, political, spiritual, ethical, and practical dimensions of offering assistance cross-culturally. This course includes discussion of ethical and personal issues related to intercultural work, gender and development, trauma, program evaluation, etc. Level: Graduate

GYD 595 - Special Topics

Credits: 2 TO 6. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics. Level: Graduate

GYD 596 - Independent Study

Credits: 1 TO 6. (R-6) Offered every term. Directed readings and other individualized study topics guided by faculty. Level: Graduate

GYD 598 - Internship

Credits: 1 TO 6. (R-6) Offered every term. Introduction to service learning in applied settings, usually local. Level: Graduate

GYD 599 - Professional Projects

Credits: 1 TO 2. (R-2) Offered every term. Final Master's project related to internship; may be presented as a grant proposal, policy analysis, or portfolio. Level: Graduate

GYD 695 - Special Topics

Credits: 1 TO 4. (R-4) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics. Level: Graduate

GYD 698 - Intercultural Internship

Credits: 1 TO 4. (R-4) Offered every term. Supervised intercultural experience through Peace Corps, VISTA, or other organization approved by program faculty. Level: Graduate

GYD 699 - Thesis

Credits: 1 TO 2. (R-2) Offered every term. Final master's thesis based on research related to internship placement. Level: Graduate

Education K-12: Library Media

Health Enhancement

HEE 203 - Professional Activities I

Credits: 2. Offered Autumn. The instruction of basic skills for tennis, basketball, and bouldering. Techniques, drills, and strategies will be taught. Demonstration and instruction skills developed. Active participation required.

HEE 204 - Professional Activities II

Credits: 2. Offered Spring. The instruction of basic skills for soccer, volleyball, and softball. Techniques, drills, and strategies will be taught. Demonstration and instruction skills developed. Active participation required.

HEE 233 - Health Issues Child/Adolescents

Credits: 3. Offered every term. Overview of current health issues affecting children and adolescents. Focus is on educational and preventive measures that can be implemented by teachers and schools through comprehensive school health education programs.

HEE 292 - Independent Study

Credits: 1 TO 6. (R-6) Offered every term. Prereq., consent of advisor and instr. Course material appropriate to the needs and objectives of the individual student.

HEE 301 - Meth of Secondary HE

Credits: 3. Offered spring. Application of educational theory in planning, analyzing, and presenting learning experiences to typical and atypical populations in secondary school physical education for students in grades 7-12. Active participation required. Course Attributes: Writing Course-Advanced

HEE 302 - Methods of Instructional Strategies in Elementary PE

Credits: 3. Offered every term. Prereq. admission into Teacher Education Program in the College of Education and HEE 233. Application of educational theory in planning, analyzing, and presenting learning experiences to typical and atypical populations in elementary school physical education for children in grades K-6. Active participation required.

HEE 340 - Methods of Health Education

Credits: 3. Offered autumn even-numbered years. Prereq., admission to the teacher education program. Focus on developing and implementing strategies to teach K-12 health education.

HEE 490 - Undergraduate Research

Credits: 1 TO 3. (R-6) Offered every term. Prereq., consent of instr. Directed individual research and study appropriate to the back ground and objectives of the student.

HEE 492 - Independent Study

Credits: 1 TO 3. (R-6) Offered every term. Prereq., consent of instr. Course material appropriate to the needs and objectives of the individual student.

HEE 498 - Internship

Credits: 2 TO 6. (R-6) Offered every term. Prereq. all HHP options minimum junior standing and ECP 120/121 (or equivalent). Prereqs per option. Exercise Science Applied: KIN 320/321. If internship is coaching or strength & conditioning must also have completed KIN 410 and COA 405. Exercise Science Pre-Professional: KIN 320/321. If internship is cardiac rehab must also have completed KIN 460/483/484. Community Health: CHTH 335.

Supervised field experiences with private businesses, public agencies, or institutions. 45 hours of internship site work = 1 credit. A maximum of 6 credits of Internship 498 may count toward graduation. Students should not be registered for more than 14 credits their internship semester. Course Attributes: Internship graduation limit 6

## Health and Human Performance

### HHP 170 - Peak Court Sports

Credits: 1. Offered every term. Students may include up to but not more than 4 credits earned in HHP 100-179 activity courses in the total number of credits required for graduation. Students graded Credit/No Credit based on participation and a strict attendance policy. For a complete list of all classes offered go to the HHP Activity Program website. Course Attributes: PE Activity Skills Course

### HHP 172 - CFM Crossfit

Credits: 1. Offered every term. Students may include up to but not more than 4 credits earned in HHP 100-179 activity courses in the total number of credits required for graduation. Students graded Credit/No Credit based on participation and a strict attendance policy. For a complete list of all classes offered go to the HHP Activity Program website. Course Attributes: PE Activity Skills Course

### HHP 173 - YMCA Classes

Credits: 1. Offered every term. Students may include up to but not more than 4 credits earned in HHP 100-179 activity courses in the total number of credits required for graduation. Students graded Credit/No Credit based on participation and a strict attendance policy. For a complete list of all classes offered go to the HHP Activity Program website. Course Attributes: PE Activity Skills Course

### HHP 174 - FVB Bowling

Credits: 1. Offered every term. Students may include up to but not more than 4 credits earned in HHP 100-179 activity courses in the total number of credits required for graduation. Students graded Credit/No Credit based on participation and a strict attendance policy. For a complete list of all classes offered go to the HHP Activity Program website. Course Attributes: PE Activity Skills Course

### HHP 238 - Lifeguarding - New Method

Credits: 2. Offered autumn and spring. Prereq., HHP 149 or equiv. skills. Skill development needed for the safe participation in various aquatic activities including the ability of self-recovered rescue of others. Provides the necessary knowledge and skills to serve as a pool lifeguard.

### HHP 440 - Instructor's FA/CPR

Credits: 1. Offered summer. Prereq., HHP 288, 289 or equiv. Provides knowledge and certification to teach the skills of CPR for victims of all ages, use of automated external defibrillator (AED), relief of foreign body airway obstruction (FBAO) and first aid procedures. Upon successful completion of this course students will receive certifications to teach American Heart Association and American Academy of Orthopedic Surgeons and CPR courses at all levels.

### HHP 520 - Educational Research

Credits: 3. Offered every term. Same as C&I and EDLD 520. An understanding of basic quantitative and qualitative research methodology and terminology, particularly as they are used in studies presented in the professional literature. Level: Graduate

### HHP 522 - Cog/Beh Interventions Performance Psychology

Credits: 3. Offered intermittently. Prereq., HHP 470 or equiv. Focus is on cognitive-behavioral interventions specific to enhancing human performance in a variety of individual and group settings. Strategies introduced



based on research from health psychology, sport psychology, exercise psychology, clinical and counseling psychology Level: Graduate

#### HHP 523 - Case Studies in Performance Psychology

Credits: 3. Offered intermittently. Prereq., consent of instr. Through the usage of both real and hypothetical case studies, the course will examine the field of sport/performance psychology and its role in the broader field of sports medicine. Level: Graduate

#### HHP 524 - Ethics & Human Performance

Credits: 3. Offered spring, even numbered years. A critical examination of the ethical issues dominating the field of health and human performance and beyond with special emphasis on developing the conceptual frameworks needed to articulate our concerns and engage in meaningful dialogue with others. Level: Graduate

#### HHP 525 - Advanced Biomechanics

Credits: 3. This course is focused on developing laboratory skills and an advanced understanding of the quantitative and qualitative basis for human motion. Particular emphasis will be placed on the Newtonian mechanics governing biological motion and the roles of the musculo-skeletal, nervous and cardio-vascular systems during human activity. This integrative approach will be used to quantify and understand motion by, and within, the human body; examples will be drawn from the sub-disciplines of clinical gait analysis, gerontology, sports medicine, biological engineering and performance physiology. The lecture portion of this course is co-convened with KIN425 Biomechanics. Level: Graduate

#### HHP 528 - Advanced Exercise Prescription

Credits: 3. Offered spring even years. Prereqs., Graduate status or consent of the instructor. This class presents the principles and practices of advanced athletic performance training in a thorough and useful sequence. Testing and improving power, strength, speed, quickness, coordination, agility, flexibility, local muscular endurance, and cardiovascular aerobic capacity and endurance are covered based on the scientific record. Students will learn how to tailor sport specific training exercises and drills and periodize the training program precisely for peak performance at critical points in the competitive season. Level: Graduate

#### HHP 529 - Advanced Exercise Physiology I

Credits: 3. Offered autumn. Prereq., HHP 377, 378 or equiv. Advanced study of the effect of work, activity and exercise on human biochemistry, metabolism, endocrinology and muscle function. Level: Graduate

#### HHP 530 - Advanced Exercise Physiology II

Credits: 3. Offered spring odd years. Prereq., HHP 529 or equiv. Advanced study of system physiology (circulatory, respiratory and renal function) and environmental factors applied to physical work, activity and exercise Level: Graduate

#### HHP 531 - Lab Procedures In Exercise Science

Credits: 3. Offered autumn. Introduction to common laboratory tools associated with clinical and health assessment techniques, research measures, and data collection. Level: Graduate

#### HHP 540 - Community Health Promotion Strategies

Credits: 3. Offered autumn even-numbered years. Exploration of the role of the health professional in the development and implementation of educational, organizational, economic, and/or environmental strategies that promote individual and community health. Level: Graduate

#### HHP 541 - Program Planning in Community Health

Credits: 3. Prereq. HHP 540. Overview of the issues, approaches, and techniques community health educators and professionals utilize in planning and implementing programs to assist communities in improving health status and reducing risky behaviors and their determinants. Application of program planning research methods including needs analyses, data collection, theory application, strategy development, and evaluation. This course co-convenes with CHTH 445. Level: Graduate Course Attributes: Co-Convened Course

#### HHP 542 - Advanced Study Mind/Body/Spirit

Credits: 3. This course is a comprehensive exploration of the body, mind and spirit relationship. An in-depth examination of the concepts, theoretical application, and research of the mind/body/spirit relationship will be applied to health, prevention of disease, and healing used in contemporary society. Conventional thinking will be stretched & challenged as diverse M/B/S ideas, constructs and paradigms will be considered & discussed. Level: Graduate

#### HHP 544 - Community-Based Participatory Research Methods for Health

Credits: 3. Offered autumn even years. Instruction will present the principles and practice of community-based participatory research methods (CBPR) and mixed-methods approaches that offers strategies for studying and addressing health and social problems. Level: Graduate

#### HHP 545 - Advanced Nutrition Chronic Disease

Credits: 2. Offered intermittently. Instruction will investigate the relationship between nutrition and selected chronic diseases with special emphasis on understanding the research methodology and dissemination of study outcomes reported in the literature for nutrient-disease interactions. Level: Graduate

#### HHP 594 - Seminar

Credits: 1 TO 3. (R-6) Offered spring. Prereq., consent of instr. A review and discussion of current research. Topics vary. Level: Graduate

#### HHP 595 - Special Topics

Credits: 1 TO 6. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics. Level: Graduate

#### HHP 596 - Independent Study

Credits: 1 TO 6. (R-6) Offered every term. Prereq., consent of instr. Course material appropriate to the needs and objectives of the individual student. Level: Graduate

#### HHP 597 - Research

Credits: 1 TO 6. (R-6) Offered every term. Prereq., HHP 486, 520. Directed individual research and study appropriate to the back ground and objectives of the student. Level: Graduate

#### HHP 598 - Internship

Credits: 1 TO 4. (R-4) Offered every term. Prereq., current First Aid and CPR certification. Consent of advisor and instructor. Community Health prereq HHP 540, HHP 544. Supervised field work in public and private agencies and institutions. 45 hours of internship site work = 1 credit. Level: Graduate

#### HHP 599 - Professional Paper

Credits: 1 TO 3. (R-3) Offered every term. Prereq., HHP 486, 520. Preparation of a professional paper appropriate to the needs and objectives of the individual student. Level: Graduate

## HHP 699 - Thesis

Credits: 1 TO 6. (R-6) Offered every term. Preparation of a thesis or manuscript based on research for presentation and/or publication. Level: Graduate

## Health

### HTH 292 - Independent Study

Credits: 1 TO 6. (R-6) Offered every term. Prereq., consent of advisor and instr. Course material appropriate to the needs and objectives of the individual student.

### HTH 370 - Peer Health Education

Credits: 3. Offered spring. Introduction to peer health education strategies and techniques. Instruction in the areas of wellness, drug and alcohol abuse prevention, and sexual assault prevention. Students develop and implement a peer health program focused on prevention of major health problems among college students.

### HTH 395 - Peer Health Practicum

Credits: 1 TO 3. (R-6) Offered autumn and spring. Prereq., HTH 370. Practical experience in planning, coordinating, and implementing health education activities for the campus community. Students address topics related to wellness, drug and alcohol prevention, or sexual assault awareness. Course Attributes:

Internships/Practicums

### HTH 430 - Health and Mind/Body/Spirit

Credits: 3. Offered autumn. Prereq., junior standing. Overview of how the mind/body/spirit relationship affects health. Examination of current research exploring how thoughts, emotions, attitudes, and beliefs influence and mediate health outcome. Exploration of the theoretical applications of mind/body/spirit in health and healing used in contemporary society.

### HTH 465 - Leading Health and, Human Perform Orgs

Credits: 3. Offered every term. Prereq., KIN 205 and junior standing. Leadership, management, organizational structure assertiveness, conflict management, public relations, decision-making, budget management, and a broad overview of human resource management, all as they relate to health and human performance settings.

### HTH 475E - Legal and Ethical Issues Health and Exercise Professions

Credits: 3. Prereq., upper-division or graduate status. Legal bases for litigation in the health and exercise professions, with emphasis on negligence, liability, and risk identification and risk management. Utilizing the Western ethical traditions, the ethics component examines moral/ethical development through the lifespan via analysis of specific human behaviors. Course Attributes: Ethical & Human Values Course

### HTH 481 - Teaching HHP

Credits: 1 TO 3. (R-4) Offered every term. Prereq., consent of instructor. Students assist in the preparation and grading of demonstrations and laboratory assignments, and laboratory instruction of undergraduate students enrolled in HHP laboratory courses. Students are given advanced instruction in principles of the HHP course.

### HTH 492 - Independent Study

Credits: 1 TO 3. (R-6) Offered every term. Prereq., consent of instr. Course material appropriate to the needs and objectives of the individual student.

## HTH 498 - Internship

Credits: 2 TO 6. (R-6) Offered every term. Prereq. all HHP options minimum junior standing and ECP 120/121(or equivalent). Prereqs per option. Exercise Science Applied: KIN 320/321. If internship is coaching or strength & conditioning must also have completed KIN 410 and COA 405. Exercise Science Pre-Professional: KIN 320/321. If internship is cardiac rehab must also have completed KIN 460/483/484. Community Health: CHTH 335. Supervised field experiences with private businesses, public agencies, or institutions. 45 hours of internship site work = 1 credit. A maximum of 6 credits of Internship 498 may count toward graduation. Students should not be registered for more than 14 credits their internship semester. Course Attributes: Internship graduation limit 6

## Kinesiology

### KIN 201 - Basic Exercise Prescription

Credits: 3. Offered every term. Theory, principles, and practice of exercise prescription for aerobic and resistance exercise programs for health, fitness and performance. Students must register for the lecture and a linked lab.

### KIN 205 - Foundations of HHP

Credits: 3. Offered autumn and spring. An overview of the foundational principles comprising the field of HHP with special emphasis on the historical and philosophical foundations, and the evolution of the unity of mind/body concept. Includes an overview of program options, analysis of future directions, and career choices.

### KIN 248 - Principles Optimal Performance for Athletes

Credits: 2. Offered autumn and spring. Introduction to an optimal performance model, with focus upon specific physical, psychological, and environmental factors that contribute to human performance.

### KIN 292 - Independent Study

Credits: 1 TO 6. (R-6) Offered every term. Prereq., consent of advisor and instr. Course material appropriate to the needs and objectives of the individual student.

### KIN 310 - Strength Training & Cond

Credits: 2. This course is designed to introduce students to the fundamentals of aerobic exercise and resistance training related to health, fitness and performance. Subject matter will include, but is not limited to maximizing student involvement in the understanding of physical training and the designing of exercise programs for health (both physical and mental), fitness and performance. This course will lay a basic practical foundation for students to design training programs, understand and design programs for athletic performance and to develop the fundamental theories of training for future coaches.

### KIN 320 - Exercise Physiology

Credits: 3. Offered every term. Prereq., BIOH 370 or BIOH 211N, KIN 201; coreq., KIN 321. Investigation of the physiological changes and the significance of these changes as they occur during physical work, activity and exercise. Focus on basic energy, musculoskeletal, nervous, cardiovascular and respiratory systems as they relate to aerobic and anaerobic exercise. Emphasis will be placed on the response of these systems to both acute exercise, and the adaptations to chronic exercise. Credit not allowed toward graduate degree in the exercise science option in Health and Human Performance.

### KIN 321 - Exercise Physiology Lab

Credits: 1. Offered autumn and spring. Prereq., BIOH 370 or BIOH 211N; coreq., KIN 320. Laboratory session examining the physiological effect of the physical work, activity and exercise on the functions of the human body. Credit not allowed toward graduate degree in the exercise science option in Health and Human Performance.

#### KIN 322 - Kinesiology

Credits: 3. Offered autumn. Prereq., BIOH 211N or 212N or BIOH 370; coreq., KIN 323. Anatomy and kinesiology of the neuromusculoskeletal system and body cavities in relation to movement and function.

#### KIN 323 - Anatomical Kinesiology Lab

Credits: 1. Offered autumn. Prereq., BIOH 211N or 212N or BIOH 370; coreq., KIN 322. Anatomy and kinesiology of the neuromusculoskeletal system and body cavities in relation to movement and function.

#### KIN 330 - Motor Learning and Control

Credits: 3. Offered autumn and spring. Prereq., BIOH 201N or BIOH 365. Focused on developing an understanding of the anatomy and physiology within the nervous system necessary for movement. Establishes an understanding of the basic science involved in the control of motor tasks, and uses this foundation to evaluate case studies that will focus on sport performance, clinical deficits, age-related alterations, learning of motor tasks following injury, and other motor-related tasks.

#### KIN 410 - Advanced Strength Training & Cond

Credits: 3. Offered spring. Prereq., KIN 320, senior or graduate student status. Advanced resistance and aerobic exercise testing and prescription for both healthy and clinical populations.

#### KIN 425 - Biomechanics

Credits: 3. Offered spring. Prereq., KIN 320 (HHP 377) & M 115 (MATH 117) or higher and major in health and human performance or athletic training. Description and analysis of the fundamental principles of human movement. Includes quantitative study of the Newtonian mechanics governing biological motion and the roles of the musculo-skeletal, nervous and cardio-vascular systems during human activity.

#### KIN 440 - Sport Psychology

Credits: 3. Offered autumn. Prereq., upper-division or graduate status. Course content is focused on the historical development of sport psychology, with emphasis upon the major principles and tactics of the discipline, including motivation, confidence, imagery, leadership, and team building.

#### KIN 447 - Analytical & Communicative Techniques

Credits: 3. Offered every term. Prereq., WRIT 101, WRIT 121 or WRIT 201. Analysis and communicative critique of literature, cinema, and other forms of popular media that contain allegorical life themes. Substantial reading, speaking and writing component. Emphasis on improving and maintaining communication skills. Course

Attributes: Writing Course-Advanced

#### KIN 460 - ECG Assessment

Credits: 2. Offered autumn. Prereq., junior, senior, or graduate status. Laboratory sessions combined with class sessions to understand electrocardiography and the assessment of electrocardiograms, both at rest and during exercise.

#### KIN 480 - Teaching Anatomy, Physiology

Credits: 4. (R-4) Offered every term. Prereq., student must have received at least a "B" in Human Anatomy and Physiology and consent of instructor. Students assist in preparation and grading of demonstrations and

laboratory assignments, and provide laboratory instruction of undergraduate students enrolled in BIOH 201N/202N-211N/212N. Students are given advanced instruction in principles of human anatomy and physiology.

#### KIN 483 - Exercise Disease & Aging

Credits: 3. Offered spring. Prereq., KIN 320,321, 460; coreq. KIN 484. Focus on guidelines for exercise testing and prescription for individuals with chronic disease including heart disease, diabetes, hypertension, arthritis, osteoporosis, elderly and pulmonary disease. Class requires 25 assigned hours of service learning. Covers material necessary for ACSM clinical certification exam when combined with KIN 201, 320, 321, 460, and 484.

#### KIN 484 - Exercise Disease & Aging Lab

Credits: 1. Offered spring. Prereq., KIN 320, 321; coreq., KIN 483. Laboratory sessions focus on practical exercise testing and prescription for individuals with chronic disease including coronary heart disease, diabetes, hypertension, arthritis, osteoporosis, elderly and pulmonary disease; basic ECG testing and analysis. Covers material necessary for ACSM clinical certification exam when combined with KIN 201, 320, 321, 460, and 483.

#### KIN 490 - Undergraduate Research

Credits: 1 TO 3. (R-6) Offered every term. Prereq., consent of instr. Directed individual research and study appropriate to the back ground and objectives of the student.

#### KIN 492 - Independent Study

Credits: 1 TO 3. (R-6) Offered every term. Prereq., consent of instr. Course material appropriate to the needs and objectives of the individual student.

#### KIN 498 - Internship

Credits: 2 TO 6. (R-6) Offered every term. Prereq. all HHP options minimum junior standing and ECP 120/121 (or equivalent). Prereqs per option. Exercise Science Applied: KIN 320/321. If internship is coaching or strength & conditioning must also have completed KIN 410 and COA 405. Exercise Science Pre-Professional: KIN 320/321. If internship is cardiac rehab must also have completed KIN 460/483/484. Community Health: CHTH 335.

Supervised field experiences with private businesses, public agencies, or institutions. 45 hours of internship site work = 1 credit. A maximum of 6 credits of Internship 498 may count toward graduation. Students should not be registered for more than 14 credits their internship semester. Course Attributes: Internship graduation limit 6

#### KIN 499 - Capstone

Credits: 1 TO 3. (R 6) Offered autumn. Prereq., consent of instr. Independent work under the University omnibus option. See index.

### Nutrition

#### NUTR 221N - Basic Human Nutrition

Credits: 3. Offered autumn and spring. The principles of science as applied to current concepts and controversies in the field of human nutrition. Course Attributes: Practical Nursing Prog Rqrmnt Registered Nursing Prog Rqrmnt Natural Science Course

#### NUTR 411 - Nutrition For Sports & Exercise

Credits: 3. Offered autumn and spring. Prereq., KIN 320 and junior standing. Nutritional parameters of athletic performance including intervention planning, energy production, the energy nutrients, vitamins and minerals,

principles of balanced diets, timing and composition of intakes, hydration, weight management strategies, and nutritional needs for special situations.

## Education K-12: Library Media

### LIBM 463 - Library Collection Dev

Credits: 3. Offered autumn. Focus on building and maintaining a foundation print and non-print media collection; devising a selection policy; demonstrating media use in support of the curriculum; and compiling annotated bibliographies.

### LIBM 464 - Reference Resources

Credits: 3. Offered intermittently. Evaluation, selection, and use of basic reference resources. Teaching of media skills, information negotiation, search strategies, database use, and information services.

### LIBM 465 - Lib Media Tech Proc

Credits: 3. Coreq., C&I 488. Focus on the technical processing and organization of print and non-print materials utilizing descriptive cataloging, application of AACR2 and the Dewey Decimal System, Library of Congress subject headings, and MARC21 records.

### LIBM 466 - Libraries & Technology

Credits: 3. Offered Summer. Uses of digital technologies in all aspects of library operations, including cataloging and circulation, collection development, reference services, and administration. Level: Undergraduate, Graduate.

### LIBM 468 - Admin & Assess of Lib Med

Credits: 3. Administrative and management procedures; assessment in terms of state, regional, and national guidelines for library media programs and services.

### LIBM 491 - Special Topics

Credits: 1 TO 6. (R-9) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics. Level: Undergraduate, Graduate.

### LIBM 492 - Independent Study

Credits: 1 TO 3. (R-6) Offered every term. Prereq., consent of instr. Course material appropriate to the needs and objectives of the individual student.

### LIBM 495 - Practicum

Credits: 3. Offered spring and summer. Prereq., 19 credits in library Media and consent of instr. Supervised field experience in selected phases of library media center operations, including assessment. Course Attributes: Internships/Practicums

## Department Faculty

### Professor

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- Al Yonovitz, Professor / Audiologist
- Annie Sondag, Professor

- Arthur Miller, Professor
- Blakely Brown, Professor
- Brent Ruby, Professor
- Catherine Jenni, Professor
- Charles Dumke, Professor
- Clarence Burns, Professor
- David Erickson, Professor
- Georgia Cobbs, Department Chair / Professor
- Jan LaBonty, Professor
- John Sommers-Flanagan, Professor
- Julie Bullard, Professor
- Laura Dybdal, Professor
- Lisa M. Blank, Professor
- Rick Van den Pol, Director, Institute for Educational Research and Service
- Steven Gaskill, Professor
- Trent Atkins, Professor
- William Mccaw, Professor

## Associate Professor

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- Adrea Lawrence, Associate Professor and Associate Chair
- Amy Glaspey, Department Chair / Associate Professor
- Ann Garfinkle, Associate Professor
- Charles Palmer, Associate Professor
- Fletcher Brown, Associate Professor
- Frances O'Reilly, Associate Professor
- John Matt, Department Chair / Associate Professor
- Julie Wolter, Graduate Program Director / Associate Professor
- Kirsten Murray, Department Chair / Associate Professor
- Lucy Hart Paulson, Associate Professor
- Martin Horejsi, Associate Professor
- Matthew Bundle, Associate Professor
- Matthew Schertz, Associate Professor
- Morgen Alwell, Associate Professor
- Patty Kero, Associate Professor
- Sandra Williams, Associate Professor
- Scott Richter, Department Chair / Associate Professor
- Valerie Moody, Professor

## Assistant Professor

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- Catherine Off, Assistant Professor
- Christine Merriman, Director of Clinical Education
- Daniel Lee, Assistant Professor
- Ginger Collins, Assistant Professor
- Jennifer Schoffer Closson, Clinic Director / Assistant Professor
- Jessica Gallo, Assistant Professor



- Jessica Moore, Clinical Adjunct Instructor
- Jingjing Sun, Assistant Professor of Educational Psychology
- Kate Brayko, Assistant Professor
- Laurie Slovarp, Ph.D., Assistant Professor
- Lindsey Nichols, Assistant Professor / GYD Director
- Lucila Rudge, Assistant Professor
- Tracy Missett, Assistant Professor
- Veronica Johnson, Assistant Professor

## Adjunct

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- Dana Fitz Gale, Adjunct Assistant Professor
- Jenna Griffin, Clinical Educator / Adjunct Asst Professor
- Jessica Reynolds
- Julie Doerner, CSD Adjunct Instructor; Rural Instit MonTECH Clinical Coord
- Mary Morrison, CSD Adjunct Instructor; Rural Instit PEPNET Director
- Megan Eandi, Clinical Educator
- Nancy Dold, Adjunct Assistant Professor
- RoseMary Johnson, Adjunct Assistant Professor
- Scott Hohnstein, Adjunct Assistant Professor

## Affiliates

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- Sara Polanchek, Clinical Director

# College of Forestry and Conservation

**Wayne Freimund, Interim Dean**

**Mike Patterson, Associate Dean**

The undergraduate curricular programs at the College of Forestry and Conservation (CFC) provide the knowledge and skills for students to become effective natural resource professionals. They offer a sequence of learning experiences that build the necessary confidence and critical thinking capabilities to help solve some of humanity's most pressing problems in the stewardship of our shared natural heritage.

Undergraduate programs at the College of Forestry and Conservation have evolved into a unique action-oriented, interdisciplinary experience where students integrate real-world issues into their coursework. Students will utilize the latest technologies in the assessment and analysis of natural resource challenges, and they will simultaneously apply this learning in multiple field settings across the unparalleled natural settings of Montana.

The five undergraduate majors in the College are science degrees, leading to a Baccalaureate of Science (B.S.) degree. These majors are: Forestry; Parks, Tourism, and Recreation Management; Wildlife Biology; Resource

Conservation; and Ecological Restoration. These majors provide a strong foundation in knowledge about natural systems, science, analytical skills, and policy, but each is tailored to the specialized needs of a particular career track or research discipline in the natural resources management professions. Students have an opportunity to emphasize the disciplinary concentration of their choosing, but all students will receive a balance of ecological, physical, and social sciences.

Students uncertain about which specific major best meets their interests and needs will find that the ability to move between majors early in their student career is facilitated by a common foundational core of coursework. Each major's curricular program is designed to fulfill the broad educational goals for all graduates of the University of Montana, as well as the specific disciplinary requirements of civil service and professional accrediting organizations.

## *Preparation to Enter the College of Forestry and Conservation*

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Students planning to enter the College of Forestry and Conservation should attain a sound background in English, social studies, mathematics, biology, and other sciences. Entering freshmen and non-resident transfer students will be admitted in accordance with general university admission requirements listed previously in this catalogue. Resident transfer students or current UM students wanting to change their major to the College of Forestry and Conservation must have a grade point average of 2.0 or higher to be admitted.

## *Educational Framework at the College of Forestry and Conservation*

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Students at the College of Forestry and Conservation are expected to demonstrate a range of capabilities before graduation so they can better address the multiple demands facing modern natural resource managers. The College fosters learning through a combination of innovative teaching and scholarship with a focus on state of the art knowledge in the major fields and emerging natural resource challenges. Each major's curriculum follows a similar seven part structure that encourages the sequenced development of foundational knowledge, applied skills, and creative problem-solving. The following description illustrates how the curricula are organized to present the most efficient and engaging pathway to the full development of student capabilities:

### *Foundations of Science*

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Students will be required to have a solid understanding of the primary physical, chemical, and biological drivers of natural systems. Required for all students are an introductory course in inorganic chemistry and a basic biological science course (there are several introductory biology classes that will apply, depending on a student's major). Students in the Wildland Restoration major and the Forest Operations option within the Forest Management major will also take an introductory course in physics. Parks, Tourism, and Recreation Management majors will take introductory coursework in psychology or sociology to understand social drivers in relation to natural

systems. Additionally, all students are encouraged to take one of the four introductory courses offered by the College that draw together multiple disciplines to demonstrate the historical and cultural dimensions of conservation: The Nature of Montana (NRSM 121S); Careers in Natural Resources (NRSM 180); Wildlife and People (WILD 105N); or International Forestry (NRSM 170). In the sophomore year most students will take an introductory course in soils to become familiar with the cycling of energy and nutrients in terrestrial ecosystems while students in the Wildlife Biology major will take coursework in molecular biology and genetics. In their junior year all students take an upper division ecology class. The University's general education requirements and specific College majors ensure all students take additional natural and social science classes to provide the foundations necessary to understand and manage the natural and social systems underlying human uses of natural resources.

## Quantitative and Analytical Skills

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All students at the College will attain the quantitative analytical and measurement foundations needed for their professional or research career path. The freshmen level quantitative requirement rests on a proficiency in mathematics that is obtained through one of two routes depending on major: a college algebra/linear math/probability track or an introductory calculus track. All sophomore students take a statistics class which many fulfill through a special course in the analysis of multiple forms of measurement of natural resource characteristics, called Biometrics. Although not required for all majors, most students decide to take a special course in mapping that combines the common applications of geographic information systems (GIS) and the basic attributes of spatial analysis.

## Applied Field Skills

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A tremendous advantage of an education at the College of Forestry and Conservation is the proximity of an unlimited field laboratory in both the managed and untrammelled landscapes of Montana. All undergraduates will have multiple opportunities to learn in field settings as a part of lab sections associated with many of CFC's courses. Some specific academic opportunities, such as the College's Wilderness and Civilization Program, will take students on extended backcountry trips to gain first-hand knowledge of wild settings. Exceptional hands-on learning experiences are provided at the College's Lubrecht Experimental Forest located less than 30 miles from campus on the Blackfoot River. Since students must demonstrate competency and confidence in outdoor field work to be a successful natural resource professional, students are required to select a sophomore-level field measurements course within their major. Although advanced transfer students (>59 transfer credits) to the College; Parks, Tourism, and Recreation Students; and Wildlife Biology students may apply other relevant experiences to their field training requirement, completion of a field measurements course is expected before students may enroll in upper division courses, as the needed skills to succeed in subsequent, more advanced field labs depend on a solid core of field capabilities.

## Communication

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Effectiveness in addressing our shared problems in natural resource management depends on a person's ability to communicate. College of Forestry and Conservation students will graduate with considerable training in written communication with both lower-division requirements at the 200-level and a series of upper division courses where writing constitutes the major part of course expectations. Each major in the College provides a "distributed writing" menu for students entering into upper-division courses, such that each student will take at least three classes where writing skills are evaluated. All students take a public speaking class. Students wishing to gain more experience in public speaking and communication can also take a special class Natural Resources Interpretation (PTRM 310 (RECM 310)).

## Professional Specialization

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Each academic major in the College contains a sequence of courses and learning experiences tailored to the student's specific professional aspirations. Clusters of courses within a major prepare students to obtain the necessary knowledge and professional competencies to perform the tasks of a modern resource manager or research scientist. Course work combines biophysical and social science training to allow students to recognize and navigate the complexities and context of conservation sciences and natural resources management. Thus, each major has courses representing both ecological and policy development processes, as well as a progression of classes covering the knowledge areas and topics of major natural resources disciplines. Students will take a core of required courses (described in the sections below) as well as a balanced selection of "professional electives" to acquire sufficient balance and depth in their chosen field to emerge with an identified professional specialty.

## Work Experience and Service Learning

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Students at the College of Forestry and Conservation will apply what they have learned in real-world settings prior to graduation. This work experience can be obtained in many ways, via internships, summer employment, study abroad opportunities, or specially designed "service learning" courses. Service experiences will allow students to obtain credit, learn new material, and offer critical work to established organizations to advance conservation goals. In general, requirements for work experience or internships will be counted based on the number of hours worked over the course of a student's entire undergraduate career, with 400 hours or more of work necessary for graduation.

## Capstone Experience

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Each academic major in the College offers an opportunity for students to synthesize previous learning in a real-world project via either an undergraduate research project or the completion of a special, integrative "capstone" course. Undergraduate research projects are designed through close supervision of a student's academic advisor, while the capstone courses bring together a team of faculty who facilitate student oriented problem solving through a focus on an applied management problem or real world case studies that offer vital experience in the preparation of students for their professional careers.

# Other University-wide Requirements for Academic Achievement

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The University of Montana has established standards for graduation of all students that include demonstrated proficiencies in oral and written communication and symbolic systems as well as a selection of diverse learning experiences identified as "general education courses." The College's expectations for writing and quantitative skills more than fulfill university-wide requirements for communication and symbolic systems, and many of the courses offered by CFC also fulfill the categories within general education requirements. All CFC majors also offer sufficient opportunity for students to choose among the full range of UM courses as "free electives," such that each person might be able to explore new areas of learning at their own discretion.

## Student Advising

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All College of Forestry and Conservation students will have a full-time faculty advisor as well as the extensive advising support provided by the College's Office of Student Services. Students are paired with a faculty advisor who matches their academic and professional interests and serves as a mentor and advocate for students as they progress through individual academic achievements. Students may change their advisor at any time as their specific interests develop or change. New students needing an advisor and current students who wish to change advisors should contact the College's Office of Student Services. Students are required to consult with their advisors before each registration period but remain responsible for ensuring they fulfill the published requirements for graduation.

## Graduation Auditing

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All students will complete a graduation audit in the semester prior to their graduation to make sure that they have a sure pathway for successful completion of their chosen major.

# Ecological Restoration

## Bachelor of Science in Ecological Restoration

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Ecological restoration – the process of assisting in the repair of damaged ecosystems— is one of the fastest growing areas of natural resource management. With increasing interest, there is a corresponding need for trained professionals who understand not only the science of restoration ecology but also the management practices and social factors that lead to successful project implementation. The College of Forestry and Conservation offers a Bachelor of Science and a minor in Wildland Restoration (for more information see: <http://www.cfc.umt.edu/wildland/>).

## Degree Options

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## Bachelor of Science in Ecological Restoration (Aquatic and Terrestrial Options)

The major in Ecological Restoration prepares students to tackle the complex challenges associated with repairing degraded ecosystems. Students select one of two options: the *Terrestrial Option*, which focuses on restoration of forests, grasslands, and other terrestrial ecosystems; or the *Aquatic Option* which focuses on stream, wetland, and groundwater restoration. Both options provide in-depth training in the science of restoration ecology and the management activities and human dimensions of restoration practice. Students engage in field-based learning, contribute to cutting-edge restoration projects, and are challenged to apply ecological theory to restoration practice. The major requires completion of a nine-credit restoration capstone, during which students gain hands-on real-world experience planning and implementing restoration projects in partnership with natural resource management agencies and organizations in western Montana.

A degree in Ecological Restoration prepares students for careers as restoration practitioners with non-profit, private, or governmental agencies and for graduate school in ecology or natural resource management. Students who graduate with this major may qualify for the following federal civil service jobs: biological technician (Series 0404), ecologist (Series GS-408), forester (Series G-0460), hydrologist (Series GS-1315), range technician (Series GS-0455), and soil conservationist (Series GS-0457). More information on federal civil service requirements can be found at: <http://www.opm.gov/qualifications/standards/indexes/alph-ndx.asp>.

### Minor in Ecological Restoration

In addition to the major, the Ecological Restoration program also offers a minor for students who wish to gain basic competency in restoration while pursuing another UM major.

### College of Forestry & Conserv Catalog Year: 2015-2016

Degree Type: Bachelor of Science    Level: Major    Subject: **Ecological Restoration**    Option: **Aquatic Total**

Credits: 89    Cumulative GPA Required: 2.0

Lower Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C-    Number of Credits 9

Course Listing

NRSM 121S	Nature of Montana	3	F
NRSM 200	Nat.Resource Professional Wrtg	3	F,S
NRSM 265	Elements of Ecological Restora	3	F

Commentary: Can take WRIT 325 Science Writing (honors) in place of NRSM 200; Can take NRSM 170 Intern'l Environ Change OR NRSM 180 Careers in Natural Resources in place of NRSM 121S

Commentary: Lower Division Core

Category Name: Outside Major Required Courses Rule: Must take all courses

Criterion: C-    Number of Credits 39

Course Listing

BIOB 160N	Principles of Living Systems	4	F,SU
BIOB 260	Cellular and Molecular Biology	4	F,SU
BIOB 272	Genetics and Evolution	4	S
CHMY 121N	Intro to General Chemistry	3	F,S
CHMY 123N	Intro to Organic & Biochem	3	F,S
COMX 111A	Intro to Public Speaking	3	F,S,SU
GEO 101N	Intro to Physical Geology	3	F,S
M 171	Calculus I	4	F,S
M 172	Calculus II	4	F,S
STAT 216	Introduction to Statistics	4	F,S
WRIT 101	College Writing I	3	F,S,SU

Commentary: Can take FORS 201 Biometrics OR WILD 240 Into to Biostats in place of STAT 216; can take THTR 120 Acting I in place of COMX 111A

Commentary: Upper Division Core

Category Name: Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 21

Course Listing

NRSM 344	Ecol. RestorationCapstone	5	
NRSM 385	Watershed Hydrology	3	F,S
NRSM 422	Nat Res Policy/Administration	3	F,S
NRSM 465	Restoration Ecology	3	
NRSM 489E	Ethics Forestry & Conservation	3	F
NRSM 494	Seminar in Ecol Restoration	1	S
NRSM 495	Ecological Restor Practicum	3 To 6	F,S,SU

Commentary: Can take NRSM 449 in place of NRSM 489E

Commentary: Upper Division Core

Category Name: Outside Major Required Courses Rule: Must take all courses

Criterion: C- Number of Credits 8

Course Listing

BIOE 370	General Ecology	3	F,S
BIOE 428	Freshwater Ecology	5	F

Commentary:

Upper Division Electives

Category Name: Restoration Aquatic Electives Rule: Must take as least 9 credits

Criterion: C- Number of Credits 9

BIOE 342	Field Ecology	5	
BIOE 439	Stream Ecology	3	
BIOE 451	Landscape Ecology	3	
BIOL 435	Comparative Animal Physiology	3	SU

BIOO 340	Biology and Mgmt of Fishes	4	F
FORS 250	Intro to GIS for Forest Mgt	3	F,S
GEO 228	Earth Surface Processes	2	
GEO 420	Hydrogeology	4	F
GEO 421	Hydrology	3	
GEO 460	Process Geomorphology	4	FE
NRSM 210N	Soils, Water and Climate	3	F
NRSM 408	Global Cycles and Climate	3	
NRSM 418	Ecosystem Climatology	3	
NRSM 455	Riparian Ecology & Management	3	SO
NRSM 485	Watershed Management	3	I

Commentary: WILD 485 Aquatic Macroinvertebrate Ecol. fall only

Upper Division Electives

Category Name: Social Science Elective Courses Rule: must take at least 3 credits

Criterion: C- Number of Credits 3

Course Listing

ECNS 433	Economics of the Environment	3	I
FORS 320	Forest Environmental Economics	3	F
GPHY 335	Water Policy	3	
NRSM 379	Collab in Nat Res Decisions	3	S
NRSM 426	Climate and Society	3	S
NRSM 475	Environment & Development	3	S

Commentary:

Degree Specific Writing

Category Name: Writing Requirements

Rule: Must complete the following subcategories

Course Listing Commentary:

Subcategory Name: Lower Division Writing Rule: Complete all courses

Criterion: C- Number of Credits 6

Course Listing

NRSM 200	Nat.Resource Professional Wrtg	3	F,S
WRIT 101	College Writing I	3	F,S

Commentary:

Subcategory Name: Upper Division Writing Rule: Must take at least three courses

Criterion: C- Number of Credits 9

Course Listing

BIOE 428	Freshwater Ecology	5	F
FORS 330	Forest Ecology	3	F,S
NRSM 344	Ecol. RestorationCapstone	5	



NRSM 379 Collab in Nat Res Decisions 3 S  
NRSM 495 Ecological Restor Practicum 3 To 6 F,S,SU  
NRSM 499 Senior Thesis 1 To 3 I

Commentary:

Degree Specific Mathematics

Category Name: Math requirements for major Rule: Must take all courses

Criterion: C- Number of Credits 8

Course Listing

M 171 Calculus I 4 F,S

M 172 Calculus II 4 F,S

Commentary:

Degree Specific Symbolic Systems Category Name: Symbolic System

Rule: Must take one of the following courses

Criterion: C- Number of Credits 3-4

FORS 201 Forest Biometrics 3 F

STAT 216 Introduction to Statistics 4 F,S

WILD 240 Intro to Biostatistics 3 FE

Commentary:

Degree Specific Expressive Arts

Category Name: Expressive Arts Requirement for Major Rule: must take one of the following course

Criterion: C- Number of Credits 3

Course Listing

COMX 111A Intro to Public Speaking 3 F,S

THTR 120A Introduction to Acting I 3 F,S

Commentary:

Degree Specific Social Sciences Category Name: Social Science Rule: May take the following course

Criterion: C- Number of Credits 3

Course Listing

NRSM 121S Nature of Montana 3 F Commentary:

Commentary:

Degree Specific Ethical & Human Values

Category Name: Ethical & Human Values Elective within Major Rule: must take one of the following course

Criterion: C- Number of Credits 3

Course Listing

NRSM 449E Climate Change Ethics/Policy 3 F

NRSM 489E Ethics Forestry & Conservation 3 F

Commentary:

Degree Specific Natural Sciences

Rule: Must take all courses