

DEPARTMENT OF HEALTH AND EXERCISE SCIENCE



Office in Health and Exercise Science Complex, B220 Moby
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Professor Barry Braun, Department Head

Undergraduate Majors

- Major in Health and Exercise Science
 - Health Promotion Concentration
 - Sports Medicine Concentration

Graduate Graduate Programs in Health and Exercise Science

The department offers two graduate degrees: the Master of Science in Health and Exercise Science, and the Doctor of Philosophy in Human Bioenergetics. Students interested in a Master's degree in Public Health with a focus in Health and Exercise Science can refer to the School of Public Health (<http://publichealth.colostate.edu>). Students interested in graduate work should refer to the Graduate and Professional Bulletin and the Department of Health and Exercise Science (<http://hes.chhs.colostate.edu>).

Master Programs

- Master of Science in Health and Exercise Science, Plan A
- Master of Science in Health and Exercise Science, Plan B

Ph.D.

- Ph.D. in Human Bioenergetics

Courses Health and Exercise Science (HES)

HES 100A Beginning Physical Education: Aerobic Exercise Credit: 1 (0-3-0)

Course Description: Physical activities for the development of personal motor skills.

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: S/U Sat/Unsat Only.

Special Course Fee: No.

HES 100C Beginning Physical Education: Soccer Credit: 1 (0-3-0)

Course Description: Physical activities for the development of personal motor skills.

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Modes: S/U within Student Option, Trad within Student Option.

Special Course Fee: No.

HES 100J Beginning Physical Education: Volleyball Credit: 1 (0-3-0)

Course Description: Physical activities for the development of personal motor skills.

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Modes: S/U within Student Option, Trad within Student Option.

Special Course Fee: No.

HES 100M Beginning Physical Education: Basketball Credit: 1 (0-3-0)

Course Description: Physical activities for the development of personal motor skills.

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Modes: S/U within Student Option, Trad within Student Option.

Special Course Fee: No.

HES 100N Beginning Physical Education: Racquetball Credit: 1 (0-3-0)

Course Description: Physical activities for the development of personal motor skills.

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Modes: S/U within Student Option, Trad within Student Option.

Special Course Fee: No.

HES 1000 Beginning Physical Education: Weight Training Credit: 1 (0-3-0)

Course Description: Physical activities for the development of personal motor skills.

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Modes: S/U within Student Option, Trad within Student Option.

Special Course Fee: No.

HES 102C Physical Education Activities: Special Activities Credit: 1 (0-3-0)

Course Description: Physical activities for the development of personal motor skills.

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: S/U Sat/Unsat Only.

Special Course Fee: No.

HES 102F Physical Education Activities: Conditioning and Fitness Credit: 1 (0-3-0)

Course Description: Physical activities for the development of personal motor skills.

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Modes: S/U within Student Option, Trad within Student Option.

Special Course Fee: No.

HES 102G Physical Education Activities: Athletics Credit: 1 (0-3-0)

Course Description: Physical activities for the development of personal motor skills.

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: S/U Sat/Unsat Only.

Special Course Fee: No.

HES 120 Introduction to Health and Exercise Science Credit: 1 (1-0-0)

Course Description: Health and Exercise Science major, career options, campus resources, tools for academic success, various health-related topics.

Prerequisite: None.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 145 Health and Wellness Credits: 3 (3-0-0)

Course Description: Personal health behaviors and personal choice in response to wellness.

Prerequisite: None.

Registration Information: Credit not allowed for both HES 145 and HES 143. Sections may be offered: Online.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 207 Anatomical Kinesiology Credits: 3 (2-2-0)

Course Description: Anatomical, physiological, and mechanical fundamentals of human movement.

Prerequisite: MATH 125, may be taken concurrently.

Registration Information: Must register for lecture and laboratory.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 232 Techniques of Teaching Group Exercise Credit: 1 (0-2-0)

Course Description: Learn practical skills for the instruction of various group fitness activities. Emphasis is on physiological principles related to group fitness, as well as choreography, safety, and modifications for diverse populations and current trends.

Prerequisite: HES 207.

Registration Information: Credit allowed for only one of the following: HES 232, HES 232B, or HES 332H.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 232A Techniques of Teaching Physical Activity: Weight Training Credit: 1 (0-2-0)

Course Description: Practical and theoretical aspects of teaching individual sports with special emphasis on materials, teaching techniques, and analyzing skills.

Prerequisite: None.

Registration Information: Credit not allowed for both HES 232A and HES 332F.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 240 First Aid and Emergency Care Credits: 2 (1-2-0)

Course Description: Principles, applied techniques emphasizing emergency rescue and care. Meets requirements for Red Cross Advanced First Aid and Emergency Care Credential.

Prerequisite: None.

Registration Information: Must register for lecture and laboratory.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 303 Biomechanics and Neurophysiology Credits: 3 (3-0-0)

Course Description: Study and elementary analysis of human motion based on anatomical, neurophysiological, and mechanical principles.

Prerequisite: HES 207.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 307 Biomechanical Principles of Human Movement Credits: 4 (3-2-0)

Course Description: Study and elementary analysis of human motion based on anatomical and mechanical principles.

Prerequisite: (HES 207 or BMS 301) and (PH 121 or PH 141).

Registration Information: Must register for lecture and laboratory.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 309 Methods of Coaching Credits: 2 (2-0-0)

Course Description: Preparation to coach in an interscholastic athletic situation.

Prerequisite: None.

Registration Information: Sections may be offered: Online.

Term Offered: Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 319 Neuromuscular Aspects of Human Movement Credits: 4 (3-2-0)

Course Description: Neuromuscular anatomy and physiology of human movement. Applied/integrated topics: aging, muscle fatigue, training, force control, and neuromuscular disease.

Prerequisite: BMS 300 and HES 207.

Registration Information: Must register for lecture and laboratory.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 340 Exercise Prescription Credits: 3 (2-2-0)

Course Description: Theory and practice of exercise prescription for healthy individuals, cardiac patients, and other special populations according to the American College of Sports Medicine (ACSM) guidelines. Includes the practice of proper lifting and spotting techniques, manipulation of training variables, and design of safe, effective, and efficient individual workout programs.

Prerequisite: BMS 300 with a minimum grade of C and FSHN 150 with a minimum grade of C and HES 145 with a minimum grade of C and HES 207 with a minimum grade of C.

Registration Information: Must register for lecture and laboratory.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 345 Population Health and Disease Prevention Credits: 3 (3-0-0)

Course Description: Causes of disease throughout the lifespan and interventions designed to prevent disease.

Prerequisite: HES 145.

Registration Information: Sections may be offered: Online.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 354 Theory of Health Behavior Credits: 3 (3-0-0)

Course Description: Health behavior (HB) theories and their application to health promotion (HP) programs. Multi-level factors that interactively impact human HBs, theoretical foundations for these factors, and the relationship between HBs & selected health outcomes. Discuss application of HB theories, and examine HP programs that have applied these theories in different settings and high risk populations.

Prerequisite: HES 145 or PSY 100.

Registration Information: Junior standing.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 355 Integration of Health Behaviors Credits: 3 (3-0-0)

Course Description: Designed to guide students in applying their knowledge of health behavior change to individuals with various health challenges. Explores a variety of health topics including understanding stress and coping and managing stress, behavioral factors in chronic disease, and behavioral health.

Prerequisite: HES 340 and HES 354.

Registration Information: Completion of 60 credits.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 379 Psychology and Sport Credits: 3 (3-0-0)

Course Description: Psychological and social implications involved in teaching physical education and coaching athletics.

Prerequisite: PSY 100 and HES 145 with a minimum grade of C and HES 207 with a minimum grade of C and BMS 300 with a minimum grade of C.

Registration Information: Must have taken the following courses and maintained a minimum GPA of 2.500 in them: HES 145; HES 207; BMS 300.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 386 Practicum—Adult Fitness Credits: 2 (1-2-0)

Course Description: Adult fitness.

Prerequisite: HES 232 and HES 340 with a minimum grade of C.

Registration Information: Must have earned a cumulative 2.750 GPA in: BMS 300, FSHN 150, HES 145, and HES 207. Must register for lecture and laboratory.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 403 Physiology of Exercise Credits: 4 (3-2-0)

Course Description: Effects of exercise on tissues, organs, and systems of the body.

Prerequisite: (BMS 300 or BMS 360) and (LIFE 102).

Registration Information: Must register for lecture and laboratory.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 405 Exercise Testing Instrumentation Credits: 2 (1-2-0)

Course Description: Theory and operation of devices commonly employed in quantifying factors related to exercise.

Prerequisite: HES 403.

Registration Information: Must register for lecture and laboratory.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 410 Bioethics: Concepts and Controversies Credits: 3 (2-0-1)

Course Description: Origins of bioethics and analysis of cases/controversies in contemporary bioethics.

Prerequisite: PHIL 205.

Registration Information: PHIL 205 or 7 credits of AUCC-science category 3A.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 420 Electrocardiography and Exercise Management Credits: 3 (2-2-0)

Course Description: Interpretation of 12-lead ECG tracings, administering exercise tests, and prescribing exercise program for healthy individuals and special populations.

Prerequisite: BMS 300.

Registration Information: Must register for lecture and laboratory.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 434 Physical Activity Throughout the Lifespan Credits: 3 (3-0-0)

Course Description: Impact of physical activity on biology and physiology of human development and aging processes.

Prerequisite: BMS 300 or HDFS 201.

Registration Information: Junior standing. Sections may be offered: Online. Credit not allowed for both HES 434 and HES 444.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 444 Successful Aging: Role of Physical Activity Credits: 2 (2-0-0)
Course Description: Biology and physiology of healthy aging and impact of disease and physical activity on aging processes.

Prerequisite: LIFE 102 or BZ 110.

Registration Information: Sections may be offered: Online.

Terms Offered: Fall, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 455 Health Promotion Programming Credits: 3 (3-0-0)

Course Description: Investigation of established health promotion programs with special emphasis on design, implementation, and evaluation of programming models.

Prerequisite: HES 355 and HES 386 and HES 403.

Registration Information: Senior standing. Credit not allowed for both HES 455 and HES 456.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 476 Exercise and Chronic Disease Credits: 3 (3-0-0)

Course Description: Interaction of physical activity with pathophysiology and treatment of chronic diseases and conditions.

Prerequisite: BC 351 and FSHN 350 and HES 403.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 484 Supervised College Teaching Credits: Var[1-5] (0-0-0)

Course Description:

Prerequisite: None.

Registration Information: Maximum of 10 credits allowed in course. A maximum of 10 combined credits for all 384 and 484 courses are counted towards graduation requirements.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 486 Practicum–Wellness Program Management Credits: 3 (1-4-0)

Course Description:

Prerequisite: HES 386.

Registration Information: Junior standing. Must register for lecture and laboratory. Credit not allowed for both HES 486 and HES 486B.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 487 Internship Credits: 12 (0-0-36)

Course Description: Practical application of knowledge, skills, and leadership in a professional situation.

Prerequisite: None.

Registration Information: Senior standing. Consent of department.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 492 Health and Exercise Science Seminar Credits: 3 (0-0-3)

Course Description: Integration and reflection on health and exercise science disciplinary knowledge.

Prerequisite: HES 307 and HES 319 and HES 340 and HES 403.

Registration Information: Senior standing.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 495A Independent Study: Health Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 495B Independent Study: Biomechanics Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 495C Independent Study: Exercise Science Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 495D Independent Study: Neuromuscular Physiology Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 495E Independent Study: Honors Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 496A Group Study: Health Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 496B Group Study: Athletics Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 496C Group Study: Biomechanics Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 496D Group Study: Exercise Science Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 496E Group Study: Neuromuscular Physiology Credits:**Var[1-18] (0-0-0)****Course Description:****Prerequisite:** None.**Terms Offered:** Fall, Spring, Summer.**Grade Mode:** Instructor Option.**Special Course Fee:** No.**HES 520 Advanced Exercise Testing and Prescription Credits: 3 (2-2-0)****Course Description:** Theory and practice of exercise testing and prescription in apparently healthy and diseased populations.**Prerequisite:** HES 403.**Registration Information:** Must register for lecture and laboratory.**Term Offered:** Spring.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 530 Clinical Biomechanics Credits: 3 (3-0-0)****Course Description:** Effect of external loads on internal tissues; concern for injury, injury prevention, and rehabilitation.**Prerequisite:** BMS 301 and HES 307.**Term Offered:** Spring.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 531 Muscle and Joint Mechanics Credits: 3 (3-0-0)****Course Description:** Integrate muscle, tendon, and location of bone attachment into a comprehensive understanding of human movement at the single- and multi-joint level.**Prerequisite:** BMS 301 and HES 307.**Term Offered:** Fall (even years).**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 545 Evolutionary Basis for Health and Fitness Credits: 3 (3-0-0)****Course Description:** Evolutionary basis for human health and fitness based upon dietary and exercise patterns for pre-agricultural humans.**Prerequisite:** HES 403 and FSHN 350.**Term Offered:** Spring.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 556 Wellness and Health Promotion Concepts Credits: 3 (3-0-0)****Course Description:** Discussion of theory and application of health promotion in various settings.**Prerequisite:** None.**Term Offered:** Fall.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 600 Research Design in Health/Exercise Science Credits: 3 (3-0-0)****Course Description:** The research process including design, implementation, proposal synthesis and statistical considerations applied to health and exercise science.**Prerequisite:** STAT 100 to 481 - at least 1 course.**Restriction:** Must be a: Graduate, Graduate cooperative program, Professional.**Term Offered:** Fall.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 602 Advanced Physiology of Exercise Credits: 3 (3-0-0)****Course Description:** Integrative exercise physiology covering metabolism, cardiovascular physiology, pulmonary physiology, and neuromuscular physiology in humans.**Prerequisite:** HES 403.**Restriction:** Must be a: Graduate, Professional.**Term Offered:** Fall.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 603 Advanced Topics in Exercise Physiology Credits: 3 (3-0-0)****Course Description:** Advanced principles of theoretical and applied exercise physiology at molecular, cellular, and systemic levels.**Prerequisite:** HES 403.**Restriction:** Must be a: Graduate, Professional.**Term Offered:** Fall.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 610 Exercise Bioenergetics Credits: 3 (3-0-0)****Course Description:** Biology of energy transfer reactions related to human locomotion and exercise performance in both healthy individuals and disease states.**Prerequisite:** HES 403.**Restriction:** Must be a: Graduate, Professional.**Term Offered:** Fall.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 619 Advanced Neural Control of Movement Credits: 3 (3-0-0)****Course Description:** Neuroanatomical, neurophysiological, and applied topics on the control of force and human movement.**Prerequisite:** BMS 300 and BMS 301 and HES 403.**Restriction:** Must be a: Graduate, Professional.**Term Offered:** Fall (odd years).**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 630 Integrative Exercise and Nutrition Metabolism Credits: 3 (3-0-0)****Also Offered As:** FSHN 630.**Course Description:** Advances in integrative human metabolism under conditions of changing energy flux.**Prerequisite:** FSHN 551 and HES 610.**Restriction:** Must be a: Graduate, Professional.**Registration Information:** Credit not allowed for both FSHN 630 and HES 630.**Term Offered:** Spring.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 645 Epidemiology of Health and Physical Activity Credits: 3 (3-0-0)****Course Description:** Foundation in chronic disease epidemiology that will enable students to evaluate the current epidemiologic literature.**Prerequisite:** HES 600.**Restriction:** Must be a: Graduate, Graduate cooperative program, Professional.**Term Offered:** Spring.**Grade Mode:** Traditional.**Special Course Fee:** No.

HES 650 Health Promotion Programming Credits: 3 (3-0-0)

Course Description: Development of skills in health promotion program design, implementation and evaluation.

Prerequisite: None.

Restriction: Must be a: Graduate, Graduate cooperative program, Professional.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 656 Comprehensive Stress Management Credits: 3 (3-0-0)

Course Description: Relationship between stress and illness emphasizing methods to impact its detrimental effects.

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 684 Supervised College Teaching Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 686A Practicum: Adult Fitness-Human Performance Clinical/ Research Laboratory Credits: Var[1-3] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Registration Information: Current CPR certification.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 686B Practicum: Wellness Management Credits: Var[1-3] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Registration Information: Current CPR certification.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 686C Practicum: Youth Fitness and Skill Development Credits: Var[1-3] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Registration Information: Current CPR certification.

Terms Offered: Fall, Spring, Summer.

Grade Modes: Instructor Option, Traditional.

Special Course Fee: No.

HES 686D Practicum: Health and Exercise Science Research Credits: Var[1-3] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Registration Information: Current CPR certification.

Terms Offered: Fall, Spring, Summer.

Grade Modes: Instructor Option, Traditional.

Special Course Fee: No.

HES 686E Practicum: Applied Health and Exercise Science Credits: Var[1-3] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Registration Information: Current CPR certification.

Terms Offered: Fall, Spring, Summer.

Grade Modes: Instructor Option, Traditional.

Special Course Fee: No.

HES 687 Internship Credits: Var[3-9] (0-0-0)

Course Description: Practical application of knowledge and skills in a professional situation.

Prerequisite: HES 686A to 686E - at least 1 course.

Restriction: Must be a: Graduate, Professional.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 692 Seminar Credit: 1 (0-0-1)

Course Description: Consideration of graduate education in health and exercise science.

Prerequisite: None.

Restriction: Must be a: Graduate, Graduate cooperative program, Professional.

Terms Offered: Spring, Summer.

Grade Mode: Traditional.

Special Course Fee: No.

HES 693 Seminar Credit: 1 (0-0-1)

Course Description: Current topics and issues in health and exercise science.

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Registration Information: Maximum of 2 credits allowed in course.

Terms Offered: Fall, Spring.

Grade Mode: Traditional.

Special Course Fee: No.

HES 695A Independent Study: Health Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Graduate cooperative program, Professional.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 695B Independent Study: Exercise Science Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Graduate cooperative program, Professional.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 695C Independent Study: Biomechanics Credits: Var[1-18] (0-0-0)**Course Description:****Prerequisite:** None.**Restriction:** Must be a: Graduate, Graduate cooperative program, Professional.**Terms Offered:** Fall, Spring, Summer.**Grade Mode:** Instructor Option.**Special Course Fee:** No.**HES 695D Independent Study: Neuromuscular Physiology Credits: Var[1-18] (0-0-0)****Course Description:****Prerequisite:** None.**Restriction:** Must be a: Graduate, Graduate cooperative program, Professional, Undergraduate.**Terms Offered:** Fall, Spring, Summer.**Grade Mode:** Instructor Option.**Special Course Fee:** No.**HES 696A Group Study: Health Credits: Var[1-18] (0-0-0)****Course Description:****Prerequisite:** None.**Restriction:** Must be a: Graduate, Professional.**Terms Offered:** Fall, Spring, Summer.**Grade Mode:** Instructor Option.**Special Course Fee:** No.**HES 696B Group Study: Exercise and Nutrition Credits: Var[1-18] (0-0-0)****Course Description:****Prerequisite:** None.**Restriction:** Must be a: Graduate, Professional.**Terms Offered:** Fall, Spring, Summer.**Grade Mode:** Instructor Option.**Special Course Fee:** No.**HES 696C Group Study: Exercise Science Credits: Var[1-18] (0-0-0)****Course Description:****Prerequisite:** None.**Restriction:** Must be a: Graduate, Professional.**Terms Offered:** Fall, Spring, Summer.**Grade Mode:** Instructor Option.**Special Course Fee:** No.**HES 696D Group Study: Biomechanics Credits: Var[1-18] (0-0-0)****Course Description:****Prerequisite:** None.**Restriction:** Must be a: Graduate, Professional.**Terms Offered:** Fall, Spring, Summer.**Grade Mode:** Instructor Option.**Special Course Fee:** No.**HES 696E Group Study: Neuromuscular Physiology Credits: Var[1-18] (0-0-0)****Course Description:****Prerequisite:** None.**Restriction:** Must be a: Graduate, Professional.**Terms Offered:** Fall, Spring, Summer.**Grade Mode:** Instructor Option.**Special Course Fee:** No.**HES 698 Research Credits: Var[1-18] (0-0-0)****Course Description:** Non-thesis research in health and exercise science.**Prerequisite:** None.**Restriction:** Must be a: Graduate, Professional.**Terms Offered:** Fall, Spring, Summer.**Grade Mode:** Instructor Option.**Special Course Fee:** No.**HES 699 Thesis Credits: Var[1-18] (0-0-0)****Course Description:****Prerequisite:** None.**Restriction:** Must be a: Graduate, Professional.**Terms Offered:** Fall, Spring, Summer.**Grade Mode:** Instructor Option.**Special Course Fee:** No.**HES 700 Professional Skills in Bioenergetics Credits: 3 (2-0-1)****Course Description:** Grant writing, authorship, peer review process, responsible conduct of science, research ethics, professional conduct, career opportunities.**Prerequisite:** None.**Restriction:** Must be a: Graduate, Professional.**Registration Information:** Admission to doctoral program, or admission to M.S. program and written consent of instructor.**Term Offered:** Fall.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 704A Advanced Topics in Bioenergetics: Movement Credits: 3 (3-0-0)****Course Description:** Advanced topics in physiology, biochemistry, biomechanics, and neural control exploring pathogenesis and treatment of chronic disease.**Prerequisite:** None.**Restriction:** Must be a: Graduate, Professional.**Registration Information:** Graduate standing. Maximum of 6 credits allowed in course.**Term Offered:** Fall.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 704B Advanced Topics in Bioenergetics: Physiology Credits: 3 (3-0-0)****Course Description:** Advanced topics in physiology, biochemistry, biomechanics, and neural control exploring pathogenesis and treatment of chronic disease.**Prerequisite:** None.**Restriction:** Must be a: Graduate, Professional.**Registration Information:** Graduate standing. Maximum of 6 credits allowed in course.**Term Offered:** Fall.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 710 Exercise in Disease Prevention Credits: 3 (3-0-0)****Course Description:** Role of exercise/physical activity in the prevention, pathophysiology and treatment of chronic diseases.**Prerequisite:** HES 403 and HES 520.**Restriction:** Must be a: Graduate, Professional.**Term Offered:** Spring (odd years).**Grade Mode:** Traditional.**Special Course Fee:** No.

HES 730 Cardiovascular Pathophysiology Credits: 3 (3-0-0)

Course Description: Cardiovascular physiology with emphasis on the development, progression, and treatment of diseases of the cardiovascular system.

Prerequisite: HES 403 and HES 520.

Restriction: Must be a: Graduate, Professional.

Term Offered: Fall (odd years).

Grade Mode: Traditional.

Special Course Fee: No.

HES 735 Human Cardiovascular Control Credits: 3 (2-0-1)

Course Description: Dynamics of cardiovascular control in human health and disease.

Prerequisite: HES 403.

Restriction: Must be a: Graduate, Professional.

Registration Information: Must register for lecture and recitation.

Term Offered: Fall (even years).

Grade Mode: Traditional.

Special Course Fee: No.

HES 784 Supervised College Teaching Credits: Var[1-3] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 786 Practicum Credits: Var[1-3] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 793 Bioenergetics Seminar Credit: 1 (0-0-1)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Terms Offered: Fall, Spring.

Grade Mode: S/U Sat/Unsat Only.

Special Course Fee: No.

HES 795 Independent Study Credits: Var[1-3] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 796 Group Study Credits: Var[1-3] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 798 Research Credits: Var[1-3] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.

HES 799 Dissertation Credits: Var[1-18] (0-0-0)

Course Description:

Prerequisite: None.

Restriction: Must be a: Graduate, Professional.

Terms Offered: Fall, Spring, Summer.

Grade Mode: Instructor Option.

Special Course Fee: No.