

# DEPARTMENT OF HEALTH AND EXERCISE SCIENCE

## Courses

### Health and Exercise Science (HES)

**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 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 202 Introduction to Exercise Physiology Credits: 3 (3-0-0)**

**Course Description:** Introduction to how cells, tissues and organs function in human health, disease and in response to exercise. Emphasis on the practical application of this material to contemporary issues in health and exercise science.

**Prerequisite:** None.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**HES 207 Anatomical Kinesiology Credits: 4 (3-0-1)**

**Course Description:** Human musculoskeletal anatomy and its application to movement. Also includes selected principles of biomechanics and physiology related to the study of kinesiology.

**Prerequisite:** None.

**Registration Information:** Must register for lecture and recitation.

**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 300 Physiology for Clinical Health Professions Credits: 4 (4-0-0)**

**Course Description:** Integrative understanding of human physiology with a systems based approach that includes examination of the effect of chronic disease on the physiological function of organ systems. Designed for students interested in pursuing careers working with clinical populations.

**Prerequisite:** (BZ 101 or BZ 110 or LIFE 102) and (CHEM 103 or CHEM 107 or CHEM 111).

**Restriction:** Must not be a: Freshman.

**Registration Information:** Sophomore standing.

**Terms Offered:** Fall, Spring, Summer.

**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.

**Registration Information:** Sections may be offered: Online.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

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

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

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

**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:** (FSHN 150 and HES 145 and HES 207) and (BMS 300 or HES 300).

**Registration Information:** Must register for lecture and laboratory. Must have earned a cumulative 2.500 GPA in: FSHN 150, HES 145, HES 207 and BMS 300 or HES 300.

**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:** (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) and (BMS 300 with a minimum grade of C or HES 300 with a minimum grade of C).

**Registration Information:** Must register for lecture and laboratory. Sections may be offered: Online.

**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 and PSY 100.

**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:** Reciprocal relationship between psychological factors and sport and exercise behavior.

**Prerequisite:** PSY 100.

**Term Offered:** 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 2.500 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: 3 (3-0-0)**

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

**Prerequisite:** BMS 300 or BMS 360 or HES 300.

**Registration Information:** Sections may be offered: Online.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**HES 404 Physiology of Exercise Laboratory Credit: 1 (0-2-0)**

**Course Description:** Application of the effects of exercise on various systems, organs, and tissues of the body through laboratory experiences.

**Prerequisite:** HES 403, may be taken concurrently.

**Terms Offered:** Fall, Spring, Summer.

**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 or BMS 360 or HES 300.

**Restriction:** Must not be a: Freshman.

**Registration Information:** Must register for lecture and laboratory.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**HES 432 Virtual Coaching for Wellness Credits: 3 (2-0-1)**

**Course Description:** Practical application of health and wellness knowledge to a clientele population via a virtual format.

**Prerequisite:** HES 145.

**Restriction:** Must not be a: Freshman.

**Registration Information:** Must register for lecture and recitation. Offered as Mixed Face-to-Face. Credit not allowed for both HES 432 and HES 480A1.

**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 or HES 300.

**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 450 Introduction to Human Clinical Medicine Credits: 3 (3-0-0)**

**Course Description:** Introductory concepts of clinical medicine including how to take and write a medical history and form a differential diagnosis. Using a case-based approach, common and uncommon diseases and scenarios and the associated medical physiology will be explored. Some basic student-healthcare professional skills are introduced including interpretation of diagnostic tests. Designed for students interested in pursuing a career in medicine.

**Prerequisite:** None.

**Restriction:** Must not be a: Freshman, Sophomore.

**Registration Information:** Completion of AUCC category 3A.

**Term Offered:** Fall.

**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.

**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 478A Sports Medicine Capstone: Seminar Credits: 3 (0-0-3)**

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

**Prerequisite:** (HES 307 or HES 319) and (HES 340 and HES 403).

**Registration Information:** Senior standing.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**HES 478B Sports Medicine Capstone: Research Credits: 3 (0-6-0)**

**Course Description:** A capstone experience that provides an opportunity to be involved with research in health and exercise science.

**Prerequisite:** (HES 307 or HES 319) and (HES 340 and HES 403).

**Registration Information:** Senior standing. Written consent of instructor.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**HES 478C Sports Medicine Capstone: Teaching Credits: 3 (0-6-0)**

**Course Description:** A capstone course that provides an opportunity to be involved with instruction of a course in Health and Exercise Science.

**Prerequisite:** (HES 307 or HES 319) and (HES 340 and HES 403).

**Registration Information:** Senior Standing. Written consent of instructor.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**HES 478D Sports Medicine Capstone: Service Learning Credits: 3 (0-6-0)**

**Course Description:** A capstone experience that provides an opportunity to be involved with a service-learning project in the community that applies knowledge of Health and Exercise Science.

**Prerequisite:** (HES 307 or HES 319) and (HES 340 and HES 403).

**Registration Information:** Senior Standing. Written consent of instructor.

**Terms Offered:** Fall, Spring.

**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 500 Environmental Exercise Physiology Credits: 3 (3-0-0)****Course Description:** Enhance the understanding of human physiology and how the various physiological systems respond to environmental stressors. Integrate previous knowledge of human physiology and apply it to the physiological response to heat stress, cold stress, hyperbaric atmosphere, hypobaric atmosphere, pollution, and sleep deprivation.**Prerequisite:** BMS 420 with a minimum grade of B or HES 403 with a minimum grade of B.**Restriction:** Must not be a: Freshman, Sophomore.**Term Offered:** Fall.**Grade Mode:** Traditional.**Special Course Fee:** No.**HES 510 Bioethics--Concepts and Controversies Credits: 3 (2-0-1)****Course Description:** Origins of bioethics and analysis of cases/controversies in contemporary bioethics.**Prerequisite:** None.**Restriction:** Must not be a: Freshman, Sophomore.**Registration Information:** Admission to health and exercise science graduate program or consent of the instructor. Must register for lecture and recitation.**Terms Offered:** Fall, Spring.**Grade Mode:** Traditional.**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 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 608 Physical Activity Intervention Development Credits: 3 (3-0-0)**

**Course Description:** Examination of the current state of the science related to the relationship between physical activity and health outcomes, the theoretical foundations underpinning successful physical activity interventions, and knowledge of how to develop, implement and evaluate physical activity interventions for adults.

**Prerequisite:** HES 354 or HES 434 or HES 455.

**Restriction:** Must be a: Graduate, Professional.

**Term Offered:** Spring.

**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 620 The Science of Healthspan Credits: 3 (3-0-0)**

**Course Description:** A multidisciplinary approach to examining important biomedical topics in healthy aging. Covers topics in the field of biomedical research on healthy aging including: lifespan, healthspan, disease, interventions for maintaining health across the lifespan, and the biology, physiology and sociology of aging, from molecular events to clinical and population function.

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Term Offered:** Fall.

**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 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 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 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 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 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 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.