Health and Human Physiology

Chair
• Warren G. Darling

Undergraduate majors: health and human physiology (B.A.); athletic training (B.S.); human physiology (B.S.); sport and recreation management (B.S.); therapeutic recreation (B.S.)

Undergraduate minors: human physiology; physical activity and nutrition science; sport and recreation management

Undergraduate certificate: interscholastic athletic/activities administration

Graduate degrees: M.A. in leisure studies; M.S. in health and human physiology; Ph.D. in health and human physiology

Faculty: https://clas.uiowa.edu/hhp/people/faculty
Website: https://clas.uiowa.edu/hhp/

The Department of Health and Human Physiology offers undergraduate majors, minors, and a certificate; and graduate degree programs in health and human physiology and leisure studies. The department also administers the Certificate in Disability Studies, as well as coaching authorization courses. In addition, the department is home to the Health and Physical Activity Skills Program, which offers courses that provide instruction and practice in lifetime sports, fitness training, and wellness activities aimed at enhancing physical health and well-being. Additionally, the department collaborates with other departments to offer the Certificate in Event Planning.

Undergraduates in all majors may use several health and human physiology courses to fulfill requirements of the College of Liberal Arts and Sciences General Education Program. The department's First-Year Seminar is designed for entering undergraduate students.

Certificate in Disability Studies

The Department of Health and Human Physiology administers the undergraduate certificate program in disability studies. Disability studies examines disability as a social, cultural, historical, and political phenomenon rather than focusing on its clinical, medical, or therapeutic aspects. It is an interdisciplinary and multidisciplinary field that draws on scholarship from diverse disciplines. The certificate program helps students expand their knowledge and awareness of disability issues and prepare for careers in public life. See Disability Studies in the Catalog.

Related Certificate: Event Planning

The Departments of Health and Human Physiology and Communication Studies, the School of Journalism and Mass Communication (College of Liberal Arts and Sciences), and the Department of Marketing (Tippie College of Business) collaborate to offer the undergraduate Certificate in Event Planning. Students who earn the certificate will know and be able to demonstrate the basic principles of organizing a successful event. They will gain a robust understanding of the diverse field of event planning and careers in the event planning industry. For information about the certificate, see Event Planning in the Catalog.

Programs

Undergraduate Programs of Study

Majors
• Major in Health and Human Physiology (Bachelor of Arts)
• Major in Athletic Training (Bachelor of Science)
• Major in Human Physiology (Bachelor of Science)
• Major in Sport and Recreation Management (Bachelor of Science)
• Major in Therapeutic Recreation (Bachelor of Science)

Minors
• Minor in Human Physiology
• Minor in Physical Activity and Nutrition Science
• Minor in Sport and Recreation Management

Certificate
• Certificate in Interscholastic Athletic/Activities Administration

Graduate Programs of Study

Majors
• Master of Arts in Leisure Studies
• Master of Science in Health and Human Physiology
• Doctor of Philosophy in Health and Human Physiology

Facilities

Classroom and research laboratories are located in the Field House and in other buildings on campus. They provide excellent facilities for instruction and research at both the undergraduate and graduate levels.

Cooperative efforts with other units facilitate specialization by allowing Department of Health and Human Physiology students to use additional special facilities and research equipment in other departments on campus (e.g., biology, biochemistry, molecular physiology and biophysics, orthopaedic surgery, internal medicine, pharmacology, and the College of Engineering).

Courses

Health and Human Physiology Courses

HHP:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

HHP:1030 Introduction to Critical Thinking 3 s.h.
Concepts and skills required for critical thinking about what should and should not be taken as true; analysis and evaluation of a variety of complex extended arguments. GE: Quantitative or Formal Reasoning.
HHP:1048 Basics of Personal Training and Program Design 3 s.h.
Provides a basic understanding of the role of a personal trainer and key concepts for exercise program design; presentation of a fitness training model to assist in the design of individualized programs based on a client's health, fitness, and performance goals; how to facilitate rapport, adherence, self-efficacy, and behavior change in clients; design programs that help clients improve posture, movement, flexibility, balance, core function, cardiorespiratory fitness, muscular endurance, and strength; aligns with basic personal training certifications, but does not certify students on completion.

HHP:1100 Human Anatomy 3 s.h.
General human anatomy covering most systems of the body. GE: Natural Sciences without Lab.

HHP:1110 Human Anatomy Laboratory 1 s.h.
All major systems of the human body, understood through computer-generated images, models, histological slides, anatomical specimens.

HHP:1150 Human Anatomy Lecture with Lab 4 s.h.
Study of general human anatomy, covering all systems of the body in lecture and most systems in lab; appropriate for students planning on careers in various health professions or for those needing an introductory human anatomy course.

HHP:1300 Fundamentals of Human Physiology 3 s.h.
Introduction to function and regulation of the human body. Recommendations: high school chemistry and basic biology. GE: Natural Sciences without Lab.

HHP:1310 Human Physiology Laboratory 1 s.h.
Laboratory course illustrating principles of physiological principles through experimental measurements, practical assessments, and computer-based illustrations of human function. Recommendations: one semester of biology.

HHP:1350 Fundamentals of Human Physiology with Laboratory 4 s.h.
Combines lecture and laboratory; introduction to function and regulation of the human body; laboratory work illustrates principles learned in lectures utilizing experimental measurements, practical assessments, and computer-based simulations.

HHP:2130 Human Development Through the Life Span 3 s.h.
Overview of human developmental theories across the life-span; aspects of cognitive, physical, and personality development from birth to death; the role of culture, environment, health, and economic factors over the developmental process and life continuum.

HHP:2200 Physical Activity and Health 3 s.h.
Physical activity determinants in society; school, workplace, community-based health promotion interventions to improve activity levels. GE: Values and Culture.

HHP:2210 Principles of Exercise Leadership 3 s.h.
Exercise standards, guidelines for aerobic/exercise instructors; aerobic workout components, contraindicated exercises, injury prevention and treatment. Prerequisites: HHP:2200.

HHP:2280 Cultural Competency in Health Interventions 3 s.h.
Examination of the importance of ethnic and cultural factors for community health practice; essential theories, models, and practices for working with race, ethnicity, gender, and social issues; topics may include demographics, disparities, complementary and alternative medicine, spiritually-grounded approaches, multicultural populations, communication, workforce, aging, sexual orientation, and future challenges.

HHP:2310 Nutrition and Health 3 s.h.
Physiology, biochemistry of human nutrition; appropriate food sources; qualitative and quantitative evaluation of diets using standard references. GE: Natural Sciences without Lab.

HHP:2350 Biomechanics of Sport and Physical Activity 3 s.h.
Principles of biomechanics, kinesiology, and anatomy; quantitative aspects of sport and physical activity; emphasis on developing a qualitative grasp on mechanical principles of human movement within sports and physical activity; how to apply these principles in a sport/exercise environment. Prerequisites: HHP:1100.

HHP:2500 Psychological Aspects of Sport and Physical Activity 3 s.h.
Psychological theory and research related to sport and physical activity; motivation, aggression, attribution, socialization, competitive anxiety, leadership.

HHP:3000 Equity Issues in the Health Sciences 3 s.h.
Examination of equity issues in the health sciences, including a review of the historical challenges that led to Human Subjects Review Boards, FDA oversight of drug development and clinical trials, inclusion of women in research; effect of situational ethics in the workplace; potential danger of making assumptions about clients/patients; importance of developing an inclusive communication style; assessing the effectiveness of family-friendly employment policies in providing equitable opportunities for career advancement for both women and men. Recommendations: junior or senior standing. Same as INTD:3020.

HHP:3030 Coaching for Health and Wellness 3 s.h.
Opportunities to expand knowledge and develop skills to help individuals change behavior and meet health-related goals; general health and wellness principles; principles and techniques for change; experience providing health-coaching services to clients. Prerequisites: HHP:2200 and HHP:2310. Same as INTD:3030.

HHP:3050 Obesity: Causes, Consequences, Prevention, and Treatment 3 s.h.
In-depth overview of biological, behavioral, and societal causes and consequences of obesity epidemic; potential solutions from primary and secondary prevention standpoint; causes of obesity, available treatments, and global impact that obesity epidemic presents to society. Prerequisites: HHP:2200 and HHP:2310.

HHP:3060 Advanced Human Anatomy for Athletic Trainers 4 s.h.
Extremities and relevant body cavity anatomy; anatomical terminology, anatomical relationships of human body, 3-D view of anatomy, clinical relevance of anatomy; basic science lectures, radiologic imaging discussions, introduction to clinically relevant anatomy, dissection laboratories, small group learning and teaching, faculty interaction, and computer-assisted resources. Offered summer sessions. Prerequisites: HHP:1100.
HHP:3105 Anatomy for Human Physiology 3 s.h.
All major systems of the body are covered with focus on the normal structure of the human body; appropriate for preprofessional students planning on careers in the various health professions.

HHP:3110 Advanced Anatomy Laboratory 3 s.h.
Detailed gross anatomy of all major systems of the body; structure of the human body at organ, tissue, and cellular levels; examination of various human and other mammalian specimens. Prerequisites: HHP:1110.

HHP:3115 Anatomy for Human Physiology with Lab 5 s.h.
Covers all major systems of the body in a combined lecture and laboratory anatomy course; focus on normal structure of the human body; laboratory includes gross anatomy of some human structures and dissection of other mammalian specimen; appropriate for preprofessional students planning on careers in various health professions.

HHP:3148 Personal Training for the Exercise Scientist 3 s.h.
Essential aspects of personal training including theory and applied practice of screening, assessment, exercise prescription, and technique for development of safe and effective training programs for clients. Prerequisites: HHP:1100 and HHP:2200 and HHP:2310 and HHP:1300.

HHP:3150 Program Design in Strength and Conditioning 3 s.h.
Examination of elements of program design for developing muscular fitness and skill related to fitness; applies to programming for individuals with whom a major goal of their physical activity program is to maximize human performance potential; these goals can either be for personal fitness, success in specific sports, or for applications in occupational athletes.

HHP:3200 Health Behavior and Health Promotion 3 s.h.
Principles of epidemiology and health behavior theories applied to multilevel frameworks for health promotion. Prerequisites: HHP:2200 and HHP:2310.

HHP:3230 Psychopharmacology 3 s.h.
How drugs act to influence behavior; general principles of drug action on the nervous system; licit and illicit drugs, use/abuse, historical perspective on drug use. Prerequisites: (PSY:2701 with a minimum grade of C- and PSY:2812 with a minimum grade of C- or PSY:2810 with a minimum grade of C-)) or HHP:1300 with a minimum grade of C- or HHP:3500 with a minimum grade of C-. Same as PSY:3230.

HHP:3300 Human Growth and Motor Development 3 s.h.
Human growth and biological maturation; focus on motor development from birth through puberty. Offered fall semesters. Recommendations: prior course in anatomy, human physiology, or biology.

HHP:3400 Applied Exercise Physiology 3 s.h.
Effects of acute exercise and chronic exercise training on different physiological systems (energy, neuromuscular, circulatory, respiratory, endocrine); overview of physiological principles necessary for more advanced study of fitness evaluation and exercise prescription; preparation for ACSM certification. Prerequisites: HHP:1300 or HHP:3500.

HHP:3420 College Health Education 3 s.h.
Practical experience in planning, implementing, and evaluating health programs in the college health setting; how health issues apply to individuals and communities to which they belong; foundation of health behavior change in college setting. Prerequisites: HHP:2310 and HHP:2200.

HHP:3430 Health Management and Administration 3 s.h.
Introduction to management, administration, and leadership principles as they relate to health promotion programs. Prerequisites: HHP:3200.

HHP:3440 Physical Activity Interventions 3 s.h.
Development, implementation, evaluation of effective health communication interventions; identification of health education resources for targeted groups. Prerequisites: HHP:2310 and HHP:2200.

HHP:3450 Immunology in Health and Disease 3 s.h.
Overview of immunology, beginning at the molecular level and ending with the role of the immune system in disease; fundamental concepts of the immune system; innate and adaptive immunity, focusing on cell-mediated and humoral immune responses, in addition to effector mechanisms in both of these responses; concepts of immunologic tolerance; autoimmune disease; immunodeficiency syndromes; the inflammatory process in disease. Prerequisites: HHP:3500.

HHP:3500 Human Physiology 3 s.h.
Organ system approach to physiology in order to understand normal function of the human body from the submolecular and cellular levels to the whole organism; emphasis on the development of a mechanistic understanding of organ system function and integrated physiological function across systems to promote homeostatic regulation in the human body. Prerequisites: (HHP:1300 or BIOL:1141 or BIOL:1140 or BIOL:1411) and (CHEM:1070 or CHEM:1110).

HHP:3510 Advanced Human Physiology Laboratory 3 s.h.
Fundamental laboratory measurements; major physiological systems, experimental design, presentation of experimental data. Corequisites: HHP:3500, if not taken as a prerequisite.

HHP:3550 Human Physiology with Laboratory 5 s.h.
Use of organ system approach to understand human function from submolecular and cellular levels to the whole organism; emphasis on development of a mechanistic understanding of organ system function and integrated function across systems necessary for homeostatic regulation in the human body; experiential laboratory activities incorporate fundamental measurements of human physiological function, basic research methodologies, and presentation of experimental data. Prerequisites: (HHP:1300 or BIOL:1141 or BIOL:1140 or BIOL:1411) and (CHEM:1070 or CHEM:1110).

HHP:3650 Applied Sport and Exercise Psychology 3 s.h.
Application of sport and exercise psychological theory; theoretical and practical experience using psychological skills training for sport and exercise.

HHP:3655 Emotional and Psychological Aspects of Health 3 s.h.
Interfaces among emotional, psychological, and physical aspects of health; examination of how individuals with healthy psychological profiles engage in health behaviors; health-related implications of negative emotional and psychological states; strategies for promoting healthy psychological patterns; designed for health promotion, health studies students, and others interested in health-related careers. Prerequisites: HHP:2200.
HHP:3850 Promoting Health Globally 3 s.h.
Major global health threats in the United States and abroad; impact of culture, history, economics on health disparities; approaches, programs, policies to remedy them. Requirements: junior or senior standing, or certificate student. Same as GHS:3850.

HHP:3860 Leadership Theory for Health and Fitness 3 s.h.
Theories and applications of current scholarship in group and individual leadership relevant for health, sport, fitness, and exercise leadership; areas of study include group dynamics, humanist leadership, leader-member exchange theory, transformational leadership, contingency/reinforcement leadership models, path-goal leadership, and multidimensional leadership models; approaches to leadership contextualized to build skills in cultural competence and ethics of leadership.

HHP:3870 Motivational Interviewing for Health Professions 3 s.h.
Theoretical foundations, empirical research support, and application of motivational interviewing: how people make changes with regard to health behaviors, how health professionals can support positive change, barriers to change process, empowerment and autonomy, intrinsic motivation, applications of motivational interviewing: theory and research; motivational interviewing for health behavior change; extensive applied practice of motivational interviewing techniques and group work to practice skills; discussion and application of techniques, research, and practical knowledge.

HHP:3900 Writing for Health and Human Physiology 3 s.h.
Effective written communication specific to health sciences; planning, drafting, revising, and peer-editing materials (e.g., personal statements, professional communications, general articles of interest, scientific papers); practicum experience.

HHP:4010 Behavioral and Clinical Health Assessment Laboratory 3 s.h.
Expected assessment skill set for health promotion professionals, including ability to assess and interpret blood pressure, lung function, blood lipids, and heart rate; health behavior measurement issues including how to use objective monitors, self report, interview, and web-based trackers to assess diet, physical activity, and sleep; general measurement and research concepts will be introduced and students will have laboratory practice in sphygmomanometry, spirometry, anthropometry, accelerometer, sleep tracking, computerized dietary assessments, and graded exercise testing. Prerequisites: HHP:2200 and HHP:2310 and HHP:1100 and HHP:1300.

HHP:4020 Health Communication and Coaching Strategies 3 s.h.
Science of health communication, including evidence-based development, strategic dissemination, and critical evaluation of relevant, accurate, accessible, and understandable health information communicated to individuals to advance their health; the art of health coaching including the processes that facilitate healthy, sustainable behavior change; health coaching strategies will include motivational interviewing, goal setting, and social support. Prerequisites: HHP:2200 and HHP:2310.

HHP:4030 Policy, Environmental, and Social Determinants of Health 3 s.h.
How health is determined by access to social and economic opportunities (e.g., quality of our schools, safety of neighborhoods, and quality of our social interactions); policy, environmental, and social factors that influence health; how collaboration among federal, state, and local-level partners can improve health; goals and objectives of Healthy People 2020 (U.S. Federal Health Promotion Planning Guide) will be used to frame course material. Prerequisites: HHP:2200 and HHP:2310.

HHP:4040 Health Services: Current Barriers and Innovative Solutions 3 s.h.
Barriers to quality health care access (e.g., lack of availability, high costs, lack of insurance coverage, health disparities); consequences of such barriers (e.g., unmet health needs, delays in care, lack of preventive services, preventable hospitalization); innovative solutions for improving access and quality of care (e.g., technologies and innovations, improving access to preventive health services, reducing costs); novel ways to improve access and quality of today’s health care system. Prerequisites: HHP:2200 and HHP:2310.

HHP:4110 Advanced Human Anatomy Laboratory 4 s.h.
Regional dissection of the human body. Prerequisites: HHP:3110.

HHP:4130 Skeletal Muscle Physiology 3 s.h.
Skeletal muscle structure, contractile mechanisms, production of movement, biomechanical properties; adaptation to increased use, disuse, injury. Prerequisites: HHP:3500.

HHP:4150 Clinical Exercise Physiology 3 s.h.
Recent advances in exercise physiology for clinical populations; emphasis on acute and chronic responses to exercise in healthy aged adults and in patients with cardiac, vascular, pulmonary, and metabolic diseases; basic and intermediate electrocardiography (ECG), pathophysiology of disease process, clinical assessment of disease severity, diagnostic testing, acute exercise responses, and exercise rehabilitation. Prerequisites: HHP:3500. Recommendations: HHP:4460.

HHP:4190 Scientific Basis of Training for Elite Performance 3 s.h.
Application of scientific principles to goal of improving strength, speed, endurance, and overall human function; general overview of structure and function of muscular, nervous, cardiovascular, and respiratory systems; bioenergetics of exercise; endocrine response to exercise; biomechanics of resistance exercise; adaptations to anaerobic and aerobic training programs; age and sex related considerations on training; nutrition and ergogenic aids. Prerequisites: HHP:3500 or HHP:1300.

HHP:4195 Exercise Programming for Special Populations 3 s.h.
Measurement of health-related fitness and exercise capacity in special populations (e.g., children, older adults, obesity, orthopedic problems, cerebral palsy, intellectual disabilities). Prerequisites: HHP:3400 and (HHP:4200 or HHP:4210).
HHP:4200 Metabolic Exercise Testing and Prescription 4 s.h.
Basic techniques in physical fitness assessment, prescription of exercise for healthy and unhealthy adults, promotion of physical activity within communities; provides knowledge and skill competencies required for certification as American College of Sports Medicine health fitness instructor. Prerequisites: HHP:2200 and (HHP:3400 or HHP:3500). Requirements: health promotion, exercise science, or human physiology major.

HHP:4210 Musculoskeletal Exercise Testing and Prescription 4 s.h.
Educational and practical experience for designing resistance training and flexibility programs; competencies for certification with National Strength and Conditioning Association. Prerequisites: HHP:2200 and (HHP:3400 or HHP:3500). Requirements: health promotion, exercise science, or human physiology major.

HHP:4220 Biomechanics of Human Motion 3 s.h.
Application of the principles of mechanics to investigation of human motion in two dimensions; system modeling, force system and equilibrium analysis, particle and rigid body kinematics, Newton's and Euler's equations of motion, work-energy and impulse-momentum integral principles. Offered spring semesters. Prerequisites: (HHP:1100 or HHP:3105) and (PHYS:1400 or PHYS:1511 or PHYS:1611 or HHP:2350).

HHP:4230 Motor Learning: Theory and Application 3 s.h.
How skilled motor behavior is acquired; behavioral changes that occur during skill acquisition; structural and physiological changes that occur in central nervous system; principles of training and practice that yield efficient and effective motor learning; how this information is helpful to health professionals involved in motor rehabilitation, physical educators and coaches, music instructors and musicians, strength and conditioning professionals, fitness professionals, and athletes, among others. Prerequisites: HHP:1300. Recommendations: familiarity with basic neuroscience (neurons, synaptic transmission, basic anatomical organization of sensory and motor systems).

HHP:4250 Human Pathophysiology 3 s.h.
In-depth study of human pathological processes and their effects on homeostasis; etiology, symptoms, and risk factors of various diseases; emphasis on major diseases impacting worldwide disability and death; how pathological processes are manifested and progress in the body. Prerequisites: HHP:1100 and HHP:3500.

HHP:4260 Respiratory Pathophysiology 3 s.h.
Structure and function of human respiratory system; focus on didactic and case study-based learning; control of breathing, gas exchange, lung mechanics, regulation of pulmonary blood flow, respiratory responses to stress; application of these physiological concepts to case studies of human disease. Prerequisites: HHP:3500. Recommendations: PHYS:1511, and MATH:1460 or MATH:1850.

HHP:4300 Neural Control of Posture and Movement 3 s.h.
Neuroanatomical and neurophysiological bases of human motor control; mechanisms for locomotion and posture, control of arm and hand movements, role of sensory information. Offered spring semesters. Prerequisites: HHP:3500 or HHP:1100. Requirements: anatomy or human physiology course.

HHP:4310 Sport and Exercise Nutrition 3 s.h.
Relationship between nutrition, fitness and sport performance; basic nutrition, physiology, chemistry, psychology, food preparation. Prerequisites: HHP:2200 and HHP:2310.

HHP:4320 Nutrition Interventions 3 s.h.
Strategies that assist in assessment and evaluation of nutrition behaviors of individuals and groups; interventions to meet nutritional needs of individuals and groups with a variety of health issues. Prerequisites: HHP:2200 and HHP:2310.

HHP:4340 Global Health and Global Food 3 s.h.
Practices, patterns, and policies that contribute to the epidemics of obesity, diabetes, and heart disease in wealthy populations; environmental degradation, hunger, and malnutrition among impoverished populations; strategies to meet food and agricultural needs for the world; local/global aspects or perspectives on food/health concerns for Iowa and the international community. Same as GHS:4340.

HHP:4350 Health and Human Physiology Practicum 1 s.h.
Experience in planning and implementing programs in the areas of fitness, strength and conditioning, nutrition, clinical rehabilitation, or health promotion. Prerequisites: HHP:1100 and HHP:2200 and HHP:2310 and (HHP:1300 or HHP:3500).

HHP:4360 Practicum in Group Fitness Instruction 2 s.h.
Opportunity to observe group-fitness instructors in an applied setting; help organize and execute a group-fitness class. Prerequisites: (HHP:4410 or HHP:3400) and HHP:2310 and (HHP:3500 or HHP:1300) and HHP:1100. Requirements: CPR/AED or Group Fitness Instructor (ACSM, ACE, AFAA) or specific fitness (yoga, indoor cycling, crossfit) certification.

HHP:4370 Practicum in Strength and Conditioning 2 s.h.
Opportunity to observe strength and conditioning professionals in an applied setting; participation in process of helping athletes reach performance goals. Prerequisites: HHP:2310 and (HHP:3400 or HHP:4410) and HHP:1100 and (HHP:3500 or HHP:1300). Requirements: CPR/AED certification.

HHP:4390 Understanding Human Disease 3 s.h.
Introduction to process of human disease at cell, organ, and whole body level throughout the lifespan; pathophysiological changes occurring with disease, including risk factors, disease development, and overall effects of disease on the body; cancer, diabetes, obesity, cardiovascular, neurodegenerative diseases, and aging. Prerequisites: HHP:1300 or HHP:3500.

HHP:4400 Health Promotion Clinical Practicum 1 s.h.
Experience in planning and implementing clinical health promotion programs focusing on nutrition, physical fitness, cardiac rehabilitation, and respiratory rehabilitation. Prerequisites: HHP:3200 and (HHP:4200 or HHP:4010).

HHP:4405 Health Promotion Community and Worksite Practicum 1 s.h.
Planning and implementing community and worksite health promotion programs. Prerequisites: HHP:3200 and (HHP:4200 or HHP:4010).

HHP:4410 Exercise Physiology 3 s.h.
Mechanisms responsible for the acute and chronic effects of exercise on the different organ systems of the body. Offered fall semesters. Prerequisites: HHP:1300 or HHP:3500.

HHP:4415 Exercise Science Practicum 1 s.h.
Experience in planning and implementing exercise programs related to physical fitness, including strength and conditioning in healthy and diseased/injured populations, and in elite athletes. Prerequisites: HHP:4200 and HHP:4210.
HHP:4420 Planning and Evaluating Health Interventions 3 s.h.
Assessment, planning, implementation, and evaluation of health promotion programs. Prerequisites: HHP:3200.

HHP:4440 Physiology of Nutrition 3 s.h.
Metabolic and biological aspects of human energy production, relationship to energy consumption; systems or integrative approach. Prerequisites: HHP:1300 or HHP:3500.

HHP:4450 Genetic Basis of Disease 3 s.h.
Changes in single molecules that lead to systemic physiological alterations in mammals; relationship of these changes to development, aging, exercise, and specific diseases; current methodologies for studying mammalian genetics and physiology. Prerequisites: HHP:3500.

HHP:4460 Cardiovascular Physiology 3 s.h.

HHP:4465 Environmental Exercise Physiology 3 s.h.
Study of physiological responses of the human organism to various forms of environmental stress at rest and during exercise; how physical performance is affected by environmental stressors such as heat, cold, altitude, microgravity, and hyperbaria. Prerequisites: HHP:3400 or HHP:4410.

HHP:4470 Physiology of Aging 3 s.h.
Aging's effects on cells, tissues, and organs; how aging influences function of major body organ systems and the whole organism; physiological mechanisms that underlie age-related changes in body function and performance; integrative approach with focus on human aging. Prerequisites: HHP:1300 or HHP:3500.

HHP:4480 Introduction to Human Pharmacology 3 s.h.
General pharmacology (e.g., administration, distribution, and elimination of drugs, dose response curves, adverse effects, placebo, homeopathy); pharmacotherapy of selected human diseases, pathophysiologic aspects of the disease, how different classes of drugs modify pathophysiologic effects to restore health or reduce disease's impact; focus on mechanisms of drug actions in humans; adverse effects, pharmacokinetic considerations, drug interactions; how to write prescriptions. Prerequisites: HHP:3500.

HHP:4490 Diagnosing Diseases: Patient History and Physical Examination 3 s.h.
Different diseases studied by interacting with patients at Meenakshi Mission Hospital and Research Center in Madurai, India; formal lectures in mornings followed by bedside teaching in afternoons and grand rounds in evenings; for pre-health professional students.

HHP:4500 Undergraduate Independent Study arr.
Library or laboratory research related to a specific topic in human physiology, normally culminating with a written manuscript; work directed by a faculty member.

HHP:4510 Energy Metabolism in Health and Disease 3 s.h.
Comprehensive and molecular-driven approach to energy metabolism during exercise and calorie restriction regimens in skeletal muscle, adipose tissue, liver, heart, brain; special emphasis on muscle metabolism and its interaction with other organ systems in treatment and prevention of metabolic diseases (e.g., obesity, diabetes, cardiovascular diseases, cancer). Prerequisites: HHP:3500. Recommendations: HHP:4410 and BIOL:2723.

HHP:4600 Senior Seminar in Creative Problem Solving 1 s.h.
Use of design thinking values and principles; collaborative work to uncover innovative solutions related to undergraduate health and human physiology experience and targeted health behaviors; interactive presentation of content, experimentation of ideas and processes, student-led projects. Requirements: senior standing, health and human physiology or human physiology major, and UI g.p.a. of 3.00 or higher.

HHP:4800 Honors Research I 2 s.h.
Research for honors thesis; selection of faculty mentor, preparation of research proposal, written and oral presentations of research proposal, literature review, participation in experiments designed to develop laboratory skills for research, work with an active research tenure-track faculty member in a laboratory; first of a two-semester sequence. Requirements: honors standing.

HHP:4900 Honors Research II 3 s.h.
Completion of honors research begun in HHP:4800; analysis of data, writing and oral presentation of honors thesis, work with an active research tenure-track faculty member in a laboratory; second of a two-semester sequence. Prerequisites: HHP:4800 with a minimum grade of B. Requirements: honors standing.

HHP:4930 Health and Human Physiology Internship 3-9,12 s.h.
Directed practical field experience involving program planning, implementation, evaluation, and administration; varied areas such as fitness, wellness, nutrition, clinical, and strength and conditioning.

HHP:4935 Clinical Exercise Physiology Internship 1-6 s.h.
Directed practical field experience; program planning, implementation, evaluation, and administrative procedures.

HHP:4940 Health Promotion Honors Readings 1-2 s.h.
First step to complete an honors thesis; work with health and human physiology faculty member; comprehensive readings in a specific area (e.g., obesity in children, disabilities and sport); readings include primarily research reviews, popular press, and editorials; production of an annotated bibliography summarizing research and presentation to faculty member at end of semester; brief research proposal summarizing background, research questions, and methods of selected area.

HHP:4950 Health Promotion Honors Problems 3-4 s.h.
Continuation of HHP:4940; original research or creative project supervised by a faculty member.

HHP:5000 Problems arr.

HHP:5300 Advanced Human Physiology 3 s.h.
Provides an advanced study of human physiology for students entering health related fields; mechanisms of body function will be presented at various levels ranging from cellular and molecular, to tissue and organ system levels, with emphasis on integration of the various systems. Offered spring semesters. Prerequisites: HHP:1100 and HHP:3500.

HHP:6000 Research arr.

HHP:6010 Non-Thesis Seminar 2 s.h.
For candidates for the M.S. without thesis. Offered spring semesters.
Prerequisites: HHP:3500. Recommendations: calculus and reflex integration, and regulation during physical stress. Microcirculation, hemodynamics, regional circulation, structure and function of cardiovascular system; heart, HHP:6460 Advanced Cardiovascular Physiology 1,3 s.h. Semesters. Prerequisites: HHP:1300 or HHP:3500. Exercise on different organ systems of the body. Offered fall semester. HHP:6410 Advanced Exercise Physiology 1,3 s.h. Advanced Skeletal Muscle Physiology 1,3 s.h. Skeletal muscle structure, contractile mechanisms, production of movement, biomechanical properties; adaptation to increased use, disuse, injury. Prerequisites: HHP:3500. HHP:6150 Advanced Clinical Exercise Physiology 1,3 s.h. Recent advances in exercise physiology for clinical populations; emphasis on acute and chronic responses to exercise in healthy aged adults and in patients with cardiac, vascular, pulmonary, and metabolic diseases; basic and intermediate electrocardiography (ECG), pathophysiology of disease process, clinical assessment of disease severity, diagnostic testing, acute exercise responses, and exercise rehabilitation. Prerequisites: HHP:3500. Recommendations: HHP:4460. HHP:6200 Advanced Metabolic Exercise Testing and Prescription 1,4 s.h. Basic techniques in physical fitness assessment; prescription of exercise for healthy and unhealthy adults; promotion of physical activity within communities; knowledge and skill competencies required for certification as American College of Sports Medicine health fitness instructor. Prerequisites: HHP:2200 and (HHP:1300 or HHP:3500). HHP:6300 Motor Control Seminar 1 s.h. Current topics in neural control of movement, biomechanics, and rehabilitation sciences. HHP:6400 Integrative Physiology Seminar 1 s.h. Current topics in cardiovascular physiology, vascular biology, free radical biology. HHP:6410 Advanced Exercise Physiology 1,3 s.h. Mechanisms responsible for acute and chronic effects of exercise on different organ systems of the body. Offered fall semesters. Prerequisites: HHP:1300 or HHP:3500. HHP:6460 Advanced Cardiovascular Physiology 1,3 s.h. Structure and function of cardiovascular system; heart, microcirculation, hemodynamics, regional circulation, reflex integration, and regulation during physical stress. Prerequisites: HHP:3500. Recommendations: calculus and physics. HHP:6470 Advanced Physiology of Aging 1,3 s.h. Effects of aging on cells, tissues, and organs; how aging influences function of major body organ systems and the whole organism; physiological mechanisms that underlie age-related changes in body function and performance; integrative approach with focus on human aging. Prerequisites: HHP:1100 and HHP:3500. HHP:6480 Advanced Human Pharmacology 1,3 s.h. General pharmacology (administration, distribution, elimination of drugs, dose response curves, adverse effects, placebos, homeopathy); pharmacotherapy of selected human diseases, pathophysiologic aspects of disease, how different classes of drugs modify pathophysiologic effects to restore health or reduce impact of disease; focus on mechanisms of drug actions in humans; adverse effects, pharmacokinetic considerations, drug interactions; how to write prescriptions. Prerequisites: HHP:3500. HHP:6500 Seminar in Health Promotion 1 s.h. Peer and faculty response to graduate student work addressing health promotion, physical activity and health outcomes, clinical exercise physiology; review and critique current literature; presentation of published work or in-process projects; critical thinking, scientific writing, and oral communication skill development pertaining to health promotion. HHP:6510 Advanced Energy Metabolism in Health & Disease 1,3 s.h. Discussions of recent published, and/or seminal, state-of-the-art papers on energy metabolism related to exercise and diet interventions in context of cardiovascular diseases, obesity, diabetes, and cancer. Prerequisites: HHP:3500. Recommendations: HHP:4410 and BIOL:2723. HHP:7000 Practicum in College Teaching arr. HHP:7290 Graduate Internship 3-9 s.h. Requirements: recreational sports management emphasis. HHP:7300 Advanced Neural Control of Posture and Movement 1,3 s.h. Neuroanatomical and neurophysiological bases of human motor control; mechanisms for locomotion and posture, control of arm and hand movements, role of sensory information. Offered spring semesters. Prerequisites: HHP:3500 and (HHP:1100 or HHP:3500). Requirements: anatomy or human physiology course. HHP:7500 Thesis: M.S. 0-4 s.h. HHP:7900 Thesis: Ph.D. arr. Athletic Training Program Courses ATEP:1000 First Aid and CPR 2 s.h. American Red Cross certification: basic first aid, CPR procedures. ATEP:1010 Exploring Athletic Training arr. Exploration of professional preparation for athletic trainers; application, career opportunities, professional organizations, awareness of basic athletic training principles. ATEP:1200 First Aid/CPR Athletic Training 2 s.h. First Aid and CPR with automated external defibrillator (AED); opportunity for certification in basic life support through the American Heart Association; satisfies the first aid and CPR requirement for the athletic training program application; for declared athletic training interest majors. Requirements: completion of or current enrollment in ATEP:1010.
ATEP:1250 First Aid and CPR Athletic Training 2 s.h.
First aid and CPR with automated external defibrillator (AED); opportunity for certification in basic life support through the American Heart Association; satisfies the first aid and CPR requirement for the athletic training program application; for declared athletic training interest majors. Requirements: completion of or current enrollment in ATEP:1010.

ATEP:2010 Practicum in Athletic Training I 2 s.h.
Basic clinical skill instruction, evaluation, and integration for athletic trainers. Requirements: athletic training major.

ATEP:2020 Practicum in Athletic Training II 2 s.h.
Integration of basic physical skills and orientation to traditional settings; clinical experience for first-year students arranged through the athletic training program. Prerequisites: ATEP:2010 with a minimum grade of C.

ATEP:2030 Basic Athletic Training 3 s.h.
Basic pathology, epidemiology, materials biology for prevention and immediate care of athletic injuries.

ATEP:2040 Clinical Sciences I 2 s.h.
Theoretical knowledge base in therapeutic modalities. Offered spring semesters. Prerequisites: ATEP:2010 with a minimum grade of C.

ATEP:2060 Advanced Emergency Care for Athletic Trainers 1-2 s.h.
Coordinated initial professional emergency response certifications for athletic trainers; recertification for those holding valid certifications. Requirements: Red Cross First Aid and CPR certifications.

ATEP:3010 Clinical Sciences III 3 s.h.
Theoretical and practical skill development in the areas of musculoskeletal evaluation for ankle, knee, shoulder, and upper extremity. Offered fall semesters. Prerequisites: ATEP:2040. Requirements: athletic training major.

ATEP:3020 Clinical Sciences V: Rehabilitation 2 s.h.
Rehabilitation for athletic trainers based on the theory and principles of therapeutic exercise; application of current research concepts. Prerequisites: ATEP:2040. Corequisites: ATEP:3010. Requirements: athletic training major.

ATEP:3030 Practicum in Athletic Training III 3 s.h.
Advanced clinical skill instruction, evaluation, and integration for athletic trainers. Prerequisites: ATEP:2020 with a minimum grade of C.

ATEP:3040 Clinical Sciences IV 3 s.h.
Continuation of musculoskeletal evaluation, completion of EENT, chest, abdomen, and dermatologic evaluation; integration of rehabilitation programs. Offered spring semesters. Prerequisites: ATEP:3010 with a minimum grade of C.

ATEP:4010 Administration of Athletic Training Programs 2 s.h.
Health care supervision, professional athletic training responsibilities, philosophies in athletic health care. Offered fall semesters. Prerequisites: ATEP:2030.

ATEP:4187 Practicum in Athletic Training IV 4 s.h.
Advancement of clinical skills required for eligibility to enter the athletic training profession; focus on review of general medical evaluation skills and preparation for the board of certification examination; first clinical experience course in third-year athletic training student practicum progression. Prerequisites: ATEP:3030 with a minimum grade of C.

ATEP:4188 Practicum in Athletic Training V 4 s.h.
Students work to master clinical skills required for eligibility to enter the profession of athletic training; focus includes preparation for the Board of Certification examination, culmination and presentation of senior research project; final clinical experience in the athletic training course progression.

ATEP:5010 Seminar in Athletic Training 1-4 s.h.
Educational issues faced by approved clinical instructors in athletic training education programs. Offered fall semesters.

**Sport and Recreation Management Courses**

SRM:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, readings, visits to research facilities).

SRM:1045 Health for Living 3 s.h.
Personal health strategies; information and empowerment; application-based work, including creating a family health pedigree or individual health portfolio; discussion of current health ethics topics; subjects may include nutrition, sleep, stress, physical fitness, relationships, injury prevention, prenatal health, vaccination, cancer, infectious diseases, global health, and more. GE: Values and Culture.

SRM:1060 Contemporary Issues in Sports 3 s.h.
Basic philosophical, historical, scientific foundations and developments; function, settings of organized recreation.

SRM:1072 Leisure and the Liberal Arts 3 s.h.
Integration of the ideal of a liberal education with worthy, meaningful use of free time in contemporary society; classic writings in the humanities. GE: Values and Culture.

SRM:1085 Introduction to Travel and Tourism 3 s.h.
Nature, scope, and significance of fields of travel and tourism; their histories, theories and philosophies, current trends, issues and challenges; critical analysis of current travel and tourism practices; green alternatives that are more sustainable and in keeping with values the field of leisure studies has long placed on active participation and local, community development.

SRM:2065 The Experience Economy 3 s.h.
Introduction to emerging experience economy; just as manufacturing sector of economy supersedes agriculture and service economy superseded manufacturing, how experience economy is now gaining ascendancy as the last, best hope for future economic growth; critical analysis of experience economy with discussion of ways in which experience economy may offer green, moral, and humane alternatives to previous stages of economic development; new opportunities for travel and tourism, sports settings, recreation and wellness services, possible applications in education and helping professions.

SRM:3020 Nutrition in Health and Performance 3 s.h.
Effects of exercise and nutrition on health- and sports-related fitness; for professionals in health and physical education. Same as INTD:3027.

SRM:3147 Sport Event Management 3 s.h.
Current status, challenges, and opportunities in sporting event industry; sporting event planning, budgeting, marketing, sponsorship, and evaluation; development of event timelines and event management skills; introduction to networking and interaction with sporting events. Recommendations: SRM:3154.
SRM:3148 Interscholastic Activities and Athletics Administration 3 s.h.
Survey of activities administration foundations including philosophy, leadership, professional programs and activities administration principles, strategies and methods; understanding of the techniques and theory of coaching concepts and strategies for interscholastic budget and concepts and strategies for interscholastic fundraising; basics of assessment and evaluation of interscholastic athletic programs and personnel, dealing with challenging personalities, and administration of professional growth programs for interscholastic personnel.

SRM:3149 Coaching Theory, Body Structure, and Human Development 3 s.h.
Comprehensive introduction to the coaching profession and obtaining a coaching license in the state of Iowa; ethics, licensing, and body development.

SRM:3150 Recreation Administration 3 s.h.
Personnel, finance, budgets, liability, marketing.

SRM:3151 Liability in Sport and Recreation 3 s.h.
Unintentional torts (negligence), civil liability, and criminal liability in recreation and sport settings; focus on community/commercial recreation and campus recreation settings. Requirements: must have 30 s.h. completed.

SRM:3152 Design and Management of Sport and Recreation Facilities 3 s.h.
Facilities management, personnel assignment and evaluation, fee structures, maintenance, programming, compliance with regulations and standards. Requirements: must have 30 s.h. completed.

SRM:3153 Sport Business Practices 3 s.h.
Business of professional and intercollegiate athletics including league, team, and player-level issues; revenue generation and distribution; competitive balance issues; sport league structure strategies; business behind intercollegiate athletics and challenges facing NCAA structure; negotiation. Requirements: must have 30 s.h. completed.

SRM:3154 Foundations of Event Management 3 s.h.
Large, major special events, professional meetings, and conferences; development and planning, implementation of events, management and evaluation of events; development requirements of planning events, development strategies, budgeting, staffing requirements, resource allocation, site planning, basic risk management requirements, emergency procedures; event implementation policy and procedures; relationship to elements within development stages; event management and evaluation procedures.

SRM:3155 Prevention and Care of Athletic Injuries for Coaches 3 s.h.
Comprehensive introduction to the sports world in relation to obtaining a coaching license in the state of Iowa in regards to first aid, injury prevention, and care.

SRM:3156 Design of Recreation Facilities 3 s.h.
Horticulture, floriculture, landscape design, agronomy, turf management; their relation to planning and design of recreation and park areas and facilities. Requirements: must have 30 s.h. completed.

SRM:3157 Managerial Operations in Sport and Recreation 3 s.h.
Introduction to the operation of a private or nonprofit sport-related business.

SRM:3158 Sport and Recreation Promotion 3 s.h.
Foundations and principles of recreation sport promotion and sales operations; application of foundations and principles to sport and recreation industries; historical aspects; current and future trends of sport and recreation management as it relates to sales and promotions; sales management, marketing, financial/economic, legal, and ethical principles related to sport management. Requirements: must have 30 s.h. completed.

SRM:3172 Finance in Sport and Recreation 3 s.h.
Capital funding and revenue acquisition for funding public and private sport and leisure service organizations; contemporary sport and leisure service; financial and economic issues. Requirements: 30 s.h. completed.

SRM:3175 Sales in Sport 3 s.h.
Fundamentals of business development and sales management; incentivizing sports consumers, direct and indirect sales strategies, brand communications, atmospherics, technology in sports sales, ticket sales, licensing products, negotiating sports sponsorships, and brand building. Recommendations: health and human physiology major.

SRM:3176 Sports Analytics for Coaches, Managers, and Other Decision Makers 3 s.h.
Data management, analytic models, and information systems; how sports analytics are used to make decisions for structuring athletic departments, develop in-game competitive strategies, and improve player performance; analytic examples applied to professional sports, college sports, high school sports, and fantasy sports; experience with statistics or computer science not required.

SRM:3177 Communications and Public Relations in Sports 3 s.h.
How public relations is used to promote service products, demonstrate social responsibility, and communicate with consumers and investors; campaigns, customer service, legal and ethical considerations in promoting service products, media events, information services, public relations in strategic management, atmospherics, critical service moment, social media. Recommendations: health and human physiology major.

SRM:3200 Topics in Sport and Recreation Management 3 s.h.
Exploration of various issues shaping the future of sport and recreation industries; in-depth focus on a specific topic within sport or recreation utilizing the expertise of the instructor.

SRM:3300 Writing for Sport and Recreation Managers 3 s.h.
Students discover their unique writing style and routine; areas of weakness in writing process; necessary tools to become more efficient, clear, and effective writers; discussion, practice, and review of important writing skills; writing skills of diverse professional situations; proper mechanics of persuasive, informative, and factual writing; styles applied to document formats (e.g., press releases, resumes, cover letters, emails, memos, marketing messages, interviews, crisis management); guest speakers provide unique expertise and insight; student-centered, workshop format.

SRM:3700 Ethics in Sport 3 s.h.
Ethical development and decision making processes in the sport and recreation industry including personal development, educational focused programming, and other types of ethics-based program development.
### SRM:3800 Sport Law for Interscholastic Athletic Directors
- **3 s.h.**
- Part of the Interscholastic Athletic Director certificate; content includes sport unintentional torts, intentional torts, constitution, legislation, and risk management.

### SRM:4190 Preinternship
- **0-1 s.h.**
- Orientation to internship process. Requirements: sport and recreation management major.

### SRM:4194 Honors Readings
- **arr.**

### SRM:4195 Honors Problems
- **arr.**

### SRM:4196 Internship
- **3-9 s.h.**
- Capstone course for recreation sport business track; 360 contact hours of practical experience with private or nonprofit recreation or sport-related enterprise; supervision by an agency mentor and a university representative.

### SRM:4197 Sport and Recreation Field Experience
- **arr.**
- Educational opportunity involving a small group of students in a unique sport business experience; students serve as consultants for a sport or recreation organization; in-class preparation prior to off-campus work with designated agency; sport or recreation enterprise vary according to faculty expertise and agency availability.

### SRM:4198 NCAA Rules Compliance and Enforcement
- **3 s.h.**
- Rules that govern NCAA athletics, rules compliance function on campuses of member institutions, and enforcement of rules by NCAA; essential legislation in NCAA Manual, including bylaws covering recruiting, eligibility, and amateurism; history of NCAA as related to organization's current structure and activities; summer session capstone experience includes attendance at NCAA Regional Rules Seminar in Indiana and participation in educational sessions conducted by NCAA staff.

### SRM:5065 The Economy of Experience
- **3 s.h.**
- In-depth analysis of emerging experience economy; just as manufacturing sector of economy supersedes agriculture and service economy supersedes manufacturing, how experience economy is gaining ascendancy as the last, best hope for future economic growth; exploration of current research in positive psychology and sociologist findings on evolution of post-materialist values as related to experience economy; evaluation of current trends; critical analysis and theory development; case studies; original research and investigation of novel marketing possibilities and experience design.

### SRM:5200 Historical and Philosophical Perspectives on Leisure
- **3 s.h.**
- Historical and philosophical origins of leisure studies; historical issues related to leisure ideas, such as shorter hours, share-the-work, utopian vision of a better society.

### SRM:6253 Sport Administration
- **3 s.h.**
- Overview of various segments that constitutes the role and function of a sport administrator (i.e., planning, organizing, leading, controlling); focus on ways in which sport administrators and their subsequent organizations influence and are influenced by the link between sport and globalization; sport administration encompassing services provided within an organizational context; administration viewed as the coordination of production and distribution of those services.

### SRM:6254 Marketing and Sport Promotion
- **3 s.h.**
- Overview of varied segments that constitutes sports business practice, including marketing, data-based marketing, sales, promotion, sponsorship; varied segments that make up the sport industry, including the mass media, infrastructure, stadium building, consumer behavior; readings and discussions consider the development and structure of each segment, interactions between segments, planning, policy implications; focus on the United States, professional team sports, comparisons to other sports.

## Therapeutic Recreation Courses

### TR:1000 First-Year Seminar
- **1 s.h.**
- Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, readings, visits to research facilities).

### TR:1061 Recreation Leadership and Programming
- **3 s.h.**
- Leadership principles, techniques; programming techniques.

### TR:1070 Perspectives on Leisure and Play
- **3 s.h.**
- Relationships between leisure and economics, sociology, other social sciences; effect of leisure on individual and group behavior; antecedents, motives, consequences of leisure behavior. GE: Social Sciences.

### TR:1077 Introduction to Child Life
- **3 s.h.**
- Orientation to the field of child life services including services for hospitalized children and their families.

### TR:1800 Aging Matters: Introduction to Gerontology
- **3 s.h.**
- Overview of the field of gerontology from a bio-psycho-social framework: how the human body and brain age, effects of these biological changes on physical and cognitive functions, and interaction of these individual factors with societal contexts; broad perspective to give students a foundation in gerontology, paving the way for more advanced courses in biology of aging, psychology of aging, and global aging; for students from a wide range of disciplines and levels, no prior knowledge of aging required. GE: Social Sciences. Same as ASP:1800, CSD:1800, NURS:1800, SSW:1800.

### TR:3160 Introduction to Therapeutic Recreation
- **3 s.h.**
- Lifestyles and barriers faced by persons with disabilities; basic aspects of the therapeutic recreation profession; skills used to establish therapeutic relationship; techniques used with patients; theoretical and conceptual bases for practice.

### TR:3161 Assessment and Evaluation in Therapeutic Recreation
- **3 s.h.**
- Basic assessment psychometrics (e.g., reliability), standardized instrumentation and data collection (e.g., observation, self-report), construction of instruments, data reduction. Prerequisites: TR:3160.

### TR:3162 Therapeutic Recreation: Clientele
- **3 s.h.**
- Developmental patterns of special populations; examination of specific interventions and research applied to specific cognitive, emotional, and physical impairments.
TR:3163 Concepts and Issues in Therapeutic Recreation: Advancement of the Profession 3 s.h.
Ethical, professional, and theoretical issues in delivery of therapeutic recreation services; impact of legislation, standards of practice, health care reform; application of research to practice and marketing services. Prerequisites: TR:3160.

TR:3164 Therapeutic Recreation: Rehabilitation 3 s.h.
In-depth review of therapeutic recreation techniques used in clinical and community rehabilitation; opportunities to use techniques with patients. Prerequisites: TR:3160.

TR:3170 Children and Health Care 3 s.h.
Broad overview of issues and systemic approaches to working with children in a health care setting; practical and clinically-based experiences for pediatric population; provision of health care services to patients and issues that affect them; models of intervention, ethical issues, case studies, and impact of cultural diversity on health care; for undergraduates who are interested in working with children in a health care setting.

TR:3171 Child Life Practical Application 3 s.h.
Overview of medical conditions and treatments commonly encountered by children and adolescents in health care settings; common pediatric sedation medications; sequence of medical procedures to understand how to provide procedural preparation and support; facilitate medical play with pediatric population.

TR:3174 Cultural Perspectives in Health Care 3 s.h.
Health care beliefs related to various cultures and religions; focus on illness, hospitalization, treatment, death.

TR:3261 Inclusive Recreation 3 s.h.
Laws pertaining to access to recreation and leisure opportunities for disabled persons in a community; evaluation of physical access to built environment; how social construction of disability can be a barrier to integrated leisure involvement; practical aspects of how to include disabled persons in community recreation and sport activities.

TR:3262 Therapeutic Recreation Administration 3 s.h.
Examination of the organization and administration of therapeutic recreation services; focus on planning, organizing, and managing therapeutic recreation services; comprehensive and strategic planning, funding, marketing, legal and legislative issues, personnel management, and professional practice of therapeutic recreation.

TR:3281 Special Projects in Child Life Practice 2 s.h.
Student directed and student led hospital camping experience for patients at the University of Iowa Children's Hospital; planning and preparing for a large function, planning and leading therapeutic activities, working directly with patients and their families, processing and discussion of experiences and concerns; practical and clinical-based experiences for students interested in working with pediatric population in health care setting. Requirements: hospital orientation, patient confidentiality (HIPAA) training, and health screening.

TR:4169 Spring Break Child Life Experience 1 s.h.
Practical experience with ill children, including a trip to the Give Kids the World village in Florida; documentation and engagement of course materials, experience working with ill children; students are assigned a specific diagnosis and present the diagnosis (appropriate statistics, effects of hospitalization, treatment, etc.) on child and family; coping strategies, appropriate methods of talking to and interacting with children and families, overview of child life in hospitals.

TR:4190 Preinternship Seminar 1 s.h.
Interviewing skills, résumés and cover letters, selection of internship site(s), application procedures for internship positions, and responsibilities of interns to the agency.

TR:4191 Therapeutic Recreation Internship arr.
Practical field experience; direct leadership, program planning, administrative procedures. Prerequisites: TR:4190.

TR:4192 Child Life Internship 9,12 s.h.

TR:4193 Independent Study arr.
Problem in a specific area.

TR:4194 Honors Readings arr.
Independent reading or research project under faculty supervision usually leading to an honors paper. Requirements: admission to honors program.

TR:4195 Honors Problems arr.
Completion of a project over and above normal independent study as an honors project; major research effort involving close work with an advisor.

TR:5165 Child Life: Methods and Materials 3 s.h.
Interventions unique to child life practice (e.g., pain management, coping, preoperative play, terminal illness).

TR:5166 Child Life: Seminar 3 s.h.
Current issues and research in child life, expanding scope of service in child life.

TR:5167 Child Life Practicum 1-3 s.h.
Experience observing and assisting child life staff members providing services to hospitalized children, under Certified Child Life Specialist supervision.

TR:5205 Research Methods and Leisure Behavior 3 s.h.
The scientific process: research designs for experiments and surveys, questionnaire construction, sampling theory, basic data analysis.

TR:5211 Professional Ethics and Practice in Pediatrics 3 s.h.
Examination of core issues in clinical pediatrics; beginning life critical care, end-of-life care, role of medical technology, public health research pertinent to children, and maintaining professional boundaries. Prerequisites: TR:1077.

TR:5212 Child Life Research Problems arr.
Work one-to-one with a faculty member on a mentored research project pertaining to child life, play, and development, or an appropriate special topic agreed upon by student and faculty member. Prerequisites: TR:5205. Requirements: acceptance into the Master of Science program in Health and Human Physiology, Child Life.

TR:5260 Play and Childhood arr.
Multiple levels of theories and current research on importance of play in child development; advocacy for importance and necessity of play in childhood that leads to well-being and healthy lifestyles; practical and theoretically-based experiences; for students interested in working with children in health care, clinical, school, community, and family life settings.
TR:5261 Family Systems 3 s.h.
Examination of dynamics of family life as a social system from a historical, sociocultural, and theoretical perspective; approaches to working with diverse children and families facing life stresses; interactive format, incorporates experiential learning, classroom lecture, and discussion.

TR:6200 Child Life Graduate Forum 0 s.h.
Informational sessions, networking, review of research scholarship, resources, and joint collaboration for first- and second-year child life graduate students. Requirements: enrollment in Department of Health and Human Physiology M.S. child life track.

TR:6262 Procedures in Therapeutic Recreation 3 s.h.
Current issues in the field; application of business and research principles to therapeutic recreation practice and program administration.

TR:7289 Graduate Practicum in Therapeutic Recreation 3 s.h.
Field placement with a therapeutic recreation service delivery agency; meets NCTRC certification standards. Prerequisites: TR:3160. Corequisites: TR:3163 and TR:3164.

Health and Physical Activity Skills Courses

HPAS:1001 Alcohol and Your College Experience 1 s.h.
Patterns of alcohol, drug use focused on college years; strategies for monitoring use, behavioral change plans for implementing lower-risk drinking practices; for drinkers and non-drinkers.

HPAS:1002 Tobacco and Your College Experience 1 s.h.
Current behavior change theories related to tobacco use, cessation; nicotine replacement therapies (NRT), non-NRT methods; triggers, relapse prevention, cognitive behavioral skills, support systems; for smokers and non-smokers.

HPAS:1003 Resiliency and Your College Experience 1 s.h.
Resiliency and psychological hardiness theories relevant to college life; resiliency and ability to cope with challenges; components of psychological fitness; skills for personal growth and emotional well-being.

HPAS:1004 Food and Your College Experience 1 s.h.
Sociocultural perspective on the forces that facilitate “junk” diets, particularly during young adulthood; basic components of nutrition; opportunity to develop skills in diet planning and healthy eating.

HPAS:1005 Indoor Group Cycling 1 s.h.
Introduction to group cycling; bike setup, safety, proper technique, injury prevention, and utilization of interval training.

HPAS:1006 Intuitive Eating 1 s.h.
How to create and sustain a healthy relationship with mind, body, food, and exercise using an evidence-based approach; introduction to 10 basic principles of intuitive eating, taking a critical look at dieting and a healthful approach to satisfying eating balanced with exercise.

HPAS:1010 Personal Fitness 1 s.h.
Introduction to personal workout programming and design; includes sections on cardiovascular fitness, muscular strength and endurance, and flexibility.

HPAS:1020 Core Strengthening 1 s.h.
Introduction to developing strength, flexibility, and endurance through the core; students will learn what the core is, how to best develop the muscles of the core, and why core training is important.

HPAS:1030 Cardio Training 1 s.h.
Beginner’s guide to cardio fitness to develop and maintain levels of cardiovascular health and fitness.

HPAS:1040 Pilates 1 s.h.
Introduction to the method of Pilates, a stretching and strengthening fitness program; emphasis will be on moving fluidly through full range of motion, core stability, and overall functional fitness.

HPAS:1045 Pilates II: Intermediate Pilates 1 s.h.
Study and practice of Pilates; intermediate and advanced Pilates moves; modifications and use of props based on current ability level; musculoskeletal anatomy and biomechanics as related to Pilates. Prerequisites: HPAS:1040.

HPAS:1055 Introduction to Triathlon Training 1 s.h.
Introduction to the sport of triathlon; promote skill development to enable beginner level students to complete an indoor sprint triathlon; students will swim in an indoor pool, cycle on indoor bicycles and run inside and outside weather permitting; how to use basic periodization, improve technique, and nutritional guidelines for triathlon; beginning training for the outdoor triathlon season. Requirements: ability to swim 200 yards (4 laps) without stopping.

HPAS:1060 High Intensity Interval Resistance Training 1 s.h.
Increased fitness levels through principles of resistance training using a high-intensity interval training method; various types of resistance (free weights, rubber bands, partner resistance, and body weight resistance); topics include muscular anatomy, principles of resistance training, various resistance training exercises, safety, motivation and goal setting, and personal program design. Recommendations: general understanding of resistance training.

HPAS:1070 Introduction to Weight Training 1 s.h.
Introduction to basic principles of weight training using barbells and dumbbells as resistance; muscular anatomy, principles of weight training, muscular strength, muscular endurance, weight room safety, motivation and goal setting, personal program development; no prior weight training experience required.

HPAS:1075 Weight Training II 1 s.h.
Builds on skills and concepts acquired in HPAS:1070; advanced weight training programs aimed at developing muscular strength and endurance. Prerequisites: HPAS:1070. Recommendations: knowledge of basic anatomy, ability to demonstrate proper lifting techniques, and understanding of weight training principles.

HPAS:1080 Classical Weightlifting 101 1 s.h.
Beginning-level introduction to classical Olympic weightlifting movements leading up to the snatch, clean and jerk, power snatch, and power clean. Recommendations: HPAS:1070 and/or an understanding of weight training fundamentals and basics.

HPAS:1090 Sports Skills and Drills 1 s.h.
Develop and practice basic skills and game strategy for an array of team sports; participate in a variety of educational and competitive physical activities that may include flag football, soccer, basketball, tennis, pickleball, and racquetball.
HPAS:1100 Kettlebell Training 1 s.h.
Introduction to basic principles and benefits of using kettlebells for strength, power, mobility, weight loss, and more; topics include history, mobility drills, foundational movements (e.g., deadlift, swing, clean, press, Turkish Get Up, high pull, snatch), safety, goal-setting, and personal program development.

HPAS:1110 Fitness Walking 1 s.h.
Walking as a means to improve cardiovascular health and fitness; utilizes outdoor walking, weather permitting, or the indoor track.

HPAS:1130 Couch to 5K: Beginner Jogging 1 s.h.

HPAS:1140 PE Games 1 s.h.
Participation in and design of physical activity games and skills; students improve physical health through cardio endurance and resistance training during game play; games and variations of games may consist of basketball, dodgeball, tag, volleyball, and other physical activities; how to be physically active and healthy while having fun; physiological responses to physical activity.

HPAS:1150 Introduction to Health and Wellness 1 s.h.
Optimal physical health and wellness in the college years; focus on behavioral change and goal setting, five components of fitness, dimensions of wellness, and stress management.

HPAS:1210 Relaxation Techniques 1 s.h.
How to define the sources of underlying stress, learn to cope with everyday stressors, and become more proactive through life skill management.

HPAS:1220 Flexibility 1 s.h.
Help students move through full range of motion, work to correct imbalances, and ultimately move better through activities of daily living.

HPAS:1230 Hatha Yoga 1 s.h.
Introduction to the study and practice of yoga; geared towards beginners.

HPAS:1235 Hatha Yoga II: Intermediate Hatha Yoga 1 s.h.
Study and practice of Hatha Yoga; topics may include history and philosophy of Hatha Yoga, props and modifications, and biomechanics and anatomy as it relates to yoga. Prerequisites: HPAS:1230.

HPAS:1240 Power Yoga 1 s.h.
Build strength, flexibility, and balance while maintaining traditional yoga emphasis of breath and intention; breath and movement are linked as you flow in and out of a combination of vinyasas (yoga sequences) and balancing poses; topics include proper breathing techniques, sun salutations, arm balances, backbends, and inversions. Requirements: basic understanding and background in yoga; a 6-week yoga practice is recommended.

HPAS:1250 Tai Chi 1 s.h.
Introduction to the practice of tai chi; basic structure, footwork, and breathing involved in execution of routines consisting of a variety of postures; application of this knowledge to a self-defense situation.

HPAS:1320 Lap Swimming I 1 s.h.
Introduction to swim stroke development utilizing swimming as a form of exercise; this is not a learn-to-swim class and a basic prerequisite swimming test will be performed prior to instruction.

HPAS:1325 Lap Swimming II 1 s.h.
Advanced technique refinement course geared towards students who have passed HPAS:1320 or can perform the prerequisite swim test. Prerequisites: HPAS:1320.

HPAS:1340 Water Workout 1 s.h.
Basic principles and benefits of aquatic exercise; guidelines for creating safe and effective aquatic exercise programs; topics include fitness and conditioning, anatomy, safety, deep-water workouts, goal setting, and nutrition.

HPAS:1410 Badminton 1 s.h.
Introduction to the game, rules, and skills involved in badminton.

HPAS:1430 Racquetball 1 s.h.
Introduction to the game, rules, and skills involved in racquetball.

HPAS:1440 Table Tennis 1 s.h.
Introduction to the game, rules, and skills involved in table tennis.

HPAS:1450 Tennis 1 s.h.
Introduction to the game, rules, and skills involved in tennis.

HPAS:1530 Volleyball I 1 s.h.
Introduction to the game, rules, and skills involved in volleyball.

HPAS:1535 Volleyball II 1 s.h.
Advanced skill refinement course geared towards students who have passed HPAS:1530 or are able to show mastery of the basic techniques. Prerequisites: HPAS:1530.

HPAS:1550 Slow-Pitch Softball 1 s.h.
Introduction to the game, rules, and skills involved in softball; course will meet outside, weather permitting.

HPAS:1560 Ultimate Frisbee 1 s.h.
Introduction to the game, rules, and skills involved in ultimate frisbee; course will meet outside, weather permitting.

HPAS:1610 Self Defense 1 s.h.
Introduction to the practice of self-defense through upper and lower body strikes, joint manipulation, and other personal protection measures; this is a noncontact course.