

ESS - Clinical Exercise Physiology Graduate Program

Clinical Exercise Physiology Program

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www.uwlax.edu/academics/grad/clinical-exercise-physiology/ (<https://www.uwlax.edu/academics/grad/clinical-exercise-physiology/>)

The Master of Science in Clinical Exercise Physiology Program is a 46-credit program that provides the theoretical, laboratory, research and clinical experiences necessary for a career in a cardiopulmonary rehabilitation setting. Each year's class (15 students) entering the four-term program - summer, fall, spring, summer - receives practical, hands-on experience in Phases I and II cardiac rehabilitation, as well as graded exercise testing, in cooperation with area hospitals and clinics.

In addition, students participate in the on-campus La Crosse Exercise and Health Program (LEHP), which provides adult fitness, a long-term cardiac rehabilitation maintenance program, and health/nutrition services to over 100 participants each week. The required internship - three months during the last term - presents opportunities for further experience at a site of the student's choosing. The completion of a thesis or graduate project is required before the student is allowed to begin the internship.

Degree candidates typically have an undergraduate degree in physical education, fitness, exercise science, or other allied health related fields such as biology, health education, nursing, or physical therapy. A minimum undergraduate grade point average of 3.00 is required for admission. Application deadline is January 15 of each year.

Graduates are prepared to:

- Conduct graded exercise tests
- Design exercise programs for healthy and diseased populations
- Organize and administer adult fitness, corporate fitness, and cardiopulmonary rehabilitation programs

Graduates are employed in:

- Colleges and universities
- Adult fitness centers (public, private, and corporate)
- Clinic, hospital, and "free standing" rehabilitation facilities
- Sports medicine centers

Program length

The Master of Science (M.S.) in Clinical Exercise Physiology Program is typically a 15-month program. The program length is based on how long the required UWL coursework would take to complete for a full-time student who does not need to complete any prerequisite coursework. Program length may be extended if students attend part-time (if approved by program) or due to the requirements of an individual student's plan of coursework, research or capstone project.

Graduate degree

- Clinical exercise physiology - MS (<http://catalog.uwlax.edu/graduate/programrequirements/clinicalexercise physiology/clinical-exercise-physiology-ms/>)

Courses

ESS 530 Cr.3

Disability and Physical Activity Implications

The causes, characteristics, incidences, and impacts of physical, sensory, emotional/behavioral, intellectual, and other developmental disabilities. Content includes a wide variety of low and high incidence disabilities (mild through severe/profound levels for each) and the implications for physical education instruction in PK-12 educational settings. Emphasis is on movement and motor development implications, adaptations, and instructional strategies to enhance physical activity and gross motor skills of individuals with disabilities, ages 3 through adulthood. Prerequisite: admission to Master of Science Physical Education Teacher Education Program. Offered Fall, Summer.

ESS 435/535 Cr.1

Sport for Persons with Disabilities

This course addresses sports that have been modified/adapted based on traditional sports and those developed specifically for persons with disabilities. Content includes the legal aspects and health enhancing benefits for sport participation for persons with disabilities, developmental sport models, disability sport organizations, sport skill development, school and community advocacy and involvement, and interscholastic adapted sport programs. Out of class clinical experience is required in the course. This course is taught largely at a graduate level. Prerequisite: admission to Master of Science Physical Education Teacher Education Program. Offered Spring, Summer.

ESS 536 Cr.3

Assessment in Adapted Physical Education

This course presents standardized tests and authentic procedures for assessing the gross motor development, motor skill performance, and health-related physical activity/fitness of persons with disabilities. Students learn to select, administer, and interpret assessment instruments and how to use results to develop the physical education components of individualized education programs (IEPs) as the basis for instructional programs. Types of assessment decisions and the PK-12 special education eligibility and service delivery process is studied. Applying in a school based setting is required. Lect. 2, Lab 2. Prerequisite: admission to Master of Science Physical Education Teacher Education Program. Offered Spring, Summer.

ESS 537 Cr.3

Teaching and Service Delivery Models in Adapted Physical Education

This course focuses on evidence-based adapted physical education teaching strategies and service delivery models in PK-12 settings. Instructional programming and best practices of early childhood, elementary, middle/secondary, and transitional programs for students with disabilities in adapted physical education are covered. Emphasis is on collaboration among professional service providers such as special educators, general physical educators, and related service personnel (e.g., occupational, physical, and recreational therapists), as well other community agency staff. Practical teaching is included, along with guest presentations on related disciplines and programs. Students are required to participate in approximately 35 clinical education hours for the semester. Prerequisite: admission to Master of Science Physical Education Teacher Education Program. Offered Fall, Spring.

ESS 440/540 Cr.3

Advanced Sport Nutrition

This course is designed to provide the student with a working knowledge of advanced topics as they relate to the field of sport nutrition. Such topics will include nutritional biochemistry, ergogenic aids, nutritional strategies for strength/power athletes, endurance athletes and altering body composition. Students will also learn how to assess an individual's dietary intake and utilize technology to determine energy needs of athletes. This course is taught largely at an undergraduate level. Graduate students will have additional course requirements/expectations. Prerequisite: ESS 302, ESS 323. Offered Summer, Winter.

ESS 445/545 Cr.3

Planning Facilities for Physical Activity and Sport

A study of planning techniques concerning facility development and maintenance for schools, athletic clubs, fitness centers, and professional sport organizations. This course is taught largely at an undergraduate level. Graduate students will have additional course requirements/expectations. Prerequisite: admission to ESS Sport Administration MS Program or consent of program director. Offered Fall, Spring.

ESS 460/560 Cr.1-3

Exercise Science Clinical Forum

Visiting lecturers as well as university professors will address various topics related to exercise science. This course is taught largely at an undergraduate level. Graduate students will have additional course requirements/expectations. Repeatable for credit. Offered Occasionally.

ESS 705 Cr.3

Outdoor Pursuits & Experiential Learning

This course utilizes the interdisciplinary nature of outdoor pursuits and experiential learning to enhance learner knowledge of and contribution to physical and educational growth. In addition, the pedagogical focus provides opportunities for learners to enhance their leadership and facilitation skills with groups of people in the outdoors. Repeatable for credit - maximum six. Lect. 1, Lab 4. Offered Summer.

ESS 720 Cr.1-6

Graduate Project in Clinical Exercise Physiology

In this course, the student will work with a faculty advisor to propose and develop a project related to the field of clinical exercise physiology. Possible projects could include a systematic review of the literature on a specific topic, an analysis of existing data, development of an educational video, or the design and implementation of an innovative programming idea into the La Crosse Exercise and Health Program offerings. The culminating end-product will be determined by the student's advisor. Repeatable for credit - maximum six. Offered Fall, Spring.

ESS 725 Cr.2

Diversity in the Physical Activity Setting

The class addresses racial, ethnic, sexual orientation, and disability issues for which physical education teachers should have an awareness. The purpose of the course is to sensitize the students to the fact that diversity is part of life in America and that a teacher needs to recognize that differences need to be understood and reflected upon so that the teacher can help all students have a positive educational experience. Pedagogical methods for integrating students are addressed, such as inclusion techniques for students with a disability, culturally diverse games, and appropriate behavior management techniques. Offered Spring.

ESS 727 Cr.2

Planning for Effective Instruction in Physical Education

This course focuses on the planning and teaching skills needed to be an effective/model physical educator. Research related to teaching and learning styles are studied and instructional materials are developed. A variety of instructional units and lessons which incorporate knowledge-based objectives and developmentally appropriate learning experiences are designed and implemented. Prerequisite: ESS 759. Offered Spring.

ESS 730 Cr.3

Research Methods for Exercise and Sport Science

This course presents the purposes, methods, and techniques for the development, conduct, and interpretation of research. Emphasis is on understanding the process and product of current research. Each student is guided in the creation of a graduate-level research proposal and other components of the research process. Offered Fall, Spring, Summer.

ESS 735 Cr.3

Statistics for Exercise and Sport Science

An introductory course in statistics with the essential purpose of providing students with the tools to conduct statistical analyses as well as to interpret and evaluate the results of research. Offered Fall, Spring, Summer.

ESS 736 Cr.3

Critical Analysis Project: Adapted Physical Education

This is a required course in the adapted physical education graduate emphasis. The student proposes, develops, and analyzes an issue or problem in the adapted physical education profession. Upon approval, the student will conduct an in-depth analysis of the issue/problem. The end product will be a written document describing the student's analysis and an oral presentation with the analysis committee. Prerequisite: ESS 530; ESS 536; ESS 537; EFN 730. Offered Fall, Spring, Summer.

ESS 737 Cr.2

Curriculum Design in Physical Education

This course presents an in-depth study of curriculum development and a variety of physical education curricular models for all PK-12 grade levels. Emphasis is on designing state and national standards based curriculum, and evaluating current written physical education curricula to assess effectiveness and student learning. Offered Fall.

ESS 744 Cr.3

Lab Techniques in Clinical Exercise Physiology

Students learn techniques for health screening, evaluation of exercise tolerance (with and without gas exchange), body composition analysis, and spirometry. The focus is on hands-on skill development and supports theoretical concepts addressed in other parts of the curriculum. Lect. 1, Lab. 4. Prerequisite: ESS 770 or concurrent registration. Offered Fall.

ESS 745 Cr.3

Pedagogy of Outdoor Physical Education

This course covers the history, philosophy, and principles of outdoor physical education, and its interdisciplinary nature and aim of employing the outdoors to contribute to student's physical and educational growth. The pedagogical focus provides teaching strategies, instructional materials, and procedures used in the field, as well as information on existing programs. Current research and national trends and issues will be emphasized. Offered Spring.

ESS 746 Cr.1-3

Physical Education Teaching Graduate Project

This project provides students with a supervised opportunity for in-depth study of a physical education issue, trend, or problem over the course of their program. Completion of the project should demonstrate advanced professional competence in program development, implementation, and/or evaluation. The project is completed with graduate faculty approval and supervision. Repeatable for credit - maximum three. Prerequisite: completion of six hours of the required core; acceptance into the Physical Education Teaching Graduate Program. Offered Occasionally.

ESS 747 Cr.3

Advanced Principles of Athletic Performance Enhancement

This course provides advanced concepts of training and conditioning for both athletes and other populations. It includes applicable and practical information for developing conditioning programs for speed, strength, endurance, and power. This course is ideal for future professionals such as athletic coaches, strength and conditioning coaches, personal trainers and those planning to become strength and conditioning professionals. Prerequisite: ESS 767. Offered Summer.

ESS 748 Cr.3

Sports Performance Practicum

This practicum course is designed to give the graduate students interested in strength and conditioning of athletes practical experience in two primary areas: 1) the development and delivery of sport-specific strength and conditioning training programs to improve athletic performance; and 2) measurement of performance related to strength and conditioning of athletes. Offered Fall.

ESS 749 Cr.3

Psychological Aspects of Sports

Examines the developmental, personal, social and psychological aspects of sport performance. Special attention is given to psychological factors such as activation, aggression, anxiety, affiliation, motivation, personality, and performance variables. Prerequisite: admission to an ESS MS Program. Offered Spring.

ESS 750 Cr.3

Mechanics and Analysis of Movement

This course is designed to provide a mechanical understanding of the human body in motion. Mechanical principles, laws, and equations will be studied and applied to human movement in exercise and sport activities. Quantitative analysis techniques will be introduced and biomechanical assessment of various exercises and sports will be performed. Prerequisite: ESS 303 or equivalent; MTH 151 or equivalent. Offered Spring.

ESS 752 Cr.3

Assessment of Physical Education and Athletics

This course is designed for practitioners in the field of physical education and athletics. Students learn to utilize assessment strategies and data to improve instruction and program effectiveness. Emphasis on the use of assessment data to document effectiveness and increase accountability of physical education and athletic programs. Offered Spring.

ESS 753 Cr.2-3

Problems in Physical Education

Provides an opportunity to investigate and to attempt solution of a professional problem in one of the following areas: 1) athletics; 2) recreation; 3) health education; 4) dance; 5) physical education. Designed primarily for experienced teachers. Repeatable for credit - can repeat the course once. Offered Occasionally.

ESS 759 Cr.3

Analysis and Supervision of Physical Education

Designed to present current research related to effective teaching in physical education, provide quantitative and qualitative techniques to gather information about and analyze teaching, and how to apply the principles of clinical supervision in physical education for the improvement of instruction. Additional emphasis is also given to the personal assessment of teaching and the need for and characteristics of effective staff development activities. Offered Fall.

ESS 761 Cr.2

Lab Techniques in Human Performance-Biomechanics

This course provides a variety of hands-on experiences in biomechanical testing procedures. Students will be introduced to a variety of testing procedures utilized in collecting kinematic, and neuromuscular data. Special techniques of data processing will also be discussed. Prerequisite: ESS 750 or concurrent enrollment. Offered Occasionally.

ESS 762 Cr.2-3

Lab Techniques in Human Performance-Exercise Physiology

Development of skills and experience (in the area of exercise physiology) necessary for data collection in laboratory and field settings, special techniques of data acquisition, processing, analyzing and interpretation of results using available experimental equipment and methods. Repeatable for credit - maximum three. Prerequisite: ESS 767 or ESS 770. Offered Spring.

ESS 765 Cr.2-3

Adventure Education for Physical Educators

This course focuses on methods, safety, research, and management of adventure education programs and initiative games in the physical education curriculum. Implementation of adventure activities with different age groups and diverse populations in physical education programs will be emphasized, as well as the principles and challenges of teaching adventure education. The use of unique environments such as ropes courses and climbing walls will be included. Repeatable for credit - maximum three. Offered Fall.

ESS 767 Cr.3

Applied Physiology of Endurance Performance

Designed to teach the physiological responses and adaptations to training and performance of endurance sports. Emphasis is on the metabolic, cardiovascular, and respiratory systems. Environmental concerns will also be addressed. Prerequisite: ESS 302 or equivalent. Offered Fall.

ESS 768 Cr.3

The Psychomotor Basis of Skill Performance

Integration of thought processes with the physical organism to produce highly skilled acts. Offered Fall.

ESS 769 Cr.3

Application of Muscle Physiology to Strength/Power Training

This course is designed to apply the training for strength and power muscular performance to teach skeletal muscle physiology in a classroom setting. The ability to regulate force and power production and muscle metabolism during strength power training will be studied. Application to common training practices including strength training, plyometrics, and sprint training and adaptations to such training highlight this course. Prerequisite: undergraduate human anatomy and physiology course; exercise physiology course; ESS 767 or ESS 770 recommended. Offered Spring.

ESS 770 Cr.3

Physiology of Activity

Designed to provide the student with a general overview of the physiological basis of activity with an emphasis on those factors affecting performance in healthy individuals. Prerequisite: ESS 302 or equivalent. Offered Fall.

ESS 771 Cr.2-3

Current Issues in Physical Education

This course is designed for practitioners in the field of physical education. Students identify the current trends and issues in physical education and explore ways to resolve the issues. Students have opportunities to pursue quality physical education through in-depth class discussions and activities on the current selected issues in physical education. Repeatable for credit with program director permission - maximum six. Offered Summer.

ESS 774 Cr.2

Clinical in Phase I and Phase II Cardiac Rehabilitation

This course is designed to provide hands-on experiences in Phases I and II cardiac rehabilitation, pulmonary rehabilitation and cardiac related co-morbidities in local hospitals. Additional activities will include two regional field trips to observe existing programs in progress. Prerequisite: open only to students in the ESS Clinical Exercise Physiology MS Program. Offered Fall, Spring.

ESS 776 Cr.3-4

Clinical in Adult Fitness/Phase III Cardiac Rehabilitation

This course is designed to provide students with hands-on experiences in exercise prescription, exercise leadership, and patient counseling in health and fitness programs for apparently healthy adults and maintenance (Phase III) cardiac rehabilitation participants. Repeatable for credit - maximum 12 credits or taken three times. Offered Fall, Spring, Summer.

ESS 777 Cr.2

Seminar in Adventure/Outdoor Physical Education

In-depth examination of educational research in adventure education. Emphasis is placed on using research to solve current problems, examining trends and contemporary issues in K-12 adventure programs. Reviewing research and using findings to solve problems in the public school setting is stressed. Offered Fall.

ESS 778 Cr.2

Practicum in Adventure Education

This practicum provides students with experiences in field based (authentic) leadership and teaching situations in a field setting with public school programs. Emphasis is on planning and developing outdoor physical education programs in conjunction with public/private K-12 programs. Consent of instructor. Offered Spring.

ESS 779 Cr.1-3

Readings in Special Physical Education

An in-depth analysis of the literature in a chosen topic pertaining to adapted physical education. Readings will include both assigned and student selected materials. In addition, there will be periodic discussions with the instructor and an agreed upon terminal assignment. Repeatable for credit - maximum three. Prerequisite: ESS 430/530, ESS 436/536. Offered Fall, Spring.

ESS 780 Cr.2

Philosophy and Organization of Preventive and Rehabilitative Programs

This course focuses on the historical background, documented benefits, and organizational issues in both conventional and innovative approaches to prevention and rehabilitation programs. The course will ultimately address both the why and how of clinical exercise and risk factor reduction programs. Offered Spring.

ESS 782 Cr.3

Electrocardiography

Course is designed to instruct the student in the basics of the normal, the abnormal resting and the exercise electrocardiogram. Involves lecture experiences and intensive investigation of documented ECG-GXT case studies. Offered Summer.

ESS 783 Cr.3

Graded Exercise Testing and Exercise Prescription

This course is designed to provide students with the theoretical and practical knowledge necessary to conduct and interpret the wide variety of diagnostic exercise tests commonly used in clinical practice. Additionally, students will be able to formulate, based on test results, appropriate exercise prescriptions for healthy adults, as well as patients with a wide variety of chronic diseases. A major goal of the course is to provide students with the knowledge and practical skills required to take the American College of Sports Medicine Registered Clinical Exercise Physiologist certification examination. Prerequisite: ESS 782. Offered Spring.

ESS 784 Cr.3

Advanced Cardiovascular Physiology

Designed to acquaint the student with advanced principles and concepts regarding cardiovascular physiology. The course examines in detail the various parameters of the cardiovascular system, the implication of disease and structural abnormalities to these parameters, and the relationship of resting cardiovascular data to exercise data. Lect. 2, Lab. 2. Offered Spring.

ESS 785 Cr.5

Internship: Clinical Exercise Physiology

Designed to provide the student with practical work experience in an adult fitness (YMCA/corporate environment) or clinical setting. The internship is three months in duration and all course work and thesis requirements must be completed prior to the beginning of the internship. Prerequisite: open only to students in the ESS Clinical Exercise Physiology MS Program. Offered Fall, Spring, Summer.

ESS 786 Cr.1

Advanced Cardiac Life Support (ACLS)

An in-depth study and the development of understanding and skills of Advanced Cardiac Life Support (ACLS). Successful completion of the course and passing the ACLS exam results in the student being ACLS certified. Prerequisite: ESS 782. Offered Summer.

ESS 787 Cr.1-3

Clinical Internship in Adapted Physical Education

Students complete clinical experiences in adapted physical education settings. Students are required to complete three different clinicals. Each experience is one semester and for one credit hour. Clinical experiences may include infant (0-2 years) stimulation programs, pre-school or early childhood programs, motor development and physical fitness programs for persons with disabilities, and school-based adapted physical education programs. Three credits of internship are required in the adapted physical education emphasis of the graduate Physical Education Teacher Education Program. Repeatable for credit - maximum three. Prerequisite: admission to ESS Physical Education Teacher Education MS Program. Offered Fall, Spring, Summer.

ESS 788 Cr.6

Internship in Sport Administration

Designed to provide students with an intensive supervised sport administration work experience. The internship must be at least three consecutive months (40 hours per week). Only approved sites can be used for internships. Prerequisite: open only to students in ESS Sport Administration MS Program who have completed all required course work for the degree. Offered Fall, Spring.

ESS 789 Cr.3

Internship: Human Performance

A practical learning experience designed to apply the competencies gained within the human performance emphasis in a community, institutional or industrial setting. Each intern will earn three elective credits for a mutually agreed upon time period, consistent with the policies of the university and the internship site. All other course work shall be completed prior to the internship experience. Repeatable for credit - maximum six. Offered Fall, Spring, Summer.

ESS 794 Cr.1-3

Readings in Sports Psychology

A survey and analysis of current and classical literature pertaining to the area of sport psychology in human performance. Readings will include both assigned and student selected materials for the purpose of student presentation to and discussion with the assigned instructor. Prerequisite: ESS 749; graduate student in ESS MS Program. Offered Fall, Spring.

ESS 795 Cr.1-3

Independent Study

Advanced work not covered in regular courses. Repeatable for credit - maximum six. Consent of advisor. Consent of department. Offered Fall, Spring, Summer.

ESS 796 Cr.1-3

Readings in Biomechanics

A survey and analysis of current and classic literature pertaining to the area of biomechanics in human performance. Readings will include both assigned and student selected materials for the purpose of student presentation to and discussion with the assigned instructor. Prerequisite: ESS 750; graduate student in ESS MS Program. Offered Occasionally.

ESS 797 Cr.1-3

Readings in Exercise Physiology

A survey and analysis of current and classical literature pertaining to the area of exercise physiology in human performance. Readings will include both assigned and student selected materials for the purpose of student presentation to and discussion with the assigned instructor. Prerequisite: ESS 767 or ESS 770. Offered Fall, Spring.

ESS 798 Cr.1-3

Readings in Motor Learning

A survey and analysis of current and classical literature pertaining to the area of motor learning in human performance. Readings will include both assigned and student selected materials for the purpose of student presentation to and discussion with the assigned instructor. Prerequisite: ESS 768; graduate student in ESS MS Program. Offered Fall, Spring.

ESS 799 Cr.1-6

Research: Master's Thesis

An independent research project is to be selected and executed under the direction of a staff member by those students electing to write a thesis. The project may be in any of the areas related to physical education, such as health, recreation, or athletics. Repeatable for credit - maximum 10. Offered Fall, Spring, Summer.