

# HEALTH AND MOVEMENT SCIENCES (HEMS)

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## **HEMS 500. Motor Development of Young Children. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores the development of small children, preschool, kindergarten and first-grade children through physical education. Emphasis will be on the construction of a program of motor development for each of these three groups. The programs will be based on the research findings in such areas as perceptual-motor development, motor learning, educational psychology and others. Those students and teachers in the fields of physical education, special education and elementary education should find this course useful in developing programs of motor development for their students.

## **HEMS 505. Contemporary Issues in Health. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Focuses on contemporary issues related to lifestyle and health behavior. Emphasizes the factors that influence health and the lifestyle changes that promote and maintain optimal health. Issues may include sexuality, nutrition, chronic and communicable diseases, aging, environmental health, policy, and health care systems.

## **HEMS 507. Teaching Health in Schools. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines health issues, family influences, teenage attitudes and signs of progress in health behavior. School health programs, including remedial, classroom instruction and environmental aspects of school life also are considered.

## **HEMS 514. Physical Activity for Special Populations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides fundamental information to students at the graduate level on physical activity programming for children with disabilities. Course content focuses on programming techniques and methods that are most effective in meeting the specific physical activity needs of the individual child. Emphasis is on Public Law 94-142 provisions currently affecting physical education programming for special populations; in particular, the development of specially designed physical education programs, individualized education programs and programming in the least restrictive environment.

## **HEMS 521. Pathomechanics of Sport Injuries. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Addresses musculoskeletal and sports injury mechanisms from a pathomechanical and pathophysiological perspective. Focuses on acute trauma and repetitive stress injuries to the musculoskeletal system. Emphasizes evaluation and diagnostic procedures and the pathophysiology and evaluation of mild head injuries commonly acquired as part of physical activity.

## **HEMS 550. Exercise, Nutrition and Weight Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides an in-depth analysis of the scientific principles associated with weight management strategies. Emphasizes the separate and combined effects of exercise, nutrition and behavioral interventions relative to weight loss, weight gain and weight maintenance. Includes life cycle nutrition, childhood obesity, adult obesity and chronic disease, weight management intervention strategies, eating disordered behavior and the female athlete triad.

## **HEMS 591. Topical Seminar. 1-3 Hours.**

Semester course; 1-3 seminar hours. 1-3 credits. May be repeated for a maximum of 6 credits. A seminar intended for group study by students interested in examining topics, issues or problems related to health, physical education, exercise science, recreation and sport. Crosslisted as: SPTL 591.

## **HEMS 600. Introduction to Research Design in Health and Movement Sciences. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides an understanding of the basic knowledge and methodology of research in health and movement sciences. Develops the ability to critically read and evaluate research, acquire a conceptual understanding of statistics and develop an empirical study related to healthy and diseased populations.

## **HEMS 601. Movement Physiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 375 or equivalent. Investigates the physiological processes in relation to bodily exercises in everyday life and sports activities. Physiological changes in the human organism due to movement. Investigation and application of research to health and movement sciences. Students must design, conduct and write a pilot study.

## **HEMS 602. Statistical Applications in Health and Movement Sciences. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Presents theory and techniques involved in the analysis and interpretation of data pertinent to research in health and movement sciences. Includes statistics applied to data encountered in published health and movement sciences research.

## **HEMS 603. Applied Fitness and Nutrition for Health and Movement Science Professionals. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An in-depth study of applied fitness and nutrition principles and practices. Emphasizes the application of knowledge and fundamental fitness and nutrition principles.

## **HEMS 604. Nutrition for Health and Physical Activity. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 350 or equivalent. Provides an in-depth examination of the basic nutrients and their effects on health, fitness and sport performance. Emphasizes an understanding of the biochemistry of metabolism and knowledge of the current research related to nutrition, health and exercise performance.

## **HEMS 605. Psychology of Physical Activity. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Introductory psychology, personal health or equivalent. Examines psychological issues related to exercise and physical activity. Includes individual and group motivation theory and techniques, leadership effectiveness, mental health, mental skills training, injury rehabilitation, eating disorders, exercise adherence, addiction, over training and use of ergogenic aids. Emphasizes examining current research and applications of psychological principles and knowledge in a physical activity setting.

## **HEMS 606. Psychosocial Aspects of Sport and Physical Activity. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines social and psychological issues in sport and physical activity, with emphasis on socialization and motivation for sport and physical activity; patterns of participation and opportunities related to race, gender and social class; mental skills training for performance enhancement; aggression and violence in sport and society; and the role of sport and physical activity in the educational system. Emphasizes examining current research and applied methods in addressing these issues.

## **HEMS 610. Laboratory Techniques in Rehabilitation Science. 3 Hours.**

Semester course; 3 hours. 3 credits. Prerequisite: HPEX 375 or equivalent. Laboratory-based course examining the various procedures related to measurement and experimentation in human performance. Includes examination of instruments designed to assess cardiovascular, musculoskeletal and pulmonary performance. Emphasis is given to application of instrumentation to physical training in healthy and diseased populations and to treatment and rehabilitation in a clinical setting.

**HEMS 612. Administration and Supervision of Physical Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Gives guidelines for administrative and supervisory policies and problems in physical education and explores observation techniques, standards for judging instruction, the supervisory conference and cooperative supervision. Emphasis is placed upon the common problems met by administrators and supervisors.

**HEMS 613. General Motor Ability Evaluation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Investigates the theory of the construction of evaluative instruments in physical education with emphasis on a critical examination of existing measurement devices. Emphasis on the use of measurement as a tool for improving physical education programs.

**HEMS 614. Motor Assessment for Special Populations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: HEMS 514 or permission of instructor. Provides the student with basic information regarding motor tests and observational instruments that assess and evaluate special populations. Focuses on the analysis of these tests as to their 1) main components and items purporting to measure these components; 2) administration, i.e., time, administrator's experience, group size, validity and reliability and standardization; and 3) use in establishing and monitoring annual goals and short-term objectives for an individualized education program.

**HEMS 615. Orthopaedics and Therapeutics in Sports Medicine. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides in-depth exposure to procedures used in orthopaedics and physical medicine. Includes lectures and presentations by physicians, surgeons and other health care personnel. Focuses on linking diagnostic and surgical techniques used in orthopaedics and physical medicine to the rehabilitative treatment plan. Emphasizes the diagnosis and treatment of neuromuscular diseases and adaptive technologies for disabled populations.

**HEMS 620. Motor Learning and Performance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Analysis of early patterns of behavior and the development of physical skills in childhood, adolescence, and adulthood. Consideration of differences in motor proficiency and factors affecting the acquisition of motor skills and concepts of motor learning with reference to the improvement of instructional practices.

**HEMS 621. Sports Medicine. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: HEMS 521 or permission of instructor. Designed to give the student knowledge in the advanced principles of prevention and treatment of athletic injuries. The course includes advanced first aid techniques and the more sophisticated means of athletic care and prevention. Students are exposed to such modalities as mechanical therapies, thermal therapy, cryotherapy, hydrotherapy and electrotherapy. One major component of the course deals with therapeutic exercise and its use in the rehabilitation of the injured athlete.

**HEMS 637. Advanced Technology in Teaching Health and Physical Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Designed to prepare students to apply knowledge and skills in using technology in the physical education setting. Emphasis is placed on creating lessons using pedometers, downloadable heart-rate monitors, flip cams, computerized observational systems and the pocket PC. Focus is also on the use of local county grade-reporting systems.

**HEMS 640. Health Care Organization and Delivery in the U.S.. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides an overview of the U.S. health care system and its many diverse components. Within the context of the U.S. health system, the course also provides students a perspective on the growing role of health behavior coaches as part of the interdisciplinary health team, the variety of employment opportunities and the business development potential of the field.

**HEMS 641. Human Disease Prevention, Prevalence and Lifestyle Risk Factors. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines major categories of diseases, i.e., infectious, noninfectious, acute and chronic, including significant examples in each category. Current modalities for the prevention, treatment and control of diseases will be studied. In addition, the course will provide learning experiences to prepare students to convey information as health behavior coaches to a variety of audiences, including individual patients/clients, groups, specific priority populations and the general public.

**HEMS 642. Theoretical Foundations of Health Behavior Change. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Investigates the relationship between health and behavior, with emphasis on both theory and application. The course addresses the theoretical foundations of behavior change, including an overview of leading theories as well as critical evaluation of their utility in promoting health behavior change.

**HEMS 643. Fundamentals of Motivational Interviewing. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Restricted to health behavior coaching certificate students only. Introduces students to the fundamentals of motivational interviewing, a state-of-the-art, evidence-based communication and counseling technique. MI is designed to build clients' and patients' inner motivation and self-efficacy for positive health behavior change and maintenance. This course will expose students to the theory, principles and skills of MI that can be utilized with individuals or with groups.

**HEMS 644. Advanced Motivational Interviewing. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: HEMS 643. Expands the students' exposure, understanding and practice of motivational interviewing, a state-of-the-art, evidence-based communication and counseling technique. MI is designed to build clients' and patients' inner motivation and self-efficacy for positive health behavior change and maintenance. This course will reiterate the importance of the theoretical foundation underlying MI, examine applications of MI and provide opportunities for advancing students' skills through role-playing specific to health behavior change.

**HEMS 645. Application of Motivational Interviewing in Clinical Settings. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: HEMS 644, HEMS 647 and HEMS 648. Expands the student's knowledge, skills and competencies in motivational interviewing by focusing on the utilization of this communication and counseling technique in clinical settings (i.e., health/medical care settings). Students will be exposed to applications of MI that can be employed with individual patients or clients who present with single disease processes or comorbidities.

**HEMS 646. Application of Motivational Interviewing in Group and Community Settings. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: HEMS 644, HEMS 647, HEMS 649. Expands the student's knowledge, skills and competencies in motivational interviewing by focusing on the utilization of this communication and counseling technique in group or community settings (e.g., support groups, groups in community organizations, groups in faith-based organizations, etc.). Students will be exposed to applications of MI that can be employed with groups who present with common health challenges or groups who are concerned with health promotion and disease prevention.

**HEMS 647. Concepts and Applications in Chronic Disease Self-management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HEMS 640, HEMS 641, HEMS 642 and HEMS 643. Evidence-based course designed to enhance the student's knowledge of lifestyle factors such as physical activity, nutrition, weight management, stress management, medication compliance and tobacco cessation, etc., as they relate to the self-management of the most prevalent chronic diseases that affect the U.S. Students will learn hands-on skills to assist patients/clients across the lifespan.

**HEMS 648. Health Behavior Change Counseling Techniques for Clinical Interventions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HEMS 640, HEMS 641, HEMS 642, HEMS 643. Focuses on the development of knowledge and skills that are essential to effective interpersonal communication and counseling, which will lay the foundation for effective health behavior coaching. Emphasis will be placed on fundamental counseling techniques and motivational interviewing and their applications to individual level health behavior change.

**HEMS 649. Planning, Implementing and Evaluating Group/Community Health Behavior Change Interventions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HEMS 640, HEMS641, HEMS 642 and HEMS 643. Addresses the fundamentals of planning, implementing and evaluating health behavior change interventions in a variety of group or community settings, including support groups, worksite health promotion groups, community groups, faith-based groups, etc. Students will operationalize and apply the knowledge and skills essential to the effective practice of certified health behavior coaches.

**HEMS 675. Clinical Exercise Physiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. Examines theoretical and functional techniques of graded exercise testing for functional and/or diagnostic assessment. Topics include pulmonary, cardiovascular, respiratory and myocardial physiology, and the principles and skills of exercise prescription based on metabolic calculations.

**HEMS 690. Research Seminar in Health and Movement Sciences. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated for a maximum of 3 credits. Provides opportunities for presentation and discussion of current research and topics of interest in health and movement sciences. Presents relevant research for discussion delivered by guest researchers, faculty and students.

**HEMS 691. Topics in Health and Movement Sciences. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated for 9 credits. Check with division head for specific prerequisites. Examines specialized issues, topics, readings or problems in health and movement sciences.

**HEMS 692. Independent Study. 1-3 Hours.**

Semester course; 1-3 independent study hours. 1-3 credits. May be repeated for 6 credits. Determination of the amount of credit and permission of the instructor and division head must be procured prior to registration. Cannot be used in place of existing courses. An individual study of a specialized issue or problem in health or movement sciences. Crosslisted as: REMS 692.

**HEMS 695. Externship. 1-6 Hours.**

Semester course; 1-6 credits. May be repeated for 6 credits. Prerequisite: Permission of instructor. Plan of work designed by extern with prior approval of the offering department. State certification or equivalent may be required for some externships. Off-campus planned experiences for advanced graduate students designed to extend professional competencies in health and movement sciences. Directed by university faculty in cooperation with clinical on-site supervisors.

**HEMS 797. Directed Research Study. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated for a maximum of 6 credits. A research study of a topic or problem approved by the student's adviser and completed in accordance with division policy regarding the directed research study.

**HEMS 798. Thesis. 1-6 Hours.**

Semester course; 1-6 credits. May be repeated for a maximum of 6 credits. A research study of a topic or problem approved by the student's supervisory committee and completed in accordance with acceptable standards for thesis writing.