

# HEALTH SCIENCES

The Health Sciences Department helps students master theoretical and practical aspects of the sciences in preparation for careers and graduate studies in healthcare or sport and wellness. Organizational, communication, interpersonal, leadership, and technical skills are emphasized within a liberal arts framework. Health science students are challenged to integrate faith, knowledge, and compassion in an interprofessional approach to either understanding and treating medical conditions or assisting others to maintain healthy, physically active bodies. The goal is to prepare graduates for the many opportunities they will encounter as they minister to the spiritual, psychological, and physical needs of their patients or clients that accompany the pursuit of health and wellness.

## Majors

- Exercise Science Major
  - Pre-Athletic Training Emphasis
  - Pre-Occupational Therapy Emphasis
  - Pre-Physical Therapy Emphasis
  - Kinesiology Emphasis
- Pre-Nursing Program
- Sport & Wellness Management
  - Sport Management Emphasis
  - Health and Wellness Emphasis

## Minors

- Coaching
- Fitness Specialist

## Courses

### HS 161 Medical Terminology - 1 Hour

The course includes a study of terms relating to medical technology and practice, health sciences fields, and ancillary hospital services, including abbreviations, spelling, and pronunciation. Some individual computer work required. Offered fall semester Quad A for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

### HS 162 Introduction to Interprofessional Health Sciences - 1 Hour

This course serves as an introduction to the allied health care disciplines of Athletic Training, Exercise Science, Nursing, Occupational Therapy, Physical Therapy, and Physician Assistant, including the education prerequisite, curriculum, credentialing, licensing, and work conditions. Emphasis on students learning with, from, and about other professionals to enable effective collaboration among professionals to improve health outcomes. Emphasis on planning and securing discipline specific clinical experiences during the student's undergraduate experience. Offered fall semester Quad B for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

### HS 165 Responding to Emergencies and Sport Safety Training - 3 Hours

Collegiate-level American Red Cross course that certifies participants in Community CPR, RTE First Aid, and Sport Safety Training. Includes the importance of a safe and healthy lifestyle, basic prevention and care of acute trauma injuries, sudden and chronic illnesses. Laboratory skills, practicum, and observation are included. Laboratory fee. Offered fall semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

### HS 168 Prevention and Care of Athletic Injury - 3 Hours

A lecture/laboratory approach providing foundation for pursuing a career in athletic training. A systematic approach to conditioning principles, emergency preparation, protective taping/wrapping skills, injury mechanism, resulting pathology, and care of injuries by participation of the physically active in sport/recreation. Policy, procedures, and observation of the athletic training room are included. Prerequisites: HS 161 and current American Red Cross Community First Aid and CPR certification (or acceptable equivalent), HS 162, or consent of instructor. Laboratory fee. Offered spring semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

### HS 201 Physiology of Exercise - 3 Hours

A systematic approach to the study of the function of the human body during physical activity and recovery. Emphasis is placed on how the physiology of the sedentary body responds and adapts to both acute and chronic workloads. The application of these principles to exercise prescription for the achievement of optimal fitness and athletic performance will be applied. Laboratory is included. Prerequisites: BIO 140 or BIO 340-341 and current Community First Aid and CPR certification (or acceptable equivalent) or consent of instructor. Laboratory fee. Offered spring semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

### HS 202 Nutrition - 3 Hours

Effects of nutrition on performance and health emphasizing various methods of nutritional analysis, effects of current dietary practices, basic behavior modification techniques, nutritional needs of competitive and special populations, ergogenic aids and referral resources. Offered each semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate and Waupun Initiative.

### HS 251 Kinesiology - 3 Hours

The purpose of this course is to study the human body from both the functional anatomy and biochemical perspectives. It will discuss the anatomical components of human movement, including bones, joints, nerves, and muscles, and move into the basic analysis of human motion through the use of biomechanical principles. An application of proper technique, with an emphasis of proper analysis and training techniques for movement effectiveness, efficiency, and injury prevention will introduce students to the kinesiology analysis method of movement, analyzing a broad range of movements throughout the course of the semester. Prerequisites: BIO 140 or BIO 340. Offered Spring semester for Deerfield traditional undergraduate. Laboratory fee. Delivery mode: Deerfield traditional undergraduate.

### HS 305 Health Science Applications - 1-4 Hours

In-depth instructional, teaching, or laboratory experience designed to enhance the student's expertise, critical thinking, laboratory and communication skills in any of several areas. May be repeated for credit. Prerequisite: invitation of instructor. Instructor's consent by signature required. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 350 Topics in Health Sciences - 3-4 Hours**

Utilizing the current literature, this course examines an advanced topic in a field of health sciences. Prerequisites: BIO 111, CH 103 or CH 111-CH 112, or consent of the instructor. Course may be repeated with different topic. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 351 Biomechanics - 3 Hours**

Theory and application of the interrelationships of the anatomical and mechanical principles governing human movement. Emphasis is placed on activities of sport and daily living. Laboratory is included. Prerequisites: HS 251, current Community First Aid and CPR certification (or acceptable equivalent), or consent of instructor. Laboratory fee. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 360 General Medical Conditions in the Physically Active - 3 Hours**

The course covers the knowledge, skills, and values that the entry-level certified athletic trainer must possess to recognize, treat, and refer when appropriate the general medical conditions of athletes and other physically active individuals. Major areas of study include various body systems, common illnesses and ailments, and athletic implications for common medical conditions, such as diabetes, asthma, and weather-related illnesses. Prerequisite: HS 168. Offered spring semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 365 Motor Learning and Lifespan Development - 3 Hours**

A study of basic principles of motor learning and motor development as they relate to human voluntary movement across lifespan. This course is designed to provide theory and application related to the process of acquiring functional motor skills, the performance enhancement of learned or highly experienced motor skills, or the re-acquisition of skills that are difficult to perform or cannot be performed because of injury or disease. Additional emphasis on how to create and implement developmentally appropriate movement programs. Delivery mode: Deerfield traditional undergraduate.

**HS 370 Introduction to Therapeutic Modalities and Rehabilitation - 3 Hours**

A lecture/laboratory course designed to introduce the basic theory and application of therapeutic modalities and rehabilitation. Emphasis on tissue healing, functional progression, pain control, indications, contraindications, protocols, and the body's response to therapeutic agents and exercise. Prerequisites: HS 168 or consent of instructor. Laboratory fee. Delivery mode: Deerfield traditional undergraduate.

**HS 380 Advanced Functional Anatomy - 3 Hours**

This course provides an advanced study of the functional anatomy of the human body through the interrelationship of structure and function. An emphasis on how injury, illness, and disease impact the ability of the human body to perform activities of daily living. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 402 Sport Nutrition - 3 Hours**

This course will examine the different physiological relationships between nutrition and exercise. Emphasis is placed on the body's metabolic response to a wide range of stresses that occur in different sports and activities, at different intensities, and within different environments. Macro and micronutrients and their respective roles in energy production and the development of improved athletic performance are discussed in detail. In addition, this course will study those methods of assessing an athlete's nutritional needs and status. Prerequisites: HS 201; HS 202. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 410 Health Sciences Seminar - 1 Hour**

This course includes presentations and discussions of selected papers, topics of current interest in the field, senior research projects by students, and invited speakers. Starting in the student's second year in a Health Sciences major, this course must be taken each semester it is offered until graduation or changing of major. The student will audit all semesters except one. During the spring semester of the student's senior year, the course must be taken for credit and a senior presentation will be required. Prerequisite: major in the Health Sciences or consent of the instructor. This course fulfills the IDS 499X Integrative Thought Capstone requirement for students in the Athletic Training major. Offered every semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 446 Field Internship - 1-12 Hours**

Professional internship experience in an applied field under the dual supervision of a Trinity College faculty member in the Division of Science Technology and Health and a practicing on-site professional. May be repeated for credit. Prerequisites: departmental approval and current Community First Aid and CPR certification (or acceptable equivalent). Satisfies the Professional Experience Requirement. Offered each semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 450 Independent Study - 1-4 Hours**

Research and specialized studies designed to meet the needs of individual students. Prerequisite: consent of instructor. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 454 Measurement, Research, Statistics and Technology - 3 Hours**

A lecture/laboratory approach to the measurement techniques, instruments, research methodology, and technology used in the fields of human performance and wellness/health sciences. The course focuses on test selection/construction criteria, standardized tests, and techniques employed in the measurement of the cognitive, affective, and psychomotor domains. Common statistical models will be used to evaluate the measurement results and to apply them in the processes of exercise prescription and wellness counseling. Laboratory is included. Prerequisites: HPW 201X or HS 351X, and current Community First Aid and CPR certification (or acceptable equivalent). Laboratory fee. Offered fall semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 455 Advanced Strength Training and Program Design - 3 Hours**

This course explores the scientific foundations of strength training and conditioning and allows students to develop their skills in program development in applied physical training for specific performance populations. It prepares students for the Certified Strength and Conditioning Specialist (CSCS) exam. The CSCS credential identifies those individuals who have knowledge in scientific foundations of strength and conditioning as well as the skills to apply that knowledge in a practical format. Prerequisites: HS 351, current Community First Aid, and CPR certification (or acceptable equivalent), or consent of instructor. Offered fall semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 456 Administration - 3 Hours**

A capstone course covering theories, procedures, and decision-making skills for management of various institutions and agencies in the fields of human performance and wellness/health sciences. Topics include organization, personnel, facilities and equipment, legal issues, budget and accounting, ethics, and meeting the needs of the consumer. Prerequisites: BIO 140 or BIO 340-341, HS 201X or consent of instructor. Offered fall semester in even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 470 Undergraduate Research - 1-4 Hours**

A course involving clinical, laboratory or library investigation of a research problem under faculty supervision. Course requirements include a literature survey, research, a written formal report, and oral presentation of results in either the Health Sciences (HS 410), Biology (BIO 410), or Chemistry (CH 410) Seminar courses. Prerequisites: HS 168 and at least one of the following: BIO 340-BIO 341, HS 261-HS 262. Instructor's consent required. May be repeated for credit. (A laboratory fee may be required, depending on the nature of the project.) Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HS 480 Professional Rotation in Health Sciences - 1-6 Hours**

This course is a supervised experience in one or more professional environment(s) which demonstrates the student's ability to relate knowledge and skills developed in the major to practical tasks in the workplace or clinical setting. Open to majors in the Health Sciences department or by consent of instructor. Planning placement options with the instructor one semester prior to enrollment is required. Satisfies the Professional Experience Requirement. Prerequisites: HS 168, current Community First Aid, and CPR certification (or acceptable equivalent). Offered each semester for Deerfield traditional undergraduate. Laboratory fee. Delivery mode: Deerfield traditional undergraduate.

**HS 490 Seminar in Interprofessional Health Sciences - 1 Hour**

This course includes presentations and discussions of selected papers, topics of current interest in health sciences, student research projects, and invited guest speakers representing the variety of professions within the department. Emphasis on interprofessional practice, ethical decision-making processes, and preparation to enter the discipline specific workforce to enable effective collaboration and improve health outcomes. Prerequisite: major in the discipline or consent of the department chair. This course fulfills the IDS 499X Integrative Thought Capstone requirement for students in the Exercise Science major. Offered spring semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 180 Introduction to Health and Wellness - 3 Hours**

The study of the quality of life involving dynamic interaction and interdependence among the individual's well being, mental, and emotional reactions, and the social complex in which the individual exists. Coursework includes theory of health, mental and emotional health, prevention and control of disease, nutrition, substance use and abuse, accident prevention and safety, community health, environmental health, and family life education. Includes laboratory and personal application experiences. Instructional fee for Deerfield traditional undergraduates. Offered each semester for Deerfield traditional undergraduate; other modes as scheduled. Delivery mode: Deerfield traditional undergraduate, Florida undergraduate, online.

**HPW 190 Foundations of Human Performance and Wellness - 3 Hours**

A study of the social, biological, and psychological foundations of health and human performance, relative to the total fitness, sport, or wellness setting. Emphasizes historical, philosophical, cultural and ethical aspects of health and human performance. Becoming active at the local, state and national levels will be explored. A minimum of ten hours of field experience is required. This course is open to majors and minors in the Division of Science, Technology, and Health only or by consent of the instructor. Prerequisite: HPW 180 or consent of instructor. Offered spring semester odd-numbered years for Deerfield traditional undergraduate; other modes as scheduled. Delivery mode: Deerfield traditional undergraduate and Florida undergraduate.

**HPW 220 Practicum in Sport and Wellness Management - 3 Hours**

Course designed to provide professional observation and experience in the area of Sport and Wellness Management. Assignments, project management opportunities, and skill applications are performed with dual guidance, supervision, and evaluation of a practicing on-site professional and a Human Performance and Wellness faculty member. Assignments, reports, and presentations are required at weekly meetings. The course may be taken three times with different assignments. First assignment is a required human performance laboratory practicum. Completion of this course with a "B" or better is required to pursue the Internship route. Open to Sport and Wellness Management majors or by consent of instructor. Prerequisites: HPW 180, HPW 190, HPW 201 or HPW 203, current Community First Aid and CPR certification (or acceptable equivalent), and departmental approval. Offered fall semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 221 Off-Season Camping Practicum - 1 Hour**

On-site observations and experiences related to camp operations outside of the summer program, gaining perspective relating to a year-round operation. Prerequisites: Current Community First Aid and CPR certification (or acceptable equivalent). Additional fee. Delivery mode: Deerfield traditional undergraduate.

**HPW 224 Team Sports - 3 Hours**

Theory, technique, and skills of coaching and teaching various sports of a team nature. Emphasis is placed on rules, etiquette, strategies, and the development of fundamental skills through instruction and practice. Instructional and motivational methods are applied and evaluated in a lab teaching situation. Open to Sport and Wellness Management majors or by consent of instructor. Prerequisite: Current Community First Aid and CPR certification (or acceptable equivalent). Offered fall semester in even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 228X Sport and Wellness Psychology - 3 Hours**

A study of the psychological and mental factors that influence and are influenced by participation and performance in sport, exercise, and physical activity, and the application of the knowledge gained through this study to everyday settings. Prerequisite: PSY 140 or ED 260. Cross listed with PSY 228X. Offered spring semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 250 Special Topics - 1-4 Hours**

Selected topics in Human Performance and Wellness. May be repeated for credit with different topics. Prerequisite: HPW 190 or consent of instructor. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 320 Sports Operations - 3 Hours**

This course provides a systems approach to facility management. The focus will include elements of design and development as it relates to facilities and special events. Trends in facility operations, scheduling, purchasing, equipment, maintenance, and evaluative techniques will be explored. It is designed to provide students with an overview of facility planning and design, operations and event management. Offered spring of even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 333 Adventure Education - 3 Hours**

Theory, technique, skills, and risk management for leading and teaching adventure learning activities. Emphasis will be placed on the responsibility and efficient engagement of physical, environmental, and human resources. Limited to Human Performance and Wellness majors and Christian Ministries majors or by consent of instructor. Prerequisite: current Community First Aid and CPR certification (or acceptable equivalent). Additional fee. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 334 Management of Sport and Wellness - 3 Hours**

Programming philosophy, theories, and principles for designing, conducting, and evaluating recreational programming for a variety of delivery systems including fitness, instructional, informal, camps, outdoor adventure, intramural, and extramural sport. Emphasis is placed on managing risk within the movement setting and leading for total personal development. Offered fall semester of odd-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 430 Sports Law and Ethics - 3 Hours**

This course provides a foundation for general legal concepts and familiarizes students with those legal issues they are most likely to encounter as coaches and managers in the sports industry. Topics covered include tort law, negligence, acts and amendments, contracts, compliance with codes and regulations, and the influence of current state and federal legislation. The class will deal with how a biblical worldview defines and drives the choices faced in sport while examining lawsuits and case studies that have established current laws and regulations. Offered fall of even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 446 Field Internship - 1-12 Hours**

Work experience in an applied field under the dual supervision of a Human Performance and Wellness faculty member and a practicing on-site professional. Prerequisites: senior status, completion of all preprofessional coursework, departmental approval, and current Community First Aid and CPR certification (or acceptable equivalent). Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 450 Independent Study - 1-4 Hours**

Research and specialized studies designed to meet the needs of the individual student. Prerequisite: Consent of the instructor. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 490 Seminar in Human Performance and Wellness - 1 Hour**

A capstone course for the majors focusing on current issues and problems relating to ethics within the profession. Applications of theory, with practice, will be emphasized. Prerequisite: senior standing. This course fulfills the IDS 499X Integrative Thought Capstone requirements for students in the Sport and Wellness Management major. Offered spring semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPW 498 Professional Experience - 0-1 Hours**

A supervised experience in one or more professional environment(s) which demonstrates the student's ability to relate knowledge and skills developed in the major to practical tasks in the workplace, graduate school, or professional school. Requires at least 45 clock hours of prepared, supervised, and evaluated experience which demonstrates practical application of major-related knowledge and skills. The professional experience must have prior approval by the department. Offered each semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPWA 100 Intercollegiate Team Activity - 1 Hour**

A student athlete may earn one human performance and wellness activity credit by successfully participating in one season on an intercollegiate athletic team. May be repeated for credit in a different intercollegiate sport. Credit given in the semester the season ends. Delivery mode: Deerfield traditional undergraduate.

**HPWA 103 Conditioning Aerobics - 1 Hour**

Development of cardiovascular fitness through aerobic rhythms, conditioning activities, and continuous exercise modes. Offered spring semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPWA 104 Beginning Weight Training - 1 Hour**

An emphasis on strength and muscular endurance training of the major muscle groups using scientific principles for safe and efficient weight lifting. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPWA 110 Self-Defense - 1 Hour**

Development of the awareness and basic skills necessary for protection and self-defense. Focus on observational and non-confrontational skills used to prevent or postpone physical aggression. Development of competency in the use of physical defense measures needed when prevention fails. Offered on demand for Deerfield traditional undergraduate. (See catalog policy under "Advanced Standing" regarding credit equivalency for military basic training.) Delivery mode: Deerfield traditional undergraduate.

**HPWA 112 Hiking - 1 Hour**

Course designed for the recreational walker, emphasizing cardiovascular fitness, etiquette, map reading and orienteering, trip planning, and environmental issues. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPWA 113 Beginning Basketball - 1 Hour**

Instruction and practice designed for the beginning player in the rules, etiquette, offensive and defensive strategies, and the basic skills of basketball. The course will utilize a variety of drills and variations of the game to develop individual and team skills. Not open to intercollegiate basketball players. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPWA 114 Power Volleyball - 1 Hour**

Individual and team skills and techniques involved in volleyball as a recreational sport. Rules, etiquette, strategy, and formations, as well as leadership skills for conducting recreational and intramural contests. Not open to intercollegiate volleyball players. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPWA 115 Field Sports - 1 Hour**

A course offering an introduction to a variety of field sports. Rules, etiquette, strategies, and basic skills of flag football, soccer, and speedball will be emphasized. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPWA 116 Beginning Softball - 1 Hour**

Instruction and practice designed for the beginning player in the rules, etiquette, strategies, and basic skills of softball, as well as leadership skills for conducting recreational and intramural contests. The course utilizes a variety of drills and variations of the game to develop individual and team skills. Not open to intercollegiate softball or baseball players. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPWA 117 Beginning Soccer - 1 Hour**

Instruction and practice designed for the beginning player in the rules, etiquette, strategies, basic skills, and teaching progressions for soccer. Both indoor soccer/futsal and the outdoor game will be discussed and taught. Not open to intercollegiate soccer players. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPWA 118 Fencing - 1 Hour**

This course will introduce the student to Modern Sport Sabre Fencing. Instruction will include: footwork, bladework, bouting, as well as refereeing sabre matches. Students will also be exposed to the other modern fencing weapons as well as other formats of fencing including Historical European Martial Arts (HEMA) and Kendo. Course fee. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

**HPWA 204 Advanced Weight Training - 1 Hour**

Teaches students how to identify, describe, execute, and progress more advanced resistance training exercises for upper extremity, lower extremity, and trunk progressing to discussion of the common Olympic lifts. In addition to understanding proper execution and spotting techniques, basic instructional techniques for a variety of exercises will also be developed. Prerequisites: HPWA 104 or consent of instructor. Offered fall semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.