

PHYSICAL EDUCATION/EXERCISE SCIENCE

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“BY LEARNING ABOUT THE BODIES GOD HAS GIVEN

us in a detailed manner, I have grown in my faith and know that we were fearfully and wonderfully made by Him alone.”

Jonathan Huizinga '10
Exercise Science (Elmhurst, Illinois)

All physical education department programs meet Trinity's general education requirements of an oral communication course, field education, and capstone requirement. Students meet the oral communication requirement of general education by taking Communication Arts 101; the field education requirement is met by a student teaching internship (if a physical education-teaching major) or by a field education experience if an exercise science or sport and exercise studies major; the capstone requirement is met through Physical Education 330 for all majors.

The physical education teacher education program prepares students to be excellent teachers and coaches. Graduates attain a K-12 teaching specialist certificate through the state of Illinois to teach in elementary and secondary schools.

The exercise science major is designed for students interested in strength and conditioning as well as preparation to be personal trainers or fitness specialists.

The sport and exercise studies major prepares students for a career in entry level positions in youth agencies with sport programs, recreation centers, sports ministry organizations, intramurals and others within the sports industry.

The department also offers several minors: the Physical Education Teaching Minor, for students who plan to teach at the elementary level; the Health Education Minor meets the requirements for a middle grades health education endorsement; and the Coaching Minor for students who plan to coach.

Physical Education Teaching Major consists of 45 hours:

Physical Education 110, 130, 131, 201, 236, 251, 271, 278, 302, 315, 325, 330, 333, 380, 381;

Required Cognate: Biology 205

Students with a teaching major in physical education will minor in education and follow the special program (K-12) education minor course requirements as listed in the education department section of the catalog.

Sport and Exercise Studies Major consists of 48-50 hours:

Physical Education 110, 130, 131, 201, 231, 236, 260, 271, 278, 286, 302, 315, 320, 330, 400; (4-6 hours)

Required Cognates: Biology 205, Communication Arts 101.

Exercise Science Major consists of 52 hours:

Physical Education 201, 236, 271, 290, 295, 320, 330, 345, 360, 400 (3 hours);

Required Cognates: Biology 205, 206; Chemistry 101; Communication Arts 101; Nursing 221; Psychology 123.

The **Physical Education teaching minor** consists of 24 hours:

Physical Education 110, 130, 131, 251, 290, 325, 330, 380.

Physical Education 381 recommended for students planning to teach at the elementary level.

Required Cognates: Biology 205

The **health education minor** consists of 19 hours.

Physical Education 205, 236, 240, 260, 310;

Required Cognates: Nursing 221 and Psychology 242.

To meet the requirement for a **secondary health education endorsement**, the following courses are required in addition to the minor: Physical Education 251 and 325.

The **coaching minor** consists of 19 hours:

Note: Students should take Biology 205 before enrolling in the following courses.

Physical Education 236, 271, 278, 286, 320, 330.

Physical Education Courses (PE)

Note: Semesters listed are when courses are normally offered. However, course offerings and scheduling are subject to change at the discretion of the department.

110 Lifetime Fitness and Wellness (1)

Fall, Spring

Students will gain an understanding of the basic principles of physical fitness as well as the components of a healthy lifestyle. Students will develop and follow an individualized fitness program. *Fulfills the physical wellness general education requirement.*

112 Nutrition and Weight Management (1)

Fall, Spring

Students will learn basic principles of nutrition as it relates to healthy eating and to weight management. *Fulfills the physical wellness general education requirement.*

130 Individual Sport Skills (2)

Fall

This course introduces the skill techniques and strategies in the activities of badminton, fitness, bowling, golf, gymnastics/tumbling, dance, tennis, and track and field.

131 Team Sport Skills (2)**Spring**

This course introduces the skill techniques and strategies in the sports of basketball, flag football, floor hockey, soccer, softball, volleyball, and team handball.

140 Physical Education for K-9 Educators (1)**Fall, Spring**

This course introduces movement experiences and physical activity as they relate to elementary age children. For elementary education majors.

201 Foundations of Physical Education and Sport (3)**Fall, Odd**

Students study the history, goals, and philosophy of physical education and athletics.

205 Principles and Foundations of Health Education (3)**Fall, Odd**

This course will focus on foundational principles as it relates to historical and philosophical perspectives in the development of health education. Students will gain insight into the skills and knowledge needed to develop successful health education programs.

231 Recreation and Leisure Studies (3)**Spring, Even**

This course provides an introduction to concepts and central issues relevant to recreation and leisure. The organization and administration of various recreation and leisure services will also be studied.

236 Prevention and Treatment of Sports Injuries (3)**Spring**

This course provides an overview of sports injury management and care that can be applied to a variety of settings. Prerequisite: Biology 205.

240 School Health Programs (3)**Spring, Even**

This course will take a look at identifying the health needs and problems of middle and high school students. There will be an emphasis on developing teaching and learning strategies as it relates to health education. Prerequisite: Physical Education 205.

251 Measurement and Evaluation in Physical Education and Health (3)**Fall, Odd**

This course examines the theory and practice of measurement and evaluation in physical education, the selection and construction of tests and physical measurements, and the interpretation of their results by fundamental statistical procedures.

260 Drug/Chemical Use and Abuse (2)**Fall, Even**

This course will study the psychological, social, medical, legal, and economic use, misuse, and abuse of substances along with the implications for education.

271 Motor Learning and Development (3)**Fall**

Students will analyze changes in human movement behavior that occur throughout the lifespan and the influence that developmental progressions, ranges of individual variation, and levels of readiness have upon the acquisition of motor skills.

278 Physiology of Physical Activity (3)**Spring, Odd**

Students will study the physiological effects of exercise on the human body from the perspective of the physical educator or coach. Students will examine how the body responds and adapts to various forms of exercise and physical activity.

286 Coaching Theory and Practice (4)**Spring, Odd**

This course looks at the organizational and administrative aspects of coaching at the interscholastic and intercollegiate level, as well as issues that arise within the profession. This course also examines the skill techniques, coaching strategies, and methods of training and conditioning used in baseball, basketball, soccer, softball, track & field, and volleyball.

290 Exercise Physiology (3)**Spring, Even**

Students will study the physiological effects of exercise on the human body and examine how the body responds and adapts to a physical training program. Prerequisite: Biology 205.

295 Fitness Assessment and Exercise Prescription (3)**Spring, Odd**

Students will study the application of physiological principles as they relate to the evaluation of physical fitness and exercise prescription. Emphasis is placed on the design of individual and group exercise programs. Prerequisites: Biology 205 and 206, Physical Education 290.

302 Organization and Administration of Physical Education and Athletics (3)**Spring**

Students study management, theories, structures, and functions involved in organizing and administering a physical education and athletics program.

310 Community Health Programs (3)**Spring, Odd**

This course will look at the organization and administration in local, state, and national health agencies, along with their purposes and functions. The students will get an overview of methods for meeting community health needs and for solving community health problems.

315 Adaptive Physical Education (3)**Fall**

This course will enable students to identify, evaluate, and develop activities for children with disabilities. Students will develop an understanding of state and federal laws for persons with disabilities as well as study various conditions identified by law.

320 Psychology of Sport (3)**Spring, Odd**

Students will gain an understanding of the relationship of human behavior to sport and how sport influences individuals. Emphasis is given to theory, research, and application in the area of sport psychology.

325 Curriculum and Instruction in Physical Education and Health (3)**Spring, Even**

This course is a study of the curriculum and various methods used to teach physical education and health to both regular and special populations.

330 Societal Issues in Sport and Wellness (3)**Fall**

Students will analyze the impact that sport and wellness have on our society. The course will examine the different levels and opportunities within sport and wellness and will focus on issues related to economics, education, media, race, gender, youth sports, social mobility, violence, and deviance. Prerequisites: Physical Education 201 and 271.

333 Structural Kinesiology (3)**Fall**

This course examines the basic principles, laws, and concepts of human movement. Prerequisite: Biology 205.

345 Strength Training Theory and Application (3)**Fall, Odd**

This course examines the organization, design, and supervision of strength training programs. Emphasis is placed on the anatomical and biomechanical aspects of strength training. Prerequisite: Physical Education 333.

360 Special Populations and Exercise Prescription (2)**Spring, Even**

This course studies the effects of exercise and chronic activity on persons with disabilities, the elderly, and children. Factors to consider when structuring exercise programs for special populations are examined.

380 Instructional Strategies in Physical Education 6-12 (3)**Spring, Odd**

This course examines various teaching methods and classroom management in grades 6-12.

381 Methods in Physical Education for the Elementary School (3)**Fall, Even**

Students will learn the theory and practice of organizing, teaching, and evaluating physical education activities at the elementary level.

399 Independent Study (1-3)**Fall, Spring****400 Field Education (4-6)****Fall, Spring**

Intercollegiate Teams

Student-athletes may apply one hour of credit toward graduation for their participation on an intercollegiate team. To receive credit, students must complete the entire season of the sport, which includes all practices as well as the home and away contests. If a student participates on multiple intercollegiate teams, only one hour of credit for each sport may be applied toward graduation.

Note: Participation in intercollegiate teams does not fulfill the physical wellness general education requirement.

160 Intercollegiate Soccer—Women (1)

161 Intercollegiate Soccer—Men (1)

162 Intercollegiate Volleyball—Women (1)

163 Intercollegiate Basketball—Men (1)

164 Intercollegiate Basketball—Women (1)

165 Intercollegiate Baseball (1)

166 Intercollegiate Softball (1)

167 Intercollegiate Track and Field (1)

169 Intercollegiate Cross-Country (1)

PHYSICS

Thomas R. Roose, Ph.D., department chairperson

The physics program provides necessary co-requisites for chemistry and biology majors, as well as for students who desire to enrich their programs with study in one of these courses and may have an interest in physics or applied mathematics. The physics minor provides a rigorous foundation in physics with the opportunity to learn advanced physics concepts and strengthen the academic credentials of students pursuing a secondary education mathematics or science career, applying for employment or graduate school in science, applied mathematics or engineering.

*Note: Chemistry 331, an elective for the physics minor, is offered in the fall of odd numbered years.

The **physics minor** consists of 19 hours:

Physics 211, 212, 221;

Two from Physics 301, 311, 321, Chemistry 331*

Physics Courses (PHYS)

Note: Semesters listed are when courses are normally offered. However, course offerings and scheduling are subject to change at the discretion of the department.

101 Introduction to Physical Science (3)

Fall, Spring

This course provides an introductory survey of the physical sciences with particular emphasis upon topics selected from physics and chemistry. In addition to studying the science concepts the history of and methods used in science will be reviewed. *Designed to fulfill the physical science general education requirement for non-science majors.* This class includes a laboratory component.

121 General Physics (4)

Fall

This course is an introduction to the basic laws and theories of the following main areas of classical physics: mechanics, wave motion, heat, and thermodynamics. This class includes a laboratory component.

122 General Physics (4)

Spring

This course is a continuation of Physics 121. This course is an introduction to the basic laws and theories of electricity and magnetism, electromagnetic waves, light and optics, and modern physics. This class includes a laboratory component. Prerequisite: Physics 121.

211 Calculus-Based General Physics (4)

Fall

This course is a calculus-based introduction to the basic laws and theories of the following main areas of classical physics: mechanics, wave motion, heat, and thermodynamics. This class includes a laboratory component. Prerequisite: Mathematics 111 (or concurrent enrollment).

212 Calculus-Based General Physics (4)**Spring**

This course is a continuation of Physics 211. This course is a calculus-based introduction to the basic laws and theories of electricity and magnetism, electromagnetic waves, light and optics, and modern physics. This class includes a laboratory component. Prerequisite: Physics 211.

221 Introduction to Modern Physics (4)**Fall**

This course will cover special relativity, foundations of quantum mechanics, Schrödinger's equation, atoms and ordering of the Periodic Table, and some applications of quantum mechanics. The course will provide important concepts that help students build knowledge needed to bridge the introductory physics sequence to upper level physics courses as well as an introduction to modern physics. Prerequisites: Physics 212, Mathematics 112.

301 Classical Mechanics (4)**Spring, Even**

This course will cover Newton's Laws and projectiles and charged particles; momentum, energy, and oscillations; calculus of variations; Lagrange's equations and two-body central-force problems; mechanics in non-inertial frames; rotational motion and coupled oscillators. A strong foundation in classical mechanics will help students understand quantum mechanics, relativity, chaos theory, and parts of string theory. Prerequisites: Physics 212, Physics 221, Mathematics 211, or permission from the instructor. Mathematics 310 suggested.

311 Electricity and Magnetism (4)**Fall, Even**

This course will cover vector analysis and electrostatics, special analysis techniques including Laplace's equation and the method of images, electric fields in matter, magnetostatics, magnetic fields in matter, electrodynamics, conservation laws and electromagnetic waves. Prerequisites: Physics 212, Physics 221, Mathematics 211, or permission from the instructor. Mathematics 310 suggested.

321 Optics (3)**Spring, Odd**

This course will cover the nature of light, geometrical optics, optical instrumentation, wave equations, superposition of waves, lasers, interference of light, optical interferometry, coherence, fiber optics, fraunhofer diffraction, and the diffraction grating. Prerequisites: Physics 212, Physics 221, Mathematics 211, or permission from the instructor.