

- PEAC244** § (1)  
**Intermediate Floor Hockey**  
 Analysis of and drills in fundamental skills, position play, and team strategies. Emphasis given to team play.
- PEAC245** § (1)  
**Outdoor Skills Seminar:**  
 A six-day experience (Sunday–Friday) beyond the normally offered activity courses: Canoeing, Off-road Biking, Road Biking. Repeatable in different areas. Instructor's permission required. Consult the current class schedule for activities offered each year. *Summer Intensive.*
- PEAC255** § (1)  
**Intermediate Acrobatics**  
 Learning, performance, and exploration of tumbling and balancing. With emphasis on conceptual creativity, choreography, and program management. Instruction on spotting techniques, teaching theories, progression and safety will be given.
- PEAC266** (1)  
**Officiating**  
 Practical field experience in officiating. Rules, officiating mechanics, and signals, learned and practiced. MHSAA certification available. Certified officials have opportunities to earn up to \$50.00 a game for officiating elementary school, middle school, and high school athletic contests. Prerequisite: Previous knowledge of the game and/or experience playing the game.
- PEAC275** § (1)  
**Outdoor Trips-N-Treks**  
 One to two week trips beyond the normally offered activity courses: Biking, Backpacking, Canoeing. Repeatable in different areas. Instructor's permission required. Consult the current class schedule for activities offered each year. *Summer Intensive*
- PEAC300** (1)  
**Lifeguarding**  
 Instruction in accident prevention, aquatic facility supervision, and water-rescue techniques. Successful completion results in American Red Cross Lifeguard Training certification. Current first aid and CPR certification included. Prerequisite: Ability to swim 500 yards in 10 minutes or less. *Fall*
- PEAC330** § (1)  
**Wilderness Living**  
 Instruction in camping and survival techniques, open fire cooking, orienteering, backpacking, wilderness first aid, edible wild plants, and tracking. Students supply their own equipment. One weekend trip required.
- PEAC350** (1)  
**Water Safety Instructor**  
 Instruction in techniques for teaching American Red Cross swimming courses. Current CPR certification required. Swimming pretest required. *Spring*
- PEAC389** (1)  
**WSI Internship**  
 Students who have a current American Red Cross Water Safety Instructor's Certification or equivalent can take advantage of this opportunity. Participants will teach and organize a class of students for the Learn-To-Swim program. Teachers will be expected to provide lesson plans and teach all the required lessons. *Fall, Spring, S/U.*

# PHYSICAL THERAPY

**Berrien Springs Campus**  
 Physical Therapy Department  
 Andrews University  
 Berrien Springs, MI 49104-0420  
 (269) 471-AUPT or 800-827-AUPT  
 FAX: (269) 471-2866  
<http://www.andrews.edu/PHTH/>  
 Admissions Fax: (269) 471-2867  
 Admissions Email: [pt-info@andrews.edu](mailto:pt-info@andrews.edu)

**Berrien Campus Faculty**  
 Wayne L. Perry, *Chair*  
 A. Lynn Millar, *Assistant Director*  
 John C. Banks  
 Kathy A. Berglund, *Postprofessional Director*  
 John Carlos, Jr.  
 Norene M. Clouten  
 Elizabeth Oakley  
 Lee E. Olson  
 David P. Village

**Dayton Campus**  
 Andrews University Physical Therapy  
 2912 Springboro West, Suite 301  
 Dayton, OH 45439-1674  
 (937) 298-AUPT or 888-827-AUPT  
 FAX: (937) 298-9500

**Dayton Campus Faculty**  
 Philip A. Anloague  
 Heidi C. Clarke  
 Betsy Donahoe-Fillmore  
 Kurt J. Jackson  
 Harold L. Merriman  
 Janet A. Mulcare

Academic Credits	Credits
<b>Berrien Springs Campus</b>	
BHS: Bachelor of Health Science (Interim degree for DPT students)	
DPT: Doctor of Physical Therapy	116
BS: Anatomy & Physiology (phasing out) Interim degree for MSPT students)	
t-DPT: Doctor of Physical Therapy	30-38
DScPT: Doctor of Science in Physical Therapy	63
<b>Dayton, Ohio Campus</b>	
MPT: Master of Physical Therapy	80
Note: No longer accepting MPT students	

Physical therapy is a health profession dedicated to evaluating, treating, and preventing physical injury and disease. Physical therapists design and implement the necessary therapeutic interventions to promote fitness, health and improve the quality of life in patients. They also become active in consultation, education and research.

Physical therapists work closely with their client's family, physician, and other members of the medical team to help their client return to their home environment and resume activities and relationships of normal daily living.

**Academic Calendar—2004–2005.** Contact the Physical Therapy Department for academic dates.

## PROFESSIONAL ENTRY-LEVEL PROGRAMS

**Doctor of Physical Therapy (DPT).** This three-year program is taught on the Berrien Springs campus and begins after a student completes 92 semester credits of college prerequisites. A previous college degree is not necessary. Students without a bachelor's degree may earn a Bachelor of Health Science (BHS) after the first year in the professional program and will earn the DPT degree upon successful completion of the program.

**Master of Physical Therapy (MPT).** The department is no longer enrolling students in the MPT Program on the Dayton, Ohio campus. For specific degree information, please see the bulletin of the admission year to the professional program.

### ACCREDITATION AND BOARD CERTIFICATION

The DPT and MPT programs are all accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE). After receiving the degree graduates may apply to take the state board examination in the state of their choice.

### INFORMATION/APPLICATION PACKETS

Please call 1-800-827-2878, email [pt-info@andrews.edu](mailto:pt-info@andrews.edu) or visit [www.pt.andrews.edu](http://www.pt.andrews.edu) for packets, which describe admission requirements and provide all necessary forms for the DPT professional entry-level program. Information is available by June of each year. Applicants holding a bachelors or advanced degree are welcome to apply.

## DPT PROGRAM (Entry-Level)

Berrien Springs, MI

### ADMISSION REQUIREMENTS

There are three tracks for admission into the Andrews University DPT program:

#### Early Acceptance

Acceptance into the program is guaranteed if you enroll as a freshman pre-physical therapy major completing all prerequisite course requirements at Andrews University, earn the minimum required GPA and receive positive evaluations.

#### Preferred Admissions (Early Transfer Students)

Students who transfer into Andrews University to complete prerequisite courses will be given preference for admission into the professional program.

#### Transfer Students

The Andrews University physical therapy programs enroll students from a nationwide pool. Any student who has completed prerequisite courses from an accredited college or university (or U.S. equivalent) is welcome to apply for acceptance.

Admission to the DPT program is selective based on the following considerations:

**1. Prerequisite Courses:** Complete 92 semester credits of appropriate course work. At least 15 upper division credits from 3 or more content areas are required, unless holding a bachelor's degree.

**Biological Sciences**—A full sequence of anatomy and physiology or general biology with labs **plus** an upper division vertebrate biological science course.

**Physical Sciences—Option 1:** A full sequence of general physics with labs as required for physics majors or pre-med students **plus** any two chemistry courses with labs; or **Option 2:** A full sequence of general chemistry with labs as required for chemistry majors or pre-med students **plus** any two physics courses with labs.

**Medical Terminology**—A course in basic medical terminology. May be taken by distance learning.

**Computer Applications**—A basic computer applications course or documentation of proficiency on Computer Literacy Form to those with a degree.

**Math/Statistics**—A basic statistics course.

**General Psychology**—An introductory psychology course.

**Human Development**—A course which covers physical, social, and psychological development beginning with conception.

\* **Social Science**—One course from the following options: sociology, geography, anthropology, minority groups, diversity, economics, American Government.

\* **English**—A full sequence of English Composition which includes writing components.

**Communication**—A course in basic communication skills.

\* **Fine Arts**—An appreciation, theory and/or history course in music, art, photography, etc. or 1 year of ensemble music (Private music lessons do not apply.)

\* **Humanities**—One course from the following options: ethics, cultural perspectives, literature, philosophy, critical thinking, second language, world history, western civilization, U.S. history, American history, Canadian history.

\* **Physical Education**—A physical fitness/wellness course.

\* **Religion**—One religion course per year is required if attending a Seventh-day Adventist school.

\* **Electives**—To fulfill the total 92 semester credits required, some suggestions include service related courses, business courses, cultural and diversity courses, arts and humanities, physical activities, nutrition.

\* Prerequisites with an asterisk are not required by applicants holding a bachelors degree from an accredited school.

**2. GPA Requirements:** A minimum GPA of 3.00 in prerequisite science courses and a minimum overall GPA of 3.00 in all prerequisite courses. A grade of "C-" or better is required in each prerequisite course.

**3. Clinical Observation:** Document 80 hours (including 20 hours in an inpatient setting) supervised by a licensed physical therapist. All hours must be completed within three years prior to enrollment.

**4. Application Materials:** Applications are accepted when a minimum of 4 or more prerequisite science courses and a minimum of 64 semester credits have been completed.

**5. Personal Interview:** Applicants who meet eligibility requirements are invited for a personal interview. Phone interviews may be acceptable.

**6. Graduate Record Exam (GRE):** Submit scores from the General Test taken less than five years prior to enrollment in the program.

- 7. English Proficiency:** See Graduate Programs: English Language Requirements. In addition, applicants whose first language is not English must document successful completion of 20 semester credits of course work with instruction in the English language. An English translation of relevant course descriptions from college catalogs are required for all course work taken in another language.

## PROFESSIONAL PROGRAM

### Bachelors of Health Science (Interim Degree)

Students successfully completing the appropriate prerequisites and the first year (36 credits) of the professional program qualify for the Bachelor of Health Science Degree.

First year program courses include PTH400, 410, 415, 425, 416, 426, 420, 430, 418, 428, 445, 455, 457, 440, 458, and 460. Students must also maintain a cumulative GPA of 2.50, be able to perform skills listed in the Technical Standards of Performance and demonstrate professional behaviors as outlined in the Physical Therapy Student Handbook.

### Doctor of Physical Therapy (Entry-Level)

Upon successful completion of the professional phase of the program (116 credits) students earn the Doctor of Physical Therapy Degree. In addition to course work, students will complete a practical and written comprehensive exam, research project, research presentation, and five clinical internships. Six graduate elective credits allow students to explore other areas of interest.

## DPT DEGREE REQUIREMENTS

The following degree requirements apply to students graduating from the Entry-Level DPT program.

1. Completion of a bachelors degree (BHS or other).
2. Completion of the GRE General Test.
3. An earned minimum grade of "C" (2.00) in each DPT program course. DPT program courses include PTH400, 410, 415, 425, 416, 426, 420, 430, 418, 428, 445, 455, 457, 440, 458, 460, 610, 620, 651, 661, 540, 680, 601, 611, 652, 662, 625, 635, 627, 637, 621, 622, 632, 881, 882, 640, 650, 602, 612, 647, 645, 646, 765, 768, 799, 883, 610, 620, 651, 661, 540, 680, 726, 728, 736, 799, 748, 884, 880, and six graduate elective credits.
4. Maintain a cumulative DPT program GPA of 3.00 (2.50 for BHS).
5. Satisfactory performance of the skills listed in the Technical Standards of Performance
6. Demonstrated professional behavior
7. Satisfactory completion of the practical and written comprehensive exams
8. Satisfactory completion of a research project and research presentation
9. Satisfactory completion of five clinical internships and the associated "Clinical Performance Instrument"

## CONTINUED ENROLLMENT REQUIREMENTS

1. Progressive enrollment in the physical therapist education program requires successful completion of all Physical Therapy program course work including clinical education listed for the previous academic term.
2. A student whose cumulative GPA falls below 3.00 in any given academic term is placed on academic probation. Students who do not increase their cumulative GPA to 3.00 during the academic term of probation are normally asked to withdraw.

## POSTPROFESSIONAL PROGRAMS

- Doctor of Physical Therapy (t-DPT)
- Doctor of Science in Physical Therapy (DScPT)

These postprofessional programs are designed to provide practicing physical therapists with the opportunity to obtain post-professional studies and an advanced clinical doctoral degree in the field of their discipline without the need to terminate or significantly change their regular employment or lifestyle. Classes are either taught in a short-course format of no more than six days per session, or done by distance learning. All courses may be taken to earn academic credit or continuing education units (CEUs).

## t-DPT PROGRAM

### ADMISSION REQUIREMENTS

The following admissions requirements apply.

1. Hold current licensure as a physical therapist in U.S. or Canada.
2. Submit graduate application.
3. Submit a minimum of three satisfactory recommendations: one from a currently practicing physical therapist, one from a medical doctor, and one from another person familiar with the candidate.
4. Graduate of an accredited physical therapy school.
5. Receipt of GRE scores taken within the last 5 years.
6. For candidates holding a bachelor's degree with no advanced master's, receipt of PTET scores.

### DEGREE REQUIREMENTS

The following departmental/program requirements apply to students graduating from the postprofessional DPT program.

1. Satisfactory completion of, or competency in, the following courses: PTH500, 507 or 545, 549, 615, 630, 646, 718, 730, 740, 748, 750, 798, PTH460.
2. No grade lower than C (2.0) in any course.
3. A minimum cumulative GPA of 3.00.
4. Satisfactory performance on terminal written examinations.

## DScPT PROGRAM

This degree is designed to prepare the clinical specialist in orthopedic manual therapy and incorporates courses from the North American Institute of Orthopedic Manual Therapy.

### ADMISSION REQUIREMENTS

The following admissions requirements apply.

1. Hold current licensure as a physical therapist in U.S. or Canada.
2. Proof of employment in an orthopedic setting, at least 20 hours per week.
3. Submit graduate application.
4. Submit a minimum of three satisfactory recommendations: one from a currently practicing physical therapist, one from a medical doctor, and one from another person familiar with the candidate.
5. Graduate of an accredited physical therapy school.
6. Receipt of GRE scores taken within the last 5 years.
7. For candidates holding a bachelor's degree, with no advanced master's, receipt of PTET scores.
8. For candidates holding a master's degree, receipt of professional portfolio.

**DEGREE REQUIREMENTS**

The following degree requirements apply to students graduating from the DScPT program.

1. Satisfactory completion or competency in the courses listed below:  
PTH460, 500, 507, 536, 537, 538 or 545, 546, 547, 548, 550, 615, 630, 646, 718, 730, 740, 748, 760, 798, plus 10 approved elective credits.
2. Level III Manual Therapy Certification through NAIOMT or equivalent certification from another approved program.
3. Minimum of 2 years of part-time clinical practice (20 hours per week), or equivalent, in orthopedics, to be completed prior to the conferring of the degree.
4. No grade lower than "C" (2.00) in any course.
5. A minimum cumulative GPA of 3.00.
6. Satisfactory performance on terminal written examinations.

**Service Courses****(Credits)**

See inside front cover for symbol code.

Written permission from the Chair of the Physical Therapy program is required for non-physical therapy students to enroll in PTH/PHTH courses.

**PHTH120 (2)**  
**Introduction to Physical Therapy**

An introduction to the profession of physical therapy with an overview of duties and responsibilities physical therapists perform. Partially fulfills the clinical observation prerequisites for admission to the professional program. Students must have their own transportation for the clinical observation.

**PHTH360 (1-4)**  
**Topics in \_\_\_\_\_**

Selected topics in physical therapy. Permission of department chair required. Repeatable. Specific prerequisites may be required for some subject areas.

**PHTH417 (3)**  
**Human Anatomy**

Comprehensive study of human anatomy covering all systems of head, neck, trunk, and extremities. A solid morphological basis for a synthesis of anatomy, physiology, and clinical sciences provided. Dissection and identification of structures in the cadaver, and the study of charts, models, and prosected materials. Prerequisites: BIOL111, 112 or BIOL165, 166 or equivalent. See instructor for additional requirements. Corequisite: PTH427.

**PHTH427 \$ (1)**  
**Human Anatomy Laboratory**

Study of the prosected extremity, head and neck anatomy, and dissection of the abdominal and thoracic organ systems. Prerequisites: same as for PTH417. Corequisite: PTH417.

**PHTH590 (1-4)**  
**Topics in \_\_\_\_\_**

Selected topics in physical therapy. Permission of department chair required. Repeatable. Specific prerequisites may be required for some subject areas.

**PHTH648 (1-4)**  
**Workshop****PHTH690 (1-4)****Independent Study**

Individualized study and/or research in a specialized area under the guidance of an instructor. Permission from the department chair required prior to registration. Repeatable to 8 credits.

**DPT PROGRAM**

Berrien Springs, MI

**PTH400 (4)**  
**Anatomy**

A comprehensive study of human anatomy with emphasis on the nervous, skeletal, muscle, and circulatory systems. Introduction to basic embryology and its relation to anatomy and the clinical sciences concludes the course. Provides a solid morphological basis for a synthesis of anatomy, physiology, and the physical therapy clinical sciences. Corequisite: PTH410.

**PTH410 (3)**  
**Anatomy Laboratory**

Dissection and identification of structures in the cadaver supplemented with the study of charts, models, prosected materials and radiographs are used to identify anatomical landmarks and configurations. Corequisite: PTH400.

**PTH415 (4)**  
**PT Assessment Skills**

Introduction to assessment principles and examination skills utilized in all areas of physical therapy. The *Guide to Physical Therapy Practice* is referenced for the basic skills required in the assessment, intervention and documentation guidelines. Corequisite: PTH425.

**PTH416 (3)**  
**Pathokinesiology**

The study of human movement including an introduction to the basic concepts of biomechanics with an emphasis on human joint/muscle structures and function, advancing to analysis of body mechanics, normal gait analysis, and pathological movement analysis. Joint abnormalities will be identified using radiographs, related to the resultant movement dysfunction. Prerequisites: PTH400 and 410. Corequisite: PTH426.

**PTH418 (2)**  
**General Medicine**

Clinical techniques applied to the examination, evaluation, treatment, and discharge planning of patients in general medical and acute-care. Emphasis on physical therapy intervention with relevant factors, management of pain and physical complications during medical treatment, and examination and treatment of special populations including wound and burn care. Corequisite: PTH428.

**PTH420 (3)**  
**Therapeutic Interventions**

Basic principles, physiologic effects, indications and contraindications, application and usage of equipment, and intervention rationale for hydrotherapy, thermal agents, wound care, massage, electrotherapy and mechanotherapy (traction) and other therapeutic interventions. Corequisite: PTH430.

**PTH425 (2)**  
**PT Assessment Skills Laboratory**

Basic examination skills including surface palpation of specific underlying muscle and bone structures, joint motion (goniometry), manual procedures for testing muscle strength sensation, vital

signs, limb girth and volumetric measurement will be practiced. Clinical application in basic physical therapy care procedures will be introduced. Corequisite: PTH415.

**PTH426** ♦ (2)  
***Pathokinesiology Laboratory***

Biomechanical, and observational analysis, of normal and abnormal human movement. Integration of basic examination skills with gait and movement analysis. Prerequisites: PTH400 and 410. Coerequisite: PTH416.

**PTH428** ♦ (1)  
***General Medicine Laboratory***

Practice in assessment modified for the acute-care environment. Applications include home-and work-place evaluation for architectural barriers, functional evaluation tools, casting, and modification of treatment for acute care including goal setting and professional note writing. Corequisite: PTH418.

**PTH430** ♦ (2)  
***Therapeutic Interventions Laboratory***

Supervised practicum includes patient positioning and application of the therapy to obtain desired physiological response. Techniques of hydrotherapy, thermal agents, wound care, and massage, as well as specific electrotherapy and mechanotherapy treatments and assessment of physiological responses to those treatments. Corequisite: PTH420.

**PTH440** ♦ (3)  
***Pathophysiology I***

Sequence studying disease processes affecting major body systems and the resulting anatomical and pathophysiological changes. Clinical presentations and pharmacological treatment of patients with those disease processes are presented, as well as diagnostic tests and laboratory values used to identify pathological conditions. Prerequisites: PTH400 and 410.

**PTH445** ♦ (2)  
***Neuroscience***

Basic anatomy and functions of the central and peripheral nervous systems and their related structures. Pathways of the central and peripheral nervous system are examined along with a detailed study of each of the 12 pairs of cranial nerves. Prerequisites: PTH400 and 410. Corequisite: PTH455.

**PTH455** ♦ (1)  
***Neuroscience Laboratory***

Study of the prosected central and peripheral nervous tissues, models, and charts. Imaging will be used to compare normal to abnormal CNS presentation. Prerequisites: PTH400 and 410. Corequisite: PTH445.

**PTH457** ♦ (2)  
***Orthopedic Medicine***

Medical lectures covering selected topics in orthopedics, including common orthopedic diseases and the use of diagnostic testing and imaging in the orthopedic field.

**PTH458** ♦ (1)  
***Neurologic Medicine***

An introduction to the major neurological conditions seen in clinical practice, relating the pathology of the various motor control components to the movement disorders associated with them. Recognition and examination of normal and impaired movement in

adults is begun, focusing on task analysis of common movement patterns.

**PTH460** ♦ (2)  
***Topics in Comparative Religion***

This course surveys the major religious traditions of the world. Study includes an overview of origins; major philosophical and theological underpinnings; typical aspects of worship and ethics; and major social, cultural, and political influences. Study is done from a consciously Christian framework.

**PTH495** (1-4)  
***Independent Study/Readings/Research/Projects***

Permission of department chair required prior to registration for all independent work. Repeatable to 8 credits.

**PTH540** (2)  
***Pathophysiology II***

Sequence studying disease processes affecting major body systems and the resulting anatomical and pathophysiological changes. Clinical presentations and pharmacological treatment of patients with those disease processes considered, as well as diagnostic tests and laboratory values used to identify pathological conditions. Prerequisites: PTH400 and 410.

**PTH589** (1-2)  
***Professional Seminar***

**PTH590** (1-4)  
***Topics in \_\_\_\_\_***

Selected topics in physical therapy. Permission of department chair required. Repeatable. Specific prerequisites may be required for some subject areas.

**PTH601** (2)  
***Orthopedics I***

Presentation of fundamental physical therapy knowledge in the assessment and intervention of a patient with both acute and chronic conditions of the extremities. Screening of the cervical and lumbar spine prior to tests is covered, progressing to complete assessment and treatment of extremity joint pathologies. Diagnostic tests and results pertinent to the orthopedic patient are related to a physical therapy differential diagnosis. Corequisite: PTH611.

**PTH602** (2)  
***Orthopedics II***

A continuation of the presentation of information regarding orthopedic pathology of the spine with emphasis on treatment techniques for the different pathologies from a physician and physical therapist's perspective. A decision making model focusing on a differential diagnosis is incorporated throughout the course. Corequisite: PTH612.

**PTH610** (2)  
***Therapeutic Exercise***

Examines the systemic responses to exercise as related to both an acute nature and in response to training. Specific pathological conditions are discussed in relation to exercise testing and prescription, and a clinical decision making process is presented for working with additional pathological conditions. Corequisite: PTH620.

**PTH611** (2)  
***Orthopedics I Laboratory***

Clinical application and practice in the special techniques to

assess and treat acute and chronic orthopedic pathologies of the extremities and spine. Corequisite: PTH601.

**PTH612 (2)**  
***Orthopedics II Laboratory***

Designed for practice of the special techniques required in the assessment of intervention of acute and chronic orthopedic pathologies of the cervical, thoracic, and lumbar spine. Corequisite: PTH602.

**PTH620 (1)**  
***Therapeutic Exercise Laboratory***

Practical demonstration and experience with responses to exercise, testing procedures, and exercise prescription, focusing on activities appropriate for clinical situations. Tests and interventions noted in the *Physical Therapy Guide to Practice* are highlighted. Corequisite: PTH610.

**PTH621 (2)**  
***Scholarly Inquiry and Dissemination***

Introduction to the principles and practice of research, including designs, ethics, hypothesis testing and critical evaluation of clinical literature. Preparation and development of a graduate research proposal is interwoven throughout this course.

**PTH622 (1)**  
***Research Statistics***

Fundamental procedures in collecting, summarizing, presenting, analyzing, and interpreting statistical data. Statistical tests applied to medical specialties. Corequisite: PTH632.

**PTH625 (1)**  
***Cardiopulmonary***

Lectures covering selected topics in cardiopulmonary medicine, focusing on clinical presentation, diagnostic tests, and medical and physical therapy interventions. Corequisite: PTH635.

**PTH627 (1)**  
***Orthotics and Prosthetics***

Prosthetic management of upper- and lower-limb amputee, orthotic management of patients with disabilities requiring orthotic intervention, and application/management of orthotic-traction devices. Corequisite: PTH637.

**PTH632 (1)**  
***Research Statistics Laboratory***

Practice in the computation of statistical data using appropriate formulas. Practical applications of techniques in research and statistical computations including probability, normal distribution, Chi Square, correlations, and linear regressions. Corequisite: PTH622.

**PTH635 (1)**  
***Cardiopulmonary Laboratory***

Emphasis on physical therapy assessment and intervention with cardiac and pulmonary patients. Practice of relevant techniques, such as stress testing, percussion, pulmonary function tests and breathing techniques, as well as other techniques identified in the *Physical Therapy Guide to Practice*. Corequisite: PTH625.

**PTH637 (1)**  
***Orthotics and Prosthetics Laboratory***

Practice of the physical therapy techniques required in the application of orthotic and prosthetic devices. Special attention given to gait and function. Selected topics such as wheelchair modifications, miscellaneous ortho-rehab apparatus, and other assistive/adaptive devices included. Corequisite: PTH627.

**PTH640 (2)**  
***Pediatrics***

An overview of embryologic development, followed by normal infant/child development to 5 years of age with an emphasis on motor development. Identification of assessment techniques for infants and children with normal and abnormal development. Description of various pediatric pathologies encountered in physical therapy with appropriate corresponding assessment and treatment approaches. Corequisite: PTH650.

**PTH645 (4)**  
***Physical Therapy Administration and Leadership***

A study of the organizational structures, operations, and financing of healthcare delivery institutions and an examination of the organization and interrelationship of their professional and support elements. Application of current health care management strategies and theory are related to the acute-care facility and independent practice.

**PTH646 (2-3)**  
***Spirituality in Healthcare***

A discussion of spiritual values from a Christian perspective, how faith and spirituality facilitate the healing process, and how these can be incorporated into patient care. Attention will be given to discerning and addressing the spiritual needs of patients/clients, family members, and ancillary medical staff in a professional environment.

**PTH647 (2)**  
***Differential Diagnosis***

Analysis of the decision making process, with special focus on clinical guidelines, *Physical Therapy Guide to Practice*, and differential diagnosis. Differential diagnosis is addressed through comparison of systemic signs and symptoms, as well as appropriate diagnostic tests which may indicate involvement of a problem outside of the scope of PT practice.

**PTH650 (2)**  
***Pediatrics Laboratory***

Practice of physical therapy assessment of the infant/child that address different developmental domains. Practice in the special techniques required in assessment and treatment of pediatric patients diagnosed with selected pathologies. Introduces current treatment approaches, such as Neurodevelopmental Treatment (NDT), with their effects on treatment goals. Corequisite: PTH640.

**PTH651 (2)**  
***Neurology I***

Review of basic neurophysiological mechanisms specific to nervous system dysfunction, related to clinical concepts in treatment of conditions affecting the nervous system, such as spinal cord injury, head injury, stroke, and selected peripheral pathologies. Emphasis on comparing and contrasting facilitation techniques. Corequisite: PTH661.

**PTH652 (2)**  
***Neurology II***

Continuation of PTH651 Neurology I, focusing on assessment and intervention with selected neurologic conditions. Common treatment techniques are compared with rationale for use of each. Prerequisite: PTH651. Corequisite: PTH662.

**PTH661 (2)**  
***Neurology I Laboratory***

Clinical application, rehabilitation practice, and techniques applied to nervous system dysfunction. Intervention techniques for conditions

affecting the nervous system, such as spinal cord injury, head injury, stroke, and selected peripheral pathologies. Corequisite: PTH651.

**PTH662 (2)**  
***Neurology II Laboratory***

Clinical application, rehabilitation practice, and techniques applied to basic physiological and neurophysiological mechanisms specific to nervous system dysfunction. Focus on techniques appropriate for use with neurologic patients and evaluation of patient response to treatment. Prerequisite: PTH661. Corequisite: PTH652.

**PTH680 (2)**  
***Clinical Practicum***

Practice of the knowledge and skills developed in the classroom and laboratory in a patient-care setting. This practicum consists of 4 weeks full-time physical therapy experience in clinical facilities affiliated with the university. Repeatable.

**PTH690 (1-4)**  
***Independent Study***

Individualized study and/or research in a specialized area under the guidance of an instructor. Permission from the department chair required prior to registration. Repeatable to 8 credits.

**PTH710 (2)**  
***Advanced Concepts in Neurology***

Advanced education in theory and clinical practice in the treatment of neurological dysfunction. Theories and clinical areas covered may include Neuro Developmental Technique (NDT), Motor Relearning Program (MRP), and other selected approaches. Focuses primarily on helping the student achieve advanced skills in transition from theory to clinical practice. Corequisite: PTH720.

**PTH715 (2)**  
***Advanced Concepts in Pediatrics***

Advanced assessment and intervention strategies for the pediatric patient. Corequisite: PTH725.

**PTH717 (2)**  
***Advanced Concepts in Aquatic & Alternative Medicine***

Advanced aquatic therapy program design and intervention and an overview of complementary therapies focusing on physical therapy evaluation and intervention. Corequisite: PTH727.

**PTH720 (1)**  
***Advanced Concepts in Neurology Laboratory***

Clinical application, rehabilitation practice, and techniques applied to advanced clinical practice in the treatment of neurological dysfunction. Theories and clinical areas covered may include Neuro Developmental Technique (NDT), Motor Relearning Program (MRP), and other selected approaches. Corequisite: PTH710.

**PTH725 (1)**  
***Advanced Concepts in Pediatrics Laboratory***

Practice and application of skills required in working with orthopedic and neurologically involved pediatric patients as well as pediatric patients that show developmental risk factors and/or delays. Corequisite: PTH715.

**PTH726 (2)**  
***Geriatrics***

Study of the unique characteristics of the geriatric patient, especially the physiological, psychological and social aspects, related to special needs in the physical therapy assessment, plan of care, and intervention.

**PTH727 (1)**  
***Advanced Concepts in Aquatic & Alternative Medicine Laboratory***

Designed for the clinical application and practice of special techniques in complementary aquatic and therapies. Corequisite: PTH717.

**PTH728 (1)**  
***Christian Finance Seminar***

This course emphasizes the principles of Christian stewardship in everyday life. It addresses stewardship not only as it relates to finances but also to other human resources such as time, and talent. It will also include the elements of family budgeting and investing.

**PTH735 (2)**  
***Advanced Concepts in Industrial Medicine***

A broad overview of occupational medicine with emphasis on assessment and intervention procedures for industrial rehabilitation. An instructional block included on the prevention of work-related injuries with an evaluation of the workplace and the development of appropriate job descriptions. Corequisite: PTH745.

**PTH736 (3)**  
***Psychosocial Issues in Healthcare***

An introduction to psychosocial responses to illness and disability, especially the interpersonal relationships between the therapist, the family and the patient. Common psychiatric disorders are discussed along with their clinical diagnosis, treatment regimes, projected outcomes and methods for handling these responses in clinical situations.

**PTH737 (2)**  
***Advanced Concepts in Sports Medicine and Orthopedics***

Advanced understanding of orthopedic pathology of the spine and extremity joints, with attention to athletic injuries of these areas. Measures covered include the pre-participation physical exam, designing conditioning programs, taping, equipment fitting, advanced first aid for evaluating and treating field injuries, and other selected orthopedic pathology. Corequisite: PTH747.

**PTH739 (2)**  
***Advanced Concepts in Women's Health***

An advanced understanding of issues relating to the physical therapy assessment and intervention of women's health concerns. Clinical areas covered include pregnancy, menopause, post-mastectomy and hysterectomy rehabilitation. Corequisite: PTH749.

**PTH745 (1)**  
***Advanced Concepts in Industrial Medicine Laboratory***

Observation, demonstration, and practice in the assessment, intervention, and patient instruction procedures relating to occupational medicine. Corequisite: PTH735.

**PTH747 (1)**  
***Advanced Concepts in Sports Medicine and Orthopedics Laboratory***

Practice in advanced examination and intervention procedures for orthopedic pathology with special emphasis on athletic injuries. Practice of different exercise regimens and taping techniques. Corequisite: PTH737.

**PTH748 (1-2)**  
***Educational Techniques for Health Care Professionals***

Examines and applies educational theory to skills utilized by the physical therapist in the classroom, community, and clinical facility. Topics include the educational role of the physical therapist, the

taxonomies of learning, learning styles, multiple intelligence, and educational technology.

**PTH749** (1)  
***Advanced Concepts in Women's Health Laboratory***  
 Advanced practice and application of clinical skills required in the physical therapy assessment and intervention of women's health. Corequisite: PTH739.

**PTH765** (1-2)  
***Ethical & Legal Issues in Healthcare***  
 Contemporary ethical issues are explored, including the relationships among peers, superiors, subordinates, institutions, clients, and patients. Illustrations include actual cases related to Christian biblical principles.

**PTH768** (1)  
***Professional Compendium***  
 Summarization of previous or added learning experiences relative to contemporary issues in physical therapy. An overview of the new graduate's role and responsibility to his/her patients and their families, employer, and community in the expanding physical therapy profession.

**PTH788** (0)  
***Research Project Continuation***  
 Non-package, reduced tuition rate applies.

**PTH799** (1-3)  
***Research Project (topic)***  
 Provides students with guidelines and supervision for data collection, analysis, thesis preparation and oral presentation.

**PTH880** (1)  
***PT Seminar***  
 Preparation of a personal portfolio, assessment of the clinical experiences and preparation for professional licensure.

**PTH881, 882, 883, 884** (4, 4, 5, 5)  
***Clinical Affiliation I, II, III, IV***  
 Advanced full-time clinical experience (I & II=8 weeks; III & IV=10 weeks each) in a variety of professional practice settings. One of the affiliations must be in outpatient orthopedics, inpatient, and a neurology setting. Thirty-six to forty hours per week. May be repeated.

## MPT PROGRAM

Dayton, Ohio

**PHTH606** (1)  
***Professional Seminar III: Business Management***  
 Utilizes small group problem-based learning to teach principles of business, administration and marketing necessary to manage a physical therapy clinic or practice. Topics include management styles, policymaking, team building, consulting, financial issues, marketing strategies and continuous quality improvement.

**PHTH608** (1)  
***Professional Seminar IV: Professional Development***  
 Seminar course designed to help each student formulate strategies for professional assessment and development post-graduation. Topics include professional values and responsibilities, expanding your professional options, continuing education, specialty certification and advanced degrees. Each student participates in a comprehensive program evaluation and does a formal presentation of the graduate project.

**PHTH651** (3)  
***Clinical Rotation I: General Medicine***  
 A 6-week clinical rotation in general medicine to provide full-time clinical exposure, allowing students to integrate current knowledge and training with supervised patient care. Emphasis on continued development of clinical reasoning along with identification and utilization of appropriate clinical resources.

**PHTH652** (3.5)  
***Clinical Rotation II: Neuro Rehab***  
 A 7-week clinical rotation in rehab provides full-time clinical exposure, allowing students to integrate current knowledge and training with supervised patient care. Emphasis on the continued development of clinical skills and reasoning along with the development of interpersonal skills as a member of the health care team.

**PHTH653** (4)  
***Clinical Rotation III: Orthopedics/Sports Medicine***  
 An 8-week clinical rotation in orthopedics/sports medicine providing full-time clinical exposure and allowing students to integrate current knowledge and training with supervised patient care. Emphasis on continued development of clinical skills and reasoning with increasing responsibility for independent decision-making and clinical interaction.

**PHTH654** (5)  
***Clinical Rotation IV***  
 The final 10-week clinical rotation allows students to continue developing clinical skills and reasoning in preparation for entry-level practice. Increasing independence in clinical practice is expected with increased responsibilities in areas of program development and implementation, administration, and clinical management including staff supervision.

**PHTH662** (3)  
***Clinical Pathology: Neurology I***  
 Small group, problem-based learning course utilizing various neurological clinical cases to facilitate the integration of previous knowledge with new learning. Basic and clinical science principles are used to formulate appropriate examination and intervention strategies for the patient with neurological deficits. Corequisites: PHTH672, 682, and 692.

**PHTH663** (1.5)  
***Clinical Pathology: Neurology II***  
 Small group, problem-based learning course utilizing various pediatric clinical cases to facilitate the integration of previous knowledge with new learning. Basic and clinical science principles are used to formulate appropriate assessment and intervention strategies for pediatric patients. Corequisites: PHTH673, 683, and 693.

**PHTH664** (2.5)  
***Clinical Pathology: Orthopedics I***  
 Small group, problem-based learning course utilizing various orthopedic clinical cases to facilitate the integration of previous knowledge with new learning. Clinical reasoning and decision-making skills are developed as they relate to physical therapy examination and intervention strategies. Corequisites: PHTH674 and 684.

**PHTH665** (1.5)  
***Clinical Pathology: Orthopedics II***  
 Small group, problem-based learning course utilizing patient case scenarios dealing with differential diagnosis and management of complex orthopedic pathologies. Corequisites: PHTH675 and 685.



- PHTH672** (2)  
*Clinical Skills Laboratory: Neurology I*  
Lab course designed to develop clinical skill and reasoning as it relates to physical therapy care and management of the patient with neurological pathology. Students learn physical examination tests and measures along with therapeutic interventions appropriate for this population, including electrotherapy modalities. Corequisites: PHTH662, 682, and 692.
- PHTH673** (1)  
*Clinical Skills Laboratory: Neurology II*  
Lab course designed to facilitate skill acquisition along with clinical reasoning and decision-making as it relates to the physical therapy care and management of the pediatric patient. Students learn physical examination tests and measures along with therapeutic interventions appropriate for this population. Special consideration for patient/family needs and education. Corequisites: PHTH663, 683, and 693.
- PHTH674** (1.5)  
*Clinical Skills Laboratory: Orthopedics I*  
Lab course designed to facilitate skill acquisition along with clinical reasoning and decision-making as it relates to the physical therapy care and management of the patient with orthopedic pathology. Students learn physical examination tests and measures along with therapeutic interventions including electrotherapy modalities appropriate for this population. Corequisites: PHTH664 and 684.
- PHTH675** (1.5)  
*Clinical Skills Laboratory: Orthopedics II*  
Lab course designed to facilitate skill acquisition along with clinical reasoning and decision-making as it relates to the physical therapy care and management of orthopedic patients with complex musculoskeletal pathology and dysfunction. Students learn physical examination tests and measures along with therapeutic interventions appropriate for this population. Special consideration for patient/family needs and education is discussed. Corequisites: PHTH665 and 685.
- PHTH682** (2)  
*Clinical Issues Seminar: Neurology I*  
Focused-topic study related to physical therapy management of the patient with neurological dysfunction. Topics include: rehabilitation team interaction, psychosocial and socioeconomic issues, motor learning, motor control and neuroplasticity. Corequisites: PHTH662, 672, and 692.
- PHTH683** (1)  
*Clinical Issues Seminar: Neurology II*  
Focused-topic study related to physical therapy management of the pediatric patient. Topics include treatment within a variety of settings including school-based, hospital-based, private practice, and home care; psychosocial issues relating to the patient and family; funding; documentation; and pharmacological management. Corequisites: PHTH663, 683, and 693.
- PHTH684** (2)  
*Clinical Issues Seminar: Orthopedics I*  
Focused-topic study related to physical therapy management of the orthopedic patient. Topics include DME, instrumented ligament testing, differential diagnosis, physical principles and biomechanics applied to therapeutic exercise and function, medical diagnostics, surgery and postoperative care, and gait analysis. Corequisites: PHTH664 and 674.
- PHTH685** (2)  
*Clinical Issues Seminar: Orthopedics II*  
Focused-topic study related to physical therapy management of the complex orthopedic patient with select axial musculoskeletal pathologies. Topics include chronic pain management, medical diagnostics, surgical intervention for the spine, differential diagnosis, and age-related pathologies. Corequisites: PHTH665 and 675.
- PHTH687** (1.5)  
*Advanced Therapy Workshop*  
Concentrated instruction in advanced physical therapy patient care. Topics include cardiopulmonary rehabilitation, women's health, advanced manual therapy strategies, advanced electrotherapeutics and advanced handling techniques.
- PHTH688** (2.5)  
*Advanced Clinical Seminar*  
Seminar/discussion on issues related to physical therapy care and the profession. Topics include preventive and wellness programs, physical therapy consultation, burn and wound care management, industrial rehabilitation and sports medicine.
- PHTH692** (1)  
*Research II*  
A continuation of PHTH691; focuses on student identification and selection of a research proposal topic. Advanced statistical analysis discussed; also informed consent, writing techniques, funding acquisition, and presentation of findings. Corequisites: PHTH662, 672, 682.
- PHTH693** (1)  
*Research III*  
Research proposal review, revision, and presentation. Students work with the research coordinator and individual faculty research advisors in preparation for completion of the research proposal document.

## TRANSITIONAL DPT PROGRAM

- PTH460** (2)  
*Topics in Comparative Religion*  
This course surveys the major religious traditions of the world. Study includes an overview of origins; major philosophical and theological underpinnings; typical aspects of worship and ethics; and major social, cultural, and political influences. Study is done from a consciously Christian framework.
- PTH500** (2)  
*Doctoral Colloquium*  
A DScPT degree orientation will include portfolio development and assessment, introduction to NAIOMT, development of the degree contract, usage of James White Library system, and introduction to the *Guide to Physical Therapy Practice*.
- PTH507** (3)  
*Applied Clinical Anatomy & Kinesiology*  
Lecture/lab course studying regional anatomy and biomechanics as they relate to normal movement and the potential development of movement dysfunctions. Correlations between pathomechanics, clinical presentation of pathology and decision making for therapeutic interventions will be drawn.
- PTH545** (3)  
*Advanced Clinical Physiology*  
The review of human physiological function of the major body systems with clinical application to musculoskeletal, cardiovascu-

lar and pulmonary conditions. Detailed information on exercise physiology will be discussed along with clinical applications among patients with compromised health.

**PTH549 (3)**

***Principles of Contemporary Leadership***

Theory and application of complexity sciences to organizational management; exploration of key leadership roles and changing paradigms; presentation of methods to maximize personal and professional life.

**PTH615 (2)**

***Clinical Pharmacology***

Develops a non-prescriptive knowledge of specific medications including indications, contraindications, precautions, adverse reactions, and dosage, especially as related to physiological effects of physical therapy interventions.

**PTH630 (2)**

***Clinical Research***

Introduces the student to basic concepts of biostatistics and research design and the formulation of evidence based practice theories.

**PTH646 (2-3)**

***Spirituality in Healthcare***

A discussion of spiritual values from a Christian perspective, how faith and spirituality facilitate the healing process, and how these can be incorporated into patient care. Attention will be given to discerning and addressing the spiritual needs of patients/clients, family members, and ancillary medical staff in a professional environment.

**PTH718 (3)**

***Clinical Screening & Differential Diagnosis***

Knowledge and clinical skills designed for screening patients for medical conditions. Differential diagnosis is addressed through comparison of systematic signs and symptoms. Appropriate diagnostic tests which may indicate involvement of a problem outside the scope of PT practice are addressed. Enhances professional communication with other healthcare practitioners included in the referral process.

**PTH730 (2)**

***Medical Diagnostics***

Addresses imaging, body chemistry values and data derived from musculoskeletal, neurologic, vascular, cardiac and pulmonary testing with the purpose of understanding the disease process. Application of knowledge will determine differential diagnoses.

**PTH740 (3)**

***Advanced Topics in Clinical Research***

This course continues to cover the topic introduced in PTH630 in a more in depth fashion. The student will learn how to set up a research study as well as review the literature and analyze the validity of the information presented. An introduction to setting up outcome studies will also be covered.

**PTH748 (1-2)**

***Educational Techniques for Health Care Professionals***

Examines and applies educational theory to skills utilized by the physical therapist in the classroom, community, and clinical facility. Topics include the educational role of the physical therapist, the taxonomies of learning, learning styles, multiple intelligence, and educational technology.

**PTH750 (2)**

***Professional Communication & Consulting***

An introduction to the integration of the physical therapist as consultant. Discussion will include applying physical therapy consultation services to individuals, business, schools, government agencies and/or other organizations.

**PTH760 (2)**

***Applications in Clinical Research***

Information presented on how to develop and present a publishable quality case study. It also includes the actual practice of doing an outcomes study in the clinical environment.

**PTH798 (1-10)**

***Capstone Experience***

Serves as an essential outcome component to augment the professional development and new learning that occurs in didactic course work of the postprofessional doctoral degree and demonstrates the ability of the DPT/DScPT to make significant contributions to the profession and/or serve as a change agent in the field of physical therapy.

**DScPT PROGRAM**

**PTH460 (2)**

***Topics in Comparative Religion***

This course surveys the major religious traditions of the world. Study includes an overview of origins; major philosophical and theological underpinnings; typical aspects of worship and ethics; and major social, cultural, and political influences. Study is done from a consciously Christian framework.

**PTH500 (2)**

***Doctoral Colloquium***

A DScPT degree orientation which will include portfolio assessment, introduction to NAIOMT, development of the degree contract, introduction to The Guide to Physical Therapy Practice and orientation to library resources.

**PTH507 (3)**

***Applied Clinical Anatomy & Kinesiology***

Lecture/lab course studying regional anatomy and biomechanics as they relate to normal movement and the potential development of movement dysfunctions. Correlations between pathomechanics, clinical presentation of pathology and decision making for therapeutic interventions will be drawn.

**PTH536 (3)**

***NAIOMT Level I: Introduction to Fundamentals of Orthopedic Manual Therapy & Differential Diagnosis***

Appropriate skills in basic and objective selective tissue examination necessary for generating a provisional differential diagnosis of spinal dysfunction. Signs, symptoms, pathology, and management of common spinal pathologies are reviewed. Selective tissue tensioning techniques for the peripheral joints are introduced. Cyriax's principles are presented.

**PTH537 (3)**

***NAIOMT Level II: Intermediate Upper Quadrant***

A comprehensive biomechanical and anatomical review of the upper thoracic, upper and lower cervical spine, shoulder, elbow, wrist, and hand. Specific biomechanical assessment of each area is taught along with appropriate and effective treatment techniques for common injuries and mechanical dysfunctions.

- PTH538** (3)  
**NAIOMT Level II: Intermediate Lower Quadrant**  
 A comprehensive biomechanical and anatomical review of the lower thoracic and lumbar spines, the hip, knee, ankle, and foot. Specific biomechanical assessment of each area is taught along with appropriate and effective treatment techniques for common injuries and dysfunctions.
- PTH545** (3)  
**Advanced Clinical Physiology**  
 The review of human physiological function of the major body systems with clinical application to musculoskeletal, cardiovascular and pulmonary conditions. Detailed information on exercise physiology will be discussed along with clinical applications among patients with compromised health.
- PTH546** (3)  
**NAIOMT Level III: Advanced Upper Quadrant**  
 Builds on the techniques learned in Level II and helps the student understand the kinetic chain interrelationships of the upper quadrant. Integrates information generated in the assessment to understand how remote dysfunctions can be casual or contributory. Advanced techniques are demonstrated along with new material on temporo-mandibular-joint material and peripheral manipulation skills. Prerequisite: PTH537.
- PTH547** (3)  
**NAIOMT Level III: Advanced Lower Quadrant**  
 Builds on the techniques learned in Level II and helps the student understand the kinetic chain interrelationships in the lower quadrant. Presents advanced biomechanical tests and treatment and includes the sacroiliac and pubic joints. Discusses the integration of examination and treatment techniques. Prerequisite: PTH538.
- PTH548** (3)  
**NAIOMT Level IV: High Velocity Manipulation**  
 Instructs the student on the indications and contraindications, as well as the safe and effective application of spinal, pelvic, and costal manipulation techniques. Prerequisites: PTH546 and 547.
- PTH549** (3)  
**Principles of Contemporary Leadership**  
 Theory and application of complexity sciences to organizational management; exploration of key leadership roles and changing paradigms; presentation of methods to maximize personal and professional life.
- PTH550** (4)  
**NAIOMT Supervised Clinical Practice**  
 Using a 3-to-1 model, students will be required to do a minimum of 60 supervised clinical hours applying hands-on techniques with patients under the supervision of a certified NAIOMT clinical instructor, FAAOMPT, or other approved instructors. These hours can be done all at one time or split up into two 30-hour blocks.
- PTH556** (2)  
**NAIOMT: Pelvic Girdle**  
 Lecture/lab course focused on detailed examination and treatment of the pelvic girdle. Emphasis is placed on a biomechanical model of testing and treating clinical dysfunction and pain.
- PTH557** (2)  
**NAIOMT: Thoracic Spine**  
 Lecture/lab course studying the thoracic spine as a source of spinal dysfunction. Emphasis is placed on a biomechanical model for detailed examination and treatment of the thoracic spine and costovertebral dysfunction.
- PTH558** (2)  
**NAIOMT: Post Motor Vehicle Accident Cervical Dysfunction**  
 Lecture/lab course focused on examination and treatment of the patient with cervical trauma following an MVA. Emphasis is placed on developing a safe, effective and progressive examination and treatment program based on anatomical, histological and biomechanical changes resulting from the MVA trauma.
- PTH615** (2)  
**Clinical Pharmacology**  
 Develops a non-prescriptive knowledge of specific medications including indications, contraindications, precautions, adverse reactions, and dosage, especially as related to the physiological effects of physical therapy interventions.
- PTH618** (2)  
**Sports Physical Therapy**  
 Understanding physical therapy management of athletes: topics unique to sports medicine include preparticipation screening exams, field management of athletic injuries, designing comprehensive rehabilitation and conditioning programs, taping techniques, equipment fitting, biomechanics of the upper extremity and lower extremity in sports, specifically related to evaluation and treatment of common athletic injuries.
- PTH631** (1.5)  
**Soft Tissue Management: Level I**  
 Introduces the theory and clinical application of indirect techniques, with emphasis on practical use of strain-counterstrain (SCS) in combination with neuromotor reeducation techniques. SCS includes spinal, rib, pelvic, shoulder, and knee points, and home program material for patients. Neuromotor re-education concepts and options will be experienced for each region.
- PTH632** (1.5)  
**Soft Tissue Management: Level II**  
 Builds on concepts and techniques introduced in Level I. Adds SCS for distal extremity joints, full body motion analysis and SCS screen from which a plan for point release and neuromotor re-education is developed. More neuromotor reeducation exercises and options, and identifying and correcting vector(s) of traumatic injury. Prerequisite: PTH631.
- PTH646** (2-3)  
**Spirituality in Healthcare**  
 Discussion of spiritual values from a Christian perspective, how faith and spirituality facilitate the healing process, and how these can be incorporated into patient care. Attention will be given to discerning and addressing the spiritual needs of patients/clients, family members, and ancillary medical staff in a professional environment.
- PTH697** (2)  
**Independent Learning Contract**  
 The student, working with their advisor and following degree/course guidelines, will develop an independent 40-hour learning contract with a qualified clinical specialist to facilitate intensive focused clinical training in a field of study of their choosing.
- PTH718** (3)  
**Clinical Screening & Differential Diagnosis**  
 Knowledge and clinical skills designed for screening patients for

medical conditions. Differential diagnosis is addressed through comparison of systematic signs and symptoms. Appropriate diagnostic tests which may indicate involvement of a problem outside the scope of physical therapy practice are addressed. Enhances professional communication with other healthcare practitioners included in the referral process.

**PTH730 (3)*****Medical Diagnostics***

Addresses imaging, body chemistry values and data derived from musculoskeletal, neurologic, vascular, cardiac and pulmonary testing with the purpose of understanding the disease process. Application of knowledge will determine differential diagnoses.

**PTH740 (3)*****Advanced Topic in Clinical Research***

This course continues to cover the topic introduced in PTH630 in a more in-depth fashion. The student will learn how to set up a research study as well as review the literature and analyze the validity of the information presented. An introduction to setting up outcome studies will also be covered.

**PTH748 (1-2)*****Educational Techniques for Health Care Professionals***

Examines and applies educational theory to skills utilized by the physical therapist in the classroom, community, and clinical facility. Topics include the educational role of the physical therapist, the taxonomies of learning, learning styles, multiple intelligence, and educational technology.

**PTH750 (2)*****Professional Communication & Consulting***

An introduction to the integration of the physical therapist as consultant. Discussion will include applying physical therapy consultation services to individuals, business, schools, government agencies and/or other organizations.

**PTH760 (2)*****Applications in Clinical Research***

Information presented on how to develop and present a publishable quality case study. It also includes the actual practice of doing an outcomes study in the clinical environment. Prerequisites: PTH630, 740.

**PTH798 (1-10)*****Capstone Experience (Topic)***

Serves as an essential outcome component to augment the professional development and new learning that occurs in didactic course work of the postprofessional doctoral degree and demonstrates the ability of the DPT/DScPT to make significant contributions to the profession and/or serve as a change agent in the field of physical therapy.

# PHYSICS

Haughey Hall, Room 211  
(269) 471-3430  
physics@andrews.edu  
http://physics.andrews.edu

**Faculty**

Margarita C. K. Mattingly, *Chair*  
Gary W. Burdick  
Mickey D. Kutzner  
S. Clark Rowland

**Emeritus**

Robert E. Kingman  
Bruce E. Lee

Academic Programs	Credits
BS: Physics	40
BS: Biophysics	40
Minor in Physics	20

Physics describes the world in terms of matter and energy and relates the many facets of its phenomena in terms of fundamental law. Its scope includes systems that range in size from the sub-nuclear to the entire cosmos.

A major in physics supports and enhances professional careers in engineering, the life sciences, the physical sciences, and similar areas.

A major in biophysics prepares the graduate for advanced studies in medical and bioengineering fields. Both physics programs prepare the graduate for a career in secondary teaching.

## Undergraduate Programs

**BS: Physics—40**

**Major Requirements:** PHYS241, 242, 271, 272, 277, 377, 411, 430, 431, 477, 481, 495 plus an additional 12 credits numbered 300 and above.

**Cognate Courses:** MATH141, 142, 215, 240, 286; CHEM131, 132; and CPTR125 (FORTRAN) or CPTR151.

Physics majors desiring secondary-teaching certification should also consult with the School of Education.

**Recommended Electives:** ELCT141, 142, TCED250.

**BS: Biophysics—40**

**Offered by the biology and physics departments**

BIOL165, 166, 371; 372 or BCHM421\*; PHYS241, 242, 271, 272, 277, 377, 411, 416, 430 or CHEM431 and 441, PHYS431, 495

\*A student may earn a minor in chemistry by selecting BCHM421 or CHEM431 and 441.

**Cognate Courses—27**

CHEM131, 132, 231, 232, 241, 242; MATH141, 142, 286.

**Recommended Electives:** BCHM422, 430; CHEM432,442; ELCT141, 142; MATH215, 240.