PHYSICAL THERAPY

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Academic Credits	Credits
BHS: Bachelor of Health Science (interim degree)	
DPT: Doctor of Physical Therapy	116
t-DPT: Doctor of Physical Therapy	30–38
DScPT: Doctor of Science in Physical Therapy	64
Orthopedic Clinical Residency Program	17

Mission
In accordance with the Seventh-day Adventist Church, Andrews University, and the College of Arts and Sciences, the mission of the Department of Physical Therapy is to provide a quality physical therapist education within a cooperative learning environment that promotes Christian values. The physical therapy *department* provides resources and encourages faculty to continue their educational, professional, and spiritual growth. The physical therapy *faculty* delivers, within a Christ-centered environment, the knowledge base and clinical skills that will prepare students for contemporary physical therapy practice. Physical therapy *graduates* will serve Christ as evidenced by their ministering to the needs of others through the delivery of effective professional healthcare. The physical therapy department faculty and graduates comprise a Christian network that is balanced in the development of the spiritual, mental, physical, and social life of its members.

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. Contact the Department of Physical Therapy for academic dates.

Graduate Programs

Doctor of Physical Therapy (DPT)
This three-year program begins after a student completes 92 semester credits of specific college prerequisites. Students taking the appropriate prerequisites will earn a Bachelor of Health Science (BHS) after the first year in the professional program and the DPT degree upon successful completion of the program. A previous bachelor's degree is not required however applicants holding a bachelor's degree are eligible to apply as well.

Program Accreditation
The DPT program is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE)*. After receiving the DPT degree graduates may apply to take the physical therapy licensure exam in the state of their choice.
* 1111 North Fairfax, Alexandria, VA 22314

Information/Application Process
Please call 1-800-827-2878, e-mail pt-info@andrews.edu or visit www.andrews.edu/cas/pt for application instructions and admission requirements. Information is available by June of each year.

All applicants applying for admission to the DPT professional entry program must apply via the Physical Therapy Centralized Application Service.

Admission Requirements
There are three tracks for admission into the DPT program. The minimum requirements to be considered for admission are:

Freshman Acceptance (Requires PTCAS application, but no interview or confirmation deposit). Freshman enrolling as a BHS: Physical Therapy major are guaranteed acceptance into the DPT program if they complete at least 90% of prerequisite course requirements at Andrews, maintain at least a 3.4 science and overall prerequisite GPA, meet all program admission requirements, uphold University standards and display professional behavior.

Preferred Acceptance (Requires a PTCAS application, interview and confirmation deposit). Acceptance into the program is PREFERRED when a student transfers into Andrews University for at least their last semester of prerequisite requirements, has at least a 3.3 science and overall prerequisite GPA, meets all program admission requirements, and upholds University standards and display professional behavior.

General Acceptance (Requires a PTCAS application, interview and confirmation deposit). The Andrews University physical therapy program enrolls students from a nationwide pool of applicants. GENERAL Acceptance includes any student who has completed all prerequisite requirements from any U.S. accredited college or university (or U.S. equivalent), maintains at least a 3.0 science and overall prerequisite GPA, meets all program admission requirements, and upholds University standards and displays professional behavior.

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

Prerequisite courses including general education requirements for students WITHOUT an earned bachelor's degree *(includes 92 semester credits with at least 15 credits being upper-division)*. Applicants are considered when a minimum of 4 or more prerequisite science courses and a minimum of 60 semester credits have been completed.

General Education Requirements

Religion: one religion course per academic year of attendance in a Seventh-day Adventist college or university. Minimum of three courses prior to entering program.

Language/Communication*

History*

Fine Arts/Humanities*

Life/Physical Sciences:

Life Science:

- A full sequence of anatomy and physiology or general biology with labs, **and**
- An upper division science course(s) related to human physiology or human biology.

Physical Science:

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.

Mathematics: A basic statistics or research methods course

Service: fulfilled through professional components of the program

Social Sciences:

Psychology—An introductory psychology course.

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

Fitness Education: recommend Andrews freshmen take HLED120 and one additional course from personal fitness, outdoor skills or team activity. Non-Andrews students take two from the three categories above.

* See General Education: Professional Degrees & Programs, p. 43

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

Electives: To fulfill the 92 total semester credits with at least 15 in upper division courses required, some course suggestions include business courses, ethics, cultural and diversity courses, arts and humanities, nutrition and physical activities.

Prerequisite courses for students WITH an earned bachelor's degree:

Life/Physical Sciences

Life Science:

- A full sequence of anatomy and physiology or general biology with labs; and
- An upper division science course(s) related to human physiology or human biology.

Physical Science:

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.

Mathematics: A basic statistics or research methods course.

Social Sciences

Psychology—An introductory psychology course.

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

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

Additional requirements for students with and without an earned bachelor's degree:

GPA: A minimum GPA of 3.00 is required in science courses and a minimum GPA of 3.00 in all core PT prerequisite courses. A grade of "C" or better is required in each prerequisite course.

Graduate Record Exam (GRE): A minimum composite score of 800 (Verbal + Quantitative), and a minimum written score of 3.0. Submit scores from the General Test taken less than five years prior to enrollment in the program.

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.

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

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.

BHS: Bachelor of Health Science (Interim Degree)

Students successfully completing the appropriate prerequisites and the first two semesters (36 credits) of the professional program qualify for the Bachelor of Health Science Degree. Successful completion of the BHS is defined as:

1. An earned minimum grade of "C+" (2.33) or "S" (in a "S/U" course) in each DPT program course. The BHS program courses include PTH400, 410, 415, 416, 418, 420, 425, 426, 428, 430, 440, 445, 450, 455, 457, and 460.
2. No more than a cumulative total of five points earned on the grade-point scale throughout the physical therapy program (see DPT Student Handbook).
3. Students must be able to perform skills listed in the Technical Standards of Performance and demonstrate professional behaviors as outlined in the DPT Student Handbook.
4. Maintain a cumulative GPA of 2.50 or greater in all credits used to meet the BHS degree requirements.

DPT: Doctor of Physical Therapy

Upon successful completion of the professional phase of the program (116 credits) students earn the Doctor of Physical Therapy degree. All coursework scheduled for each semester must be successfully completed prior to advancing to the next semester. Successful completion of the DPT program is defined as:

1. Completion of a bachelor's degree (BHS or other).
2. An earned minimum grade of "C+" (2.33) or "S" in each DPT program course. DPT program courses include PTH400, 410, 415, 416, 418, 420, 425, 426, 428, 430, 440, 445, 450, 455, 457, 460, 540, 601, 602, 610, 611, 612, 620, 621, 622, 625, 627, 632, 635, 637, 640, 645, 646, 647, 650, 651, 652, 661, 662, 680, 711, 712, 721, 722, 726, 728, 736, 748, 765, 768, 770, 799, 870, 880, 881, 882, 883 and 884.
3. Maintain a cumulative DPT program GPA of 3.00.
4. No more than a cumulative total of five points earned on the grade-point scale throughout the physical therapy program (see DPT Student Handbook).
5. Students must be able to perform skills listed in the Technical Standards of Performance and demonstrate professional behaviors as outlined in the DPT Student Handbook.
6. Satisfactory completion of the practical and written comprehensive exams: PTH770, 870.
7. Satisfactory completion of a capstone project and presentation.
8. Satisfactory completion of five clinical internships and the associated "Clinical Performance Instrument."
9. Satisfactory completion of the exit interview.

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.
3. Students who receive less than a "C+" (2.33) or a "U" on a "S/U" course or clinical will be given "grade points" equal to the semester credit for the course. A student who accumulates six or more points will academically disqualify him/herself from continuing in the program.

Postprofessional Programs

- Transitional Doctor of Physical Therapy (t-DPT)
- Doctor of Science in Physical Therapy (DScPT)
- Orthopedic Clinical Residency Program

These postprofessional programs are designed to provide practicing physical therapists with the opportunity to obtain postprofessional 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: Transitional Doctor of Physical Therapy

Admission Requirements

The minimum requirements to be considered for admission are:

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. 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, 545, 549, 590, 615, 630, 646, 718, 730, 740, 748, 750, 798
2. No grade lower than C (2.0) in any course.
3. A minimum cumulative GPA of 3.00.
4. Successful completion of the capstone project.
5. Satisfactory completion of the exit interview.

DScPT: Doctor of Science in Physical Therapy

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. For candidates holding a bachelor's degree, with no advanced master's, receipt of PTET scores.
7. For candidates holding a master's degree or DPT degree, receipt of professional portfolio.

Degree Requirements

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

1. For students with a **BS or Masters degree**: Satisfactory completion or competency in the following courses: PTH500, 545, 536, 537, 538, 546, 547, 548, 550, 590, 615, 630, 646, 718, 730, 740, 748, 760, 798, plus 8 approved elective credits.
   For students with a **DPT degree**: Satisfactory completion of the following courses: PTH536, 537, 538, 546, 547, 548, 549, 550, 590, 760, 798, plus 3 approved elective credits.
2. For students with a DPT degree who already have FAAOMPT or manual therapy certification from another approved

institution, PTH549 Principles of Contemporary Leadership and PTH760 Application in Clinical Research and PTH548 NAIOMT Level IV and PTH798 Capstone Experience are required, with the remaining curriculum being individually arranged by the director with the student's input. 32 credits must be taken at regular tuition for degree conferral. A total of 38 credits is still required for graduation.
3. Level III Manual Therapy Certification through NAIOMT or equivalent certification from another approved program; completed by registering for PTH770.
4. 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.
5. No grade lower than "C" (2.00) in any course.
6. A minimum cumulative GPA of 3.00.
7. Successful completion of the capstone project.
8. Satisfactory completion of the exit interview.

Orthopedic Clinical Residency Program

This program is designed for the licensed physical therapist seeking to become a board certified orthopedic clinical specialist and is a jointly sponsored program between Andrews University and the North American Institute of Orthopedic Manual Therapy. Following successful completion of this program, students will receive a certificate of completion.

Admission Requirements

1. Graduate of an accredited physical therapy program.
2. Hold or be in the process of obtaining licensure as a physical therapist in the U.S. or Canada.
3. Submit residency program application.
4. Submit a portfolio following program guidelines.
5. Submit a minimum of three satisfactory recommendations: one from the ACCE of the physical therapy program applicant attended; one from a faculty member of the physical therapy program applicant attended; one from a clinical supervisor the applicant interned with during physical therapy school. In the case of applicants who have been out of school longer than 3–5 years, the letters of recommendation may follow the same standards as the DScPT applicants.
6. Submission of a mission statement and reasons for applying to this program.

Certificate Requirements

The following certificate requirements apply to students successfully completing the orthopedic clinical residency program.

1. Satisfactory completion of the following courses: PTH536, PTH537, PTH538, PTH608, PTH609, PTH730
2. Successful completion of the oral/practical live patient examinations given through NAIOMT.
3. Successful completion of the NAIOMT supervised clinical hour requirement at an approved clinical mentorship site.
4. An earned minimum grade of "C" (2.00) or "S" (in a "S/U" course) in each program course.
5. A minimum cumulative GPA of 3.00.

Courses (Credits)

See inside front cover for symbol code.

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

PHTH120 **S (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.

PHTH417 **S ♦ (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: BIOL221, 222 or BIOL165, 166 or equivalent. See instructor for additional requirements. Corequisite: PTH427.

PHTH427 **S $ ♦ (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.

PHTH480 **(0–5)**
Physical Therapy Clinical Experience
A course which provides hands-on, patient contact experiences in a variety of settings. The clinical experiences are coordinated to correspond to the requirements of the physical therapy program. As a facilitator, the clinical instructor will assist in developing the student's clinical thinking skills. The student is expected to become independent with the evaluation and treatment of non-complex patients within that practice setting. S/U course.

PHTH590 **S (1–4)**
Topics in _____
Selected topics in physical therapy. Permission of department chair required. Repeatable. Specific prerequisites may be required for some subject areas.

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 **♦ (3)**
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. Corequisites: PTH400, 410 and 426.

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 ♦ **(3)**
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. Corequisites: PTH400, 410 and 416.

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.

PTH450 ♦ **(1)**
Neurology of Motor Control
An introduction to the function and interaction of the primary areas of the nervous system involved in controlling human movement, including the cortex, spinal cord, peripheral receptor system, basal ganglia, cerebellum, and the vestibular systems. Students are introduced to terminology and concepts associated with both normal function and pathology in these areas.

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 ♦ **(1)**
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.

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.

PTH500 **(2)**
Doctoral Colloquium
A degree orientation which will include portfolio development and assessment, 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.

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.

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: PTH440.

PTH541 **(3)**
Physiological Basis for Exercise Prescription: Level I
Using the system of Medical Exercise Therapy founded by Odvar Holten, this course covers the physiological basis for exercise prescription specifically related to the healing process. Testing strategies, formulas for exercise dosing and equipment conducive to this approach will be presented along with computer software developed to assist dosage and patient tracking.

PTH542 **(2)**
Physiological Basis for Exercise Prescription: Level II
Expanding on the knowledge presented in Level I, this course will go into more complex scenarios of patient impairments and more in depth spinal rehabilitation including advanced computer software training.

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 **(1–4)**
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 split up into two 30-hour blocks, or other increments as agreed upon by the student and CI. No less than 15 hours can be registered for at any given time.

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.

PTH589 **(1–2)**
Professional Seminar

PTH590 **(1–12)**
Topics in _____
Selected topics in physical therapy. Permission of department chair required. Repeatable. Specific prerequisites may be required for some subject areas.

Topics in Comparative Religion **(2)**
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.

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.

PTH608 **(2)**
Post Operative Management of Common Orthopedic Surgeries
This course covers the surgical techniques, guidelines for acute postoperative management and principles needed to safely design a rehabilitation program which will enable the patient to return to their previous level of function.

PTH609 **(2)**
Evidenced Based Orthopedic Clinical Practice: A Research Review
This course covers an up-to-date understanding of evidence supporting the evaluation and treatment of orthopedic pathologies. Keys to a working knowledge of contemporary research methodology and design along with the ability to analyze results of published studies from the perspective of statistical analysis will be presented.

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.

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.

PTH620 **(2)**
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 **(2)**
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 amputees, management of patients with disabilities requiring orthotic intervention, and application/management of traction and orthotic devices. Corequisite: PTH637.

PTH630 **(2)**
Clinical Research
Introduces the student to basic concepts of biostatistics and research design and the formulation of evidence based practice theories.

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)**
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 addresses 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.

PTH655 **$ (0)**
Program Continuation
Students may register for this non-credit continuation course while clearing deferred grade (DG) and/or incomplete (I) courses. Registration for this course indicates active status. Requires program approval.

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.

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.

PTH711 **(1)**
Clinical Reasoning I
A course intended to enhance the skills associated with clinical reasoning within the Physical Therapy setting. It will address the thought process that enters into every aspect of patient care in the practice of physical therapy, from the history to the physical exam; the differential diagnosis to the development of the prognosis; the plan of intervention to the eventual discharge. Correquisite: PTH721.

PTH712 **(1)**
Clinical Reasoning II
A continuation of PTH711 Clinical Reasoning I. Prerequisite: PTH711. Corequisite: PTH722.

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.

PTH721 **(1)**
Clinical Reasoning I Laboratory
A continuation of PTH711. Labs are designed to reinforce specific skills (evaluative or therapeutic) applicable to each lecture topic. Corequisite: PTH711.

PTH722 **(1)**
Clinical Reasoning II Laboratory
A continuation of PTH721 Clinical Reasoning I Laboratory. Prerequisite: PTH721. Corequisite: PTH712.

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.

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 personal and family budgeting and investing.

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.

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.

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.

PTH765 **(1)**
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.

PTH770 **(0)**
Practical Comprehensive Examination

PTH788 **$ (0)**
Research Project Continuation
Students register for this continuation course while completing their capstone project and not enrolled in other program courses. Registration for this course indicates full-time status which includes library privileges and access to an advisor. Requires advisor approval.

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.

PTH799 **(1–2)**
Research Project (topic)
Provides students with guidelines and supervision for data collection, analysis, capstone project preparation and oral presentation.

PTH870 **(0)**
Written Comprehensive Examination

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 Internship I, II, III, IV
Advanced full-time clinical experience (8–10 weeks each) in a variety of professional practice settings. One of the internships must be in outpatient orthopedics, inpatient, and a neurology setting. Thirty-six to forty hours per week. May be repeated.