

PHYSICAL THERAPY

Berrien Springs Campus

Physical Therapy Building

Department Administration & Admissions
(616) 471-AUPT or 800-827-AUPT
FAX: (616) 471-2867
pt-info@andrews.edu
http://www.andrews.edu/PHTH/

MSPT Program
(616) 471-AUPT or 800-827-AUPT
FAX: (616) 471-2866

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

Faculty

C. William Habenicht, *Chair*
Wayne L. Perry, MSPT Program Director
Daryl W. Stuart, MPT Program Director
Philip A. Anloague
John C. Banks
Kathy A. Berglund
John Carlos, Jr.
Heidi C. Clarke
Norene M. Clouten
Bonny D. Dent
Betsy Donahoe-Fillmore
Edward G. Greene
Kurt J. Jackson
Harold L. Merriman
A. Lynn Millar
Janet A. Mulcare
Elizabeth Oakley
David P. Village

Academic Programs	Credits
<u>Berrien Springs campus</u>	
BS: Anatomy and Physiology (interim degree for MSPT students)	
MSPT: Master of Science in Physical Therapy (5-years that includes BS credits)	174
AMPT: Advanced Master in Physical Therapy	26.5-32.5
ACPT: Advanced Certificate in Physical Therapy	23
<u>Dayton OH campus</u>	
MPT: Master of Physical Therapy	78.5

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.

PROFESSIONAL ENTRY PROGRAMS

Master of Science in Physical Therapy (MSPT). This 3-year program begins after a student completes 2 years of college prerequisites. A previous college degree is not necessary. Students may earn 2 degrees: an interim Bachelor of Science (received after 2 years in the professional program) and an MSPT degree.

Master in Physical Therapy (MPT). The curriculum in this 2-year program uses problem-based learning and is designed for individuals who already have completed a baccalaureate degree.

ACCREDITATION AND BOARD CERTIFICATION

The MSPT and MPT programs are both accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE). Graduates may apply to take the state board examination in the state of their choice after receiving either MSPT or MPT degrees.

APPLICATION PROCESS

Information Packets. Packets which describe admission requirements for both professional entry programs are available throughout the year. The information is designed to aid the prospective student through the application and admissions process. Please call 1-800-827-2878, option 1, to request an information packet.

Application Packets. Packets containing all necessary forms and instructions for completing the application process are available by June of each year. Applicants holding a baccalaureate or advanced degree are welcome to apply to both the MSPT/Dayton and the MSPT/Berrien Springs programs simultaneously and will receive equal consideration for admission.

Applicants who meet eligibility requirements are invited to participate in a personal interview with admissions personnel.

Notices of acceptance and denial are sent by certified mail. Classes begin on the Berrien Springs campus in July, and on the Dayton campus in August.

ADMISSION REQUIREMENTS

1. Minimum 3.00 cumulative GPA in both natural science prerequisite and general education prerequisite courses.
2. Personal interview of eligible applicants.
3. Documentation of 80 hours (including 20 hours in an inpatient setting) of clinical observation under a licensed physical therapist.

International applicants must also provide:

1. A minimum score of 80 on the *MELAB* or 550 on the *TOEFL* test (if English is not their first language).
2. English translation of relevant course descriptions from college bulletin(s) where course work was completed.
3. Documentation of successful completion of 30 credits (or equivalent) of course work taken in the U.S. or Canada in the English language.
4. If a baccalaureate or advanced degree has been earned, documentation that the applicant graduated from an institution registered in the *International Handbook of Universities*.

MSPT PROGRAM

Berrien Springs, MI

UNDERGRADUATE PREREQUISITES

Natural Sciences—19

Microbiology—3

One term with lab as required by health-related programs.

AU Students: BIOL260

Anatomy & Physiology—6

One full sequence of anatomy and physiology with labs as required by health related programs. A full sequence of general biology with labs or general zoology with labs may be substituted for anatomy and physiology.

AU Students: BIOL111 & BIOL112

Physics & Chemistry—Choose one option—6/4

Option 1: A full sequence (minimum 6 semester/8 quarter credits) of General Physics with labs as required for physics majors or pre-med students, *plus* a minimum of 4 semester/6 quarter credits of any chemistry with lab.

AU Students: PHYS141-142 & 4 semester credits of any chemistry course with lab

Option 2: A full sequence (minimum 6 semester/8 quarter credits) of General Chemistry with labs as required for chemistry majors or pre-med students, *plus* a minimum of 4 semester/6 quarter credits of any physics course with lab.

AU Students: CHEM131-132 & 4 semester credits of any physics course with lab

GENERAL EDUCATION COURSES—45

Computer Science—0-3

Documented competency in word processing and spreadsheets.

AU Students: Take competency exam: credits taken from INFS110 as needed

Statistics/Math—3

A basic statistics course.

AU Students: STAT285

General Psychology—3

An introductory psychology course.

AU Students: PSYC101

Human Development—3

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

AU Students: EDPC301

? Behavioral/Social Science—3

One course from the following options: Sociology, Geography, Anthropology, Minority Groups, Economics, American Government

AU Students: One of BHSC220, BHSC235, IDSC237, SOCI119, GEOG110, ANTH124, ANTH200, PLSC104, or ECON225

? English—6

A full sequence of English Composition which includes writing components.

AU Students: ENGL115 & ENGL215

? Communication—2

A course on human communication, one-to-one, small group, and public speaking.

AU Students: COMM104

? Fine Arts—3

One course from the following options: appreciation, theory and/or history course in Music, Art, Photography, etc.; OR 2 semesters/3 quarters of group performance

activities. Private music lessons do not apply.

AU Students: One of IDSC211, PHTO210, MUHL214, ART220; or 2 semesters of Ensemble Music

? **Humanities—3**

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

AU Students: One of HIST117, HIST 118, HIST204, HIST205, ENGL255, PHIL224, or Second Language

? **Physical Education—2**

2 semester/3 quarter credits: All activity courses OR a minimum of ½ the required credits from activity courses and ½ the required credits from physical fitness theory course.

AU Students: HLED130 OR any 4 PEAC courses (.5 semester credits each)

? **Religion—0-6**

One 3 semester /4 quarter credits religion course per year is required only if attending a Seventh-day Adventist school.

AU Students: RELT100 and one of RELB210, RELT250, OR RELT340

? **Electives—0-9**

If electives are needed in order to fulfill the total 64 semester/96 quarter credits required, some suggested courses include service related courses, accounting, macro economics, or nutrition.

AU Students: Use PPTH120, BHSC100 whenever possible if elective is needed.

?

Additional science courses

If needed to achieve the required credits.

Exceptions to the above prerequisites are considered on an individual basis (e.g., licensed health-care professionals or special-life situations).

**CONTINUED ENROLLMENT
REQUIREMENTS**

10. Progressive enrollment in the physical therapist education program requires successful completion of all PTH 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 the cumulative GPA to 3.00 during the academic term of probation are normally

PHTH341 (1)***Therapeutic Modalities I Laboratory***

Techniques of hydrotherapy, thermal agents, wound care, and massage. Supervised practicum includes patient positioning and application of the therapy to obtain desired physiological response. Corequisite: PHTH331.

PHTH342 (1)***Therapeutic Modalities II Laboratory***

Specific electrotherapy and mechanotherapy treatment applications, use of equipment and assessment of physiological responses. Corequisite: PHTH332.

PHTH342-50 (1)***Honors Therapeutic Modalities Laboratory***

Requires special project work.

PHTH346 (2.5)***Medical Physiology***

Medical approach to the study of normal human body functions as related to individual and combined activities of selected organs and systems. Prerequisites: PHTH317 and 327.

PHTH351 (1.5)***Kinesiology I***

The study of human movement including an introduction to the basic concepts of biomechanics with an emphasis on human joint/muscle structures and functions. Prerequisites: PHTH317 and 327. Corequisite: PHTH352.

PHTH352 (1)***Kinesiology I Laboratory***

Surface location for specific underlying muscle and bone structures are identified. Basic evaluation procedures for joint motion and limb measurements including goniometry, volumetric measurements, girth, palpation, and introduction

PHTH449 ? (1.5)

Neuroscience II

Same as PHTH448 with an emphasis on clinical applications. Prerequisites: PHTH448 and 458. Corequisite: PHTH459.

PHTH456 ? (1)

Applied Physiology Laboratory

Practical demonstration and experience with metabolic responses to exercise, testing procedures, exercise prescription, and experiment design. Corequisite: PHTH446.

PHTH456-50 ? (1)

Honors Applied Physiology Laboratory

Requires special project work.

PHTH457 ?

- PHTH548** (1) **PHTH586** (1)
Advanced Neuro Techniques 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: PHTH538.
- PHTH551, 552, 553** (4,4,4) **PHTH588** (1)
Clinical Affiliation, I, II, III
 Advanced full-time clinical experience for 8 weeks each in a variety of professional practice settings. One of the 8-week affiliations must be in an inpatient setting. Thirty-six to forty hours per week.
- PHTH556** (1.5) **PHTH589** (1-2)
Pediatric Physical Therapy
 Evaluation and treatment of pediatric patients. Corequisite: PHTH566.
- PHTH559** (1.5) **PHTH590** (1-4)
Sports Medicine and Advanced 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: PHTH569.
- PHTH566** (1) **PHTH595** (1)
Pediatric Physical Therapy 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: PHTH556.
- PHTH569** \$(1)
Sports Medicine and Advanced Orthopedics Laboratory
 Practice in advanced evaluation and treatment procedures for orthopedic pathology with special emphasis on athletic injuries. Practice of different exercise regimens and taping techniques. Corequisite: PHTH559.
- PHTH575** (1.5)
Biomedical Ethical Issues
 Contemporary ethical issues are examined, including the relationships between peers, superiors, subordinates, institutions, clients, and patients. Issues are illustrated with real-life cases and related to Christian biblical presuppositions.
- PHTH576** (1.5)
Advanced Human Anatomy/Neuroanatomy
 Advanced-level elective on human and neuroanatomy offered for physical therapy graduate students. Also available to practicing allied-health personnel in the community. Corequisite: PHTH586.
- PHTH585** (1.5)
Industrial Medicine
 Gives a broad overview of occupational medicine with emphasis on evaluation and treatment 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: PHTH595.
- PHTH586** (1)
Advanced Human Anatomy/ Neuroanatomy Laboratory
 Dissection and study of anatomical materials. Corequisite: PHTH576.
- PHTH588** (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.
- PHTH589** (1-2)
Professional Seminar
 Weekly sessions in which students present and discuss formal case studies from clinical education experiences, including one-day modules on various topics with contemporary relevance.
- 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.
- PHTH595** (1)
Industrial Medicine Laboratory
 Observation, demonstration, and practice in the evaluation, treatment, and patient instruction

financial issues, public relations and marketing strategies and continuous quality improvement.

PHTH608**Professional Seminar IV: Professional Assessment & 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**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**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**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**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 expected with increased clinical responsibilities in areas of program development and implementation, administration, and clinical management including staff supervision.

PHTH661**Clinical Pathology—General Medicine**

Small-group, problem-based learning course utilizing patient-case scenarios of various general medical, acute care, and post-operative patient-case scenarios or pathologies to facilitate the integration of previous knowledge with new learning. Students review and apply basic and clinical science concepts to each case, formulating appropriate physical therapy assessment and treatment strategies. Corequisites: PHTH671 and 681.

PHTH662**Clinical Pathology—Neurology I**

Small-group, problem-based learning course utilizing patient-case scenarios of various neurological pathologies to facilitate the

integration of previous knowledge with new learning. Basic and clinical-science principles used to formulate appropriate assessment and treatment strategies for the patient with neurological deficits. Corequisites: PHTH672, 682, and 692.

PHTH663**Clinical Pathology—Neurology II**

Small-group, problem-based learning course utilizing patient-case scenarios of various pediatric pathologies to facilitate the integration of previous knowledge with new learning. Uses basic and clinical science principles to formulate appropriate assessment and treatment strategies for pediatric patients. Corequisites: PHTH673, 683, and 693.

PHTH664**Clinical Pathology—Orthopedics I**

Small-group, problem-based learning course utilizing patient-case scenarios of various orthopedic pathologies to facilitate the integration of previous knowledge with new learning. Development of clinical reasoning and decision making as they relate to orthopedic pathologies. Corequisites: PHTH674 and 684.

PHTH665**Clinical Pathology—Orthopedics II**

Small-group, problem-based learning course utilizing patient-case scenarios dealing with differential diagnosis and management of complex orthopedic pathologies to facilitate the integration of previous knowledge with new learning. Corequisites: PHTH675 and 685.

PHTH671**Clinical Skills Laboratory—General Medicine**

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 neurological pathology. Students learn physical examination tests and measures along with therapeutic interventions appropriate for this population. Corequisites: PHTH661 and 681.

PHTH672**Clinical Skills Laboratory—Neurology I**

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 neurological pathology. Students learn physical examination tests and measures along with therapeutic interventions appropriate for this population. Corequisites: PHTH662, 682, and 692.

PHTH673**Clinical Skills Laboratory—Neurology II**

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. Therapeutic procedures and protocols appropriate for these patients are taught with special consideration for patient/ family needs and education. Corequisites: PHTH663, 683, and 693.

PHTH674**Clinical Skills Laboratory—Orthopedics I**

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 Corequisites: PHTH664 and 684.

PHTH675**Clinical Skills Laboratory—Orthopedics II**

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 musculo-skeletal pathology and dysfunction. Students learn physical examination tests and measures along with therapeutic interventions appropriate for this population. Corequisites: PHTH665 and 685.

PHTH681**Clinical Issues Seminar—General Medicine**

Presentation/discussion of comprehensive issues related to physical-therapy management of the general medical and post-operative patients. Topics include diabetes, wound care, universal precautions, medical diagnostics, amputees, arthroplasties, and durable medical equipment. Corequisites: PHTH661 and 671.

PHTH682**Clinical Issues Seminar—Neurology I**

Presentation/discussion of comprehensive issues related to physical therapy management of the patient with neurological dysfunction. Topics include: rehabilitation team interaction, psychosocial and socioeconomic issues relevant for this population; motor learning and motor control and neuro-plasty. Corequisites: PHTH662, 672, and 692.

PHTH683**Clinical Issues Seminar—Neurology II**

Presentation/discussion of comprehensive issues 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; psycho-social issues relating to the patient and family; funding; documentation; and pharmacological management. Corequisites: PHTH663, 683, and 693.

PHTH684**Clinical Issues Seminar—Orthopedics I**

Presentation/discussion of comprehensive issues 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 post-operative care, and gait analysis. Corequisites: PHTH664 and 674.

PHTH685**Clinical Issues Seminar—Orthopedics II**

Seminar presenting/discussing comprehensive issues related to physical-therapy management of complex orthopedic patient with select axial musculoskeletal pathologies. Includes chronic pain management, medical diagnostics, surgical intervention for the spine, differential diagnosis, and age-related pathologies. Corequisites: PHTH665 and 675.

PHTH687**Clinical Education Workshop**

Concentrated instruction in selected advanced physical therapy patient-care topics including cardiopulmonary rehabilitation, women's health issues, manual therapy strategies, advanced

electrotherapeutics, advanced neurological treatment strategies, and regional evaluation/ treatment strategies for TMJ and hand.

PHTH688 (2.5)

Clinical Enrichment Seminar

Seminar/discussion on issues related to physical therapy care and the profession. Includes preventive health-care programs, physical-therapy consultation, burn and wound-care management, industrial rehabilitation and sports medicine.

PHTH691 (2)

Research I

Introduction to research methods and design;

PHTH580**Professional Ethics**

Basic ethical theory and methods and their place in the study of human behavior. Medical professional context and challenges of ethical behavior are examined including the relationships between peers, superiors, subordinates, and patients. Contemporary medical ethical issues are discussed and illustrated with actual cases and related to Christian biblical presuppositions.

PHTH587**Applied Movement Science: Norwegian Concepts**

The metabolic activity level of different tissue types described, compared, and contrasted. Sources of fuel for energy production described and related to the specificity of exercise training, tissue remodeling, and regeneration. Concepts used to plan a physiologically correct rehab program for differing pathologies.

PHTH648**Workshop**

(2)

(2.5)

(1-4)

PHYSICS

Haughey Hall, Room 212
(616) 471-3430
physics-info@andrews.edu
<http://www.andrews.edu/PHYS/>

Faculty

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

Academic Programs	Credits
BS: Physics	40
BS: Biophysics	42
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 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, 377, 411, 430, 431, 477, 481, 495 plus an additional 12 credits numbered 300 and above.

Cognate Courses: MATH141, 142, 240, 281, 286; CHEM131, 132; and CPTR125 (FORTRAN) or CPTR151.

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

Recommended Electives: ELCT141, 142, TCED250.

BS: Biophysics—42

Offered by the biology and physics departments

BIOL165, 166, 371; 372 or BCHM421*;
BIOL348; PHYS241, 242, 271, 272, 377, 411, 416, 430 or CHEM431 and 441, PHYS377, 431, 495