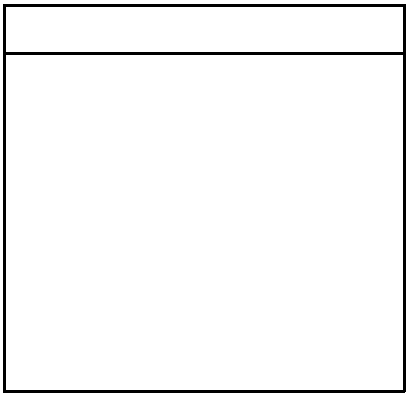
Organization and Administration of Physical Education
Techniques and methods of organizing and administering a physical education department. Areas include facility management, supervision of workers, budgeting, intramural organization, public relations, and legal issues. Should be taken the senior year.

PETH470 **Alt (1)**
Seminar in Physical Education and Health
Explores current issues relevant to physical education and health by means of presentations, readings, and projects. Prerequisites: PETH306, 370, 374.

PETH495 **(1-4)**
Independent Study/Reading/ Research/ Project
Independent Study: Directed study in an area of interest resulting in a formal term paper. Independent Readings: Weekly meetings with the instructor for individual assignments and reports. Independent Research: Design and execution of an experiment or causal-comparative research. Independent Project: Practical or creative experience or project in consultation with instructor. Permission required from the instructor and department chair. Repeatable to 4 credits in each area.

RECR280 **Alt (2)**
Introduction to Recreation



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.

MSPT PROGRAM
Berrien Springs, MI

UNDERGRADUATE PREREQUISITES

Religion **0-8**
- AU students: RELB100
- Additional religion course
- Transfer students:
  - at least one religion course per year (only required of students in SDA colleges)

Arts & Humanities **9**
- AU pre-PT students:
  - HIST115 or 116
  - IDSC211
  - Select one of the following:
    - ARTH220, ENGL255, MUHL214, PHTO210, IDSC200, second language
- Transfer students:
  1. Fine Arts—select 1 course
     Language of Art, Music Appreciation, History of Photography (private music lessons and group performance activities do not apply)
  2. Humanities—select 1 course
     U.S. History, American History, Canadian History, History of Civilization, Philosophy, Critical Thinking, Second Language, Cultural Perspectives, Ethics, Literature

Natural/Physical Science with Labs
- Microbiology 4-5
- Anatomy & Physiology 8-10
  - A full sequence of General Biology, Foundations of Biology, or General Zoology (with labs) already completed may be substituted for Anatomy and Physiology
- Physics & Chemistry 14
  - *Choose one of the following options:*
  - General Physics and any Chemistry
  - A full sequence (minimum 8 quarter or 6 semester units) of General Physics with labs as required for physics majors or pre-med students, plus a minimum of 6 quarter or 4 semester units of any chemistry sequence with labs.
  - or
  - General Chemistry and any Physics
  - A full sequence (minimum 8 quarter credits or 6 semester units) of General Chemistry with labs as required for chemistry majors or pre-med students, plus a minimum of 6 quarter or 4 semester units of any physics sequence with labs

Social Science **11**
- AU pre-PT students:
  - PSYC101, EDPC301
  - *Select one of the following:*
  - BHSC220, 235, IDSC237
- Transfer students:
  - General/Intro Psychology
  - Human Development
  - Additional course chosen from Geography, Economics, American Government, Sociology, or Anthropology

Language & Communication **12**
1. Written Expression
   English Composition (full sequence)
2. Communication—COMM104 or equivalent

Math & Computer Science **8-12**
1. Mathematics—STAT285 or equivalent
   AU students must demonstrate college algebra proficiency
2. Computer Science (A or B)
   A. INSY110 or proficiency
   B. COSC123
   Transfer students:
   Basic computer course (including word processing & spreadsheets)

Wellness/PE **3**
- AU pre-PT students:
  - HLED130 or 3 activity courses
- Transfer students:
  - 3 credits with a minimum of 1.5 credits from activity courses.

Service **0-2**
- BHSC100S Service Learning
- *Only AU pre-physical therapy students*

Electives
- Applicants take elective classes to reach the total number of required credits as listed below. Suggested electives include accounting, macroeconomics, and nutrition.

TOTAL REQUIREMENTS **96**

PROGRAM: UNDERGRADUATE YEARS

The first 2 years of the 3-year program are offered at the junior- and senior-year undergraduate level. Students successfully completing the first 2 years of the professional program qualify for an interim Bachelor of Science degree with a major in Anatomy and Physiology.

Continued Undergraduate Enrollment Requirements

1. Continued enrollment in the physical therapy professional program requires successful completion of all didactic PHTH course work listed for the previous quarter and maintenance of minimum cumulative GPA standards.
2. Progressing to each clinical experience (PHTH321, 322, 323; 551, 552, 553, 554) is contingent on the successful completion of the previous clinical experience.

If the student does not successfully complete a quarter, Physical Therapy Faculty Council approval is required for the student to continue enrollment in the program. In certain cases a 1-year delay in the student's professional education program may be necessary. If this should occur, the student must repeat his/her most recent clinical experience before re-entering the professional education program. Further delays require a reapplication to the program, accompanied by appropriate fees.

See *Physical Therapy Student Handbook* for more information regarding minimum GPAs for quarterly progression, Foundation Sciences, and other specific requirements.

BS: ANATOMY AND PHYSIOLOGY
(Interim Degree)

Prerequisites **96**

MSPT Program Courses **93**

PHTH317, 321, 322, 323, 324, 326, 327, 329, 331, 332, 334, 341, 342, 346, 351, 352, 353, 354, 361, 362, 363, 364, 421, 422, 426, 431, 432, 441, 442, 443, 446, 447, 448, 449, 456, 457, 458, 459, 466, 469, 471, 472, 476, 486, 496.

GRADUATE-YEAR PROGRAM

In addition to course work, components of the final year include a graduate research project and two clinical internships. Elective course work is also offered, allowing students to explore speciality areas of interest. Upon successful completion of the graduate year, students earn the Master of Science in Physical Therapy degree.

Graduate Admission Requirements. In addition to meeting the General Minimum Admission Requirements for graduate degree programs on p. 28, the following departmental requirements apply for transitioning from the undergraduate to the graduate phase of this program:

1. Completion of the Bachelor of Science interim degree with a major in anatomy and physiology.
2. Successful completion of all undergraduate physical therapist program courses with a minimum GPA of 2.75.

Continued Graduate-Enrollment Requirements

1. Quarterly enrollment in the physical therapist education program requires successful completion of all PHTH course work listed for the previous quarter.
2. Progressing to each clinical experience (PHTH321, 322, 323; 551, 552, 553, 554) is contingent on the successful completion of the previous clinical experience. To enter PHTH551 requires satisfactory completion of the *Pre-Clinical Comprehensive Examination*.
3. A student whose cumulative graduate GPA falls below 3.00 in any given quarter is placed on academic probation. With advice from the student's academic adviser, the Physical Therapy Faculty Council's recommendation is referred to the dean of the School of Graduate Studies, for final approval.

Students who do not increase the graduate GPA to 3.00 during the quarter of probation normally are terminated. Research activity normally ceases during a probational quarter. Exceptions require approval by the Physical Therapy Faculty Council and the dean of the School of Graduate Studies.

MSPT DEGREE REQUIREMENTS

In addition to the General Minimum Requirements for graduate degree programs on p. 32, the following departmental/program requirements apply. These are subject to change by action of the Physical Therapy Degree Council.

1. Satisfactory completion of the 64 credits in the MSPT curriculum including:
   Basic Courses: PHTH423, 433, 473, 483, 520, 525, 528, 534, 536, 544, 575, 588; BSAD556; EDPC622.
   Electives **8**
   A minimum of 8 additional credits of electives at the graduate level. At least 4 of these 8 credits must be physical therapy (PHTH) graduate-level electives chosen from the following: PHTH509, 519, 538, 548, 556, 557, 558, 559, 560, 566, 567, 568, 569,

570, 585, 595. Selection of electives outside the department requires the approval of the chair of the Department of Physical Therapy.

Research **3**
Satisfactory completion of a written and oral report on an approved research project (PHTH698).

Clinical-affiliation Experiences **24**
Satisfactory completion of clinical-affiliation experiences (PHTH551, 552, 553, 554).

2. No grade lower than C (2.00) in any course in the graduate portion of the program.
3. A minimum GPA of 3.00 for the graduate portion of the program.
4. Satisfactory completion of the *Pre-Clinical Comprehensive Examination*.
5. Satisfactory performance on the written and/or oral comprehensive examinations

See the Physical Therapy Student Handbook for additional requirements.

MPT PROGRAM
Dayton, OH, Campus

Admission Requirements and Prerequisites. Applicants must meet the General Minimum Admission Requirements for graduate degree programs on p. 28, including the completion of the Graduate Record Examination (GRE).

1. **Undergraduate Degree.** Baccalaureate degree or its equivalent (as determined by the Academic Records Office) with a cumu- lative GPA of 3.00 or above.
2. **Computer Science.** One course or equivalent with competency in word processing and use of spread sheets.
3. **Psychology.** One term of an introductory course and one human development or developmental psychology course.
4. **Basic Statistics.** One term of any statistics course.
5. **Physical/Natural Sciences** with labs. 36 qtr. credits/ 24 sem. hrs.

Biological Sciences

Choose one of the following:
A full sequence of Anatomy & Physiology with labs **or** a term of Human or Animal Physiology with labs **and** a term selected from one of the following courses:

- Human Anatomy with lab
- Microbiology with lab
- General Biology with lab
- Zoology with lab

Physics and Chemistry

Choose one of the following:
General Physics and any Chemistry
A full sequence (minimum 8 quarter or 6 semester units) of General Physics with labs as required for physics majors or pre-med students, **plus** a minimum of 6 quarter or 4 semester units of any chemistry sequence with labs.

or

General Chemistry and any Physics
A full sequence (minimum 8 quarter or 6 semester units) of General Chemistry with labs as required for chemistry majors or pre-med students, plus a minimum of 6 quarter or 4 semester units of any physics sequence with labs.

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

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

See the *Physical Therapy Student Handbook* for additional requirements.

MPT DEGREE REQUIREMENTS

In addition to the General Minimum Requirements for graduate-degree programs on p.

must have their own transportation for the clinical observation.

MSPT PROGRAM
BERRIEN SPRINGS, MI

PHTH317 **(6)**
Gross Anatomy
A comprehensive study of human anatomy with emphasis on the nervous, skeletal, muscle, and circulatory systems. Provides a solid morphological basis for a synthesis of anatomy, physiology, and the physical therapy clinical sciences. Corequisite: PHTH327.

PHTH321, 322, 332 **(2,2,2)**
Clinical Practicum I, II, III
Practice of the knowledge and skills developed in the classroom and lab in a patient-care setting. Each practicum consists of 2 weeks full-time physical therapy experience in clinical facilities affiliated with the university. Repeatable.

PHTH324 **(1)**
Therapeutic Procedures
Principles and utilization of basic physical therapy care including patient positioning, transfer and transport techniques, selection and use of wheelchairs and other ambulatory aids, vital-sign determination, ascetic techniques, basic wound care, and blood-borne pathogens. Corequisite: PHTH334.

PHTH326 **(2)**
Lifestyle Problems in Physical Therapy
Introduces lifestyle factors that are related to health and disease and emphasizes preventive aspects of proper lifestyle. Topics include addictive substances, proper diet, exercise, and mental health, and the way these impact conditions treated in physical-therapy practice.

PHTH327 **(4)**
Gross Anatomy Laboratory
Dissection and identification of structures in the cadaver, and the study of charts, models, and prosected materials. Corequisite: PHTH317.

PHTH329 **(2)**
Professional Orientation
Introduction to the physical therapist's professional role in various medical and community settings. Medical, legal, ethical, philosophical, and historical concerns of the practice. Introduction to medical documentation with emphasis in problem identification and solution.

PHTH331 **(2)**
Therapeutic Modalities I
Hydrotherapy, thermal agents, wound care, and massage: basic principles, physiologic effects, indications, and contraindications. Corequisite: PHTH341.

PHTH332 **(2)**
Therapeutic Modalities II
Electrotherapy and mechanotherapy (traction), physical principles, methodologies, physiological effects, indications and contraindications, application and usage of equipment, and treatment rationale. Corequisite: PHTH342.

PHTH332-50 **(2)**
Honors Therapeutic Modalities
Requires special project work.

PHTH334 **(1)**
Therapeutic Procedures Laboratory
Clinical application in utilizing basic physical-therapy care including patient positioning, transfer and transport techniques, selection and use of wheelchairs and other ambulatory aids, vital-sign determination, ascetic techniques, basic wound care, and blood-borne pathogens. Corequisite: PHTH324.

PHTH341 **(2)**
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 **(2)**
Therapeutic Modalities II Laboratory
Specific electrotherapy and mechanotherapy treatment applications, use of equipment and assessment of physiological responses. Corequisite: PHTH332.

PHTH342-50 **(2)**
Honors Therapeutic Modalities Laboratory
Requires special project work.

PHTH346 **(4)**
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 **(3)**
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 **(2)**
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 accessory to joint movement. Prerequisites: PHTH317 and PHTH327. Corequisite: PHTH354.

PHTH353 **(2)**
Kinesiology II
A continuation of PHTH351 focusing on biomechanics, body mechanics, normal-gait analysis, and introduction to pathological-gait analysis. Prerequisites: PHTH351 and 352. Corequisite: PHTH354.

PHTH354 **(2)**
Kinesiology II Laboratory
A continuation of PHTH352 focusing on procedures for testing muscle strength, normal-gait analysis, and an introduction to pathological-gait analysis. Prerequisites: PHTH351 and 352. Corequisite: PHTH353.

PHTH356 **(1)**
Medical Physiology Laboratory
Observation and demonstration of physiologic phenomena related to specific body function. Prerequisites: PHTH317 and 327.

PHTH361 **(2)**
Pediatrics I
An overview of embryological development followed by normal infant/child development to 5 years of age with an emphasis on motor development. Students evaluate infants and children with commonly used tests that address various developmental domains. Corequisite: PHTH362.

PHTH362 **(1)**
Pediatrics I Laboratory
Practice in various specific tests used in the physical therapy evaluation of the infant/child that address different developmental domains. Corequisite: PHTH361.

PHTH363 **(1)**
Pediatrics II
Description of various pediatric pathologies encountered in physical therapy with appropriate corresponding evaluation and treatment approaches. Normal and abnormal motor development is contrasted. Prerequisite: PHTH361 and 362. Corequisite: PHTH364.

PHTH364 **(1)**
Pediatrics II Laboratory
Practice in the special techniques required in evaluation and treatment of pediatric patients diagnosed with selected pathologies. Introduces current treatment approaches, such as Neuro-developmental Treatment (NDT) and others, with their effects on treatment goals. Prerequisites: PHTH361 and 362. Corequisite: PHTH363.

PHTH417

Survey of Neurophysiology
Readings in the recent neurophysiological research literature with reports on scientific findings. Application of the materials studied to the treatment of patients with neurological disorders.

PHTH426-50 **(2)**
Honors Survey of Neurophysiology
Requires special project work.

PHTH427 **$ g (2)**

PHTH520 (3)
Geriatrics
Study of the unique characteristics of the geriatric patient and special needs in evaluation, program design, and treatment.

PHTH525 (4)
Health Administration
Application of management practices and theory to the modern acute-care facility. Study of the organizational structures, operations, and financing of health-care delivery institutions. Examination of the organization and interrelationship of professional and support elements in the health-care setting: regulation and accreditation, labor relations, community relations, and financial management.

PHTH528 (1)
Christian Finance Seminar
Basic principles of stewardship as taught in the Bible in contrast with those taught and practiced by the world. Includes elements of personal and family budgets and investments and how to create and use them.

PHTH534 (1-2)
Research Methods and Statistics
Methods of research applied to medical science: critiquing scientific articles, defining and delineating a problem, writing hypotheses, designing the research to provide data to test hypotheses. Fundamental procedures in collecting, summarizing, presenting, analyzing, and interpreting statistical data. Statistical tests applicable to medical specialities. Repeatable. Corequisite: PHTH534.

PHTH536 (2-3)
Psychology of the Physically Impaired
Psychological responses to illness and disability. Interpersonal relationships between the therapist, the family, and the patient associated with incapacity, pain, grief, and dying. Methods for handling these responses in clinical situations. Common psychiatric disorders covered with their clinical diagnosis, treatment regimes, and projected outcomes. A seminar approach to professional responsibilities for health care.

PHTH538 (2)
Advanced Neuro Techniques
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: PHTH548.

PHTH544 (1)
Research Methods and Statistics Laboratory
Constructing research designs for specific hypotheses. 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. Repeatable. Corequisite: PHTH534.

PHTH548 (2)
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, 554 (6,6,6,6)
Clinical Affiliation, I, II, III, IV
Advanced full-time clinical experience for 6 weeks in a variety of professional practice settings. Each student must complete two 6-week affiliations in rehabilitation and in

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 **(2)**
Industrial Medicine Laboratory
Observation, demonstration, and practice in the evaluation, treatment, and patient instruction procedures relating to occupational medicine. Corequisite: PHTH585.

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.

PHTH698 **(1-2)**
Research Project
Development of a physical therapy-related research topic, thesis, and oral presentation. *Summer*: Provides students with guidelines and supervision for data collection and identification of appropriate statistical analysis procedures. *Winter*: Provides students with guidelines and supervision for the oral research presentation and the completion of the written thesis.

MPT PROGRAM (Dayton,Ohio)

PHTH501 **(3)**
Anatomy and Movement Science I
A comprehensive study of gross anatomy with an emphasis on the appendicular skeleton. Provides a morphological basis for synthesis of basic and clinical science concepts related to function, including arthrology and biomechanical principles of movement. Corequisite: PHTH511.

PHTH502 **(3)**
Anatomy and Movement Science II
Presents fundamental principles of human movement, integrating concepts of exercise physiology and motor learning with principles of kinesiology and biomechanics. Emphasis on understanding normal movement so that abnormal movement patterns can be identified and corrected. Corequisite: PHTH512.

PHTH505 **(3)**
Functional Physiology
A study of human physiological function of the major organ systems including clinical manifestations associated with pathophysiological conditions. Introduction of applied physiology concepts in musculoskeletal, cardiovascular, pulmonary, electro- and environmental physiology.

PHTH511 **(3)**
Anatomy and Movement Science I Laboratory
Human cadaver dissection integrated with the learning and development of clinical skills necessary to examine and evaluate static and dynamic human movement function. Corequisite: PHTH501.

PHTH512 **(3)**
Anatomy and Movement Science II Laboratory
Development of clinical skills and reasoning related to assessment of neuromuscular function. Emphasizes posture and gait analysis. Corequisite: PHTH502.

PHTH516 **(3)**
Neural Science
Studies the basic anatomy and physiology of the central and peripheral nervous systems as they pertain to normal somatic functions. Basic disease families are introduced. Corequisite: PHTH526.

PHTH521 **(2)**
Health Care I
A seminar introducing the profession of physical therapy. Topics include physical therapy practice, the American Physical Therapy Association, health-care trends, personal and professional values, ethical and legal issues, and the cost of service delivery. Students begin to develop strategies for personal integration into the physical therapy profession.

PHTH522 **(2)**
Health Care II
Introduces clinical-practice issues related to patient care and management along with the development of clinical reasoning and skills associated with patient examinations, assessment, treatment planning, and documentation. Additional topics include quality assurance, differential diagnoses, and fundamentals of managing a physical-therapy business.

PHTH526 **(1)**
Neural Science Laboratory
Original and prosected specimens, models, and charts used to study structural relations of the central nervous system. Corequisite: PHTH516.

PHTH530 **(1)**
Professional Seminar I
Introduces problem-based learning, research, and the attitudes and behaviors of the physical therapy professional.

PHTH537 **(2)**
Maturation Science
Examines the human maturational process from conception through aging. Emphasis on recognition of appropriate neurological, cognitive, motor, and psychosocial characteristics related to various stages of growth, development, and maturation. Congenital, developmental, and age-related pathologies are presented. Corequisite: PHTH547.

PHTH540 **(2)**
Clinical Science Laboratory
Principles and practice of thermotherapy and cryotherapy procedures. Problem-solving approach to clinical decision making is integrated into the application of hydrotherapy, aquatic therapy, superficial and deep heat modalities, and cold modalities.

PHTH547 **(1)**
Maturation Science Laboratory
Development of clinical skills and reasoning used for evaluation of pediatric and geriatric populations. Maturational influences on therapeutic intervention during periods of growth/development, pregnancy, and aging. Corequisite: PHTH537.

PHTH630 **(3)**
Professional Seminar II
Provides interactive discussion between students, faculty, and clinicians for program review and evaluation, and also a public forum for presentation of graduate projects.

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)**
Clinical Rotation II—Neuro Rehab
This 6-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 an area of special interest. 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 **(4)**
Clinical Pathology—General Medicine
General medical, acute care, and post-operative patient-case scenarios or pathologies to facilitate the integration of previous learning with new knowledge. 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 **(5)**
Clinical Pathology—Neurology I
Patient-case scenarios, describing 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 **(3)**
Clinical Pathology—Neurology II
Small-group, problem-based learning course utilizes 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 **(4)**
Clinical Pathology—Orthopedics I
A small-group tutorial using patient case scenarios to facilitate learning and the acquisition of independent and collaborative learning skills. Development of clinical reasoning and decision making as they relate to orthopedic pathologies. Corequisites: PHTH674 and 684.

PHTH665 **(4)**
Clinical Pathology—Orthopedics II
Continuation of PHTH664 with emphasis on differential diagnosis and management of complex orthopedic pathologies. Corequisites: PHTH675 and 685.

PHTH671 **(3)**
Clinical Skills Laboratory—General Medicine
Helps students develop clinical reasoning and skills essential for physical-therapy care and management of the acute, general medical, and post-operative patient. General patient handling and maneuvering procedures along with the specific therapeutic procedures and protocols are taught. Corequisites: PHTH661 and 681.

PHTH672 **(3)**
Clinical Skills Laboratory—Neurology I
Assists students with the development of clinical skills and reasoning essential for the assessment and treatment of patients with neurological pathologies. Therapeutic procedures and protocols appropriate for this patient population are taught along with special considerations regarding patient safety. Corequisites: PHTH662, 682, and 692.

PHTH673 **(2)**
Clinical Skills Laboratory—Neurology II
Assists students in developing clinical skills and reasoning essential for assessment and treatment of pediatric patients. 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 **(3)**
Clinical Skills Laboratory—Orthopedics I
Helps students develop clinical skills and reasoning essential to the examination, evaluation, and physical therapy intervention of orthopedic patients. Skills include examination techniques, use of modalities, therapeutic exercise, soft tissue techniques, mechanical traction, and articular mobilization. Corequisites: PHTH664 and 684.

PHTH675 **(2)**
Clinical Skills Laboratory—Orthopedics II
Helps students develop clinical skills and reasoning essential to the assessment and treatment of complex orthopedic pathologies. Clinical examination and differential diagnostic skills along with current therapeutic procedures and protocols appropriate for this group of patients. Corequisites: PHTH665 and 685.

PHTH681 **(2)**
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 goods. Corequisites: PHTH661 and 671.

PHTH682 **(3)**
Clinical Issues Seminar—Neurology I
Presentation/discussion of comprehensive issues related to physical-therapy management of the patient with neurological dysfunction. Corequisites: PHTH662, 672, and 692.

PHTH683 **(1)**
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; 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
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 **(2)**
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 **(3)**
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 **(3)**
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, sports medicine, and current clinical administration issues.

PHTH691 **(3)**
Research I
Introduction to research methods and design; students develop critical reasoning skills necessary to read and evaluate current research literature. Issues related to sampling, control, validity, and reliability. Several parametric statistical procedures and the research proposal process.

PHTH692 **(2)**
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 advisers in preparation for completion of the research proposal document.

PROFESSIONAL ADVANCEMENT PROGRAM

PHTH507 **(3)**

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.

PHTH532 **(4)**
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.

PHTH533 **(4)**
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 mechanical dysfunctions.

PHTH539 **(4)**
Clinical Research for the Physical Therapist
Presents basic research concepts in a format appropriate to both consumers of research literature and clinicians planning to initiate research projects. Statistics are covered in a conceptual manner. Student activities include a literature review, critiquing research articles, and developing a research proposal ready for submission to the Human Subjects Review Board.

PHTH541 **(4)**
NAIOMT Level III: Advanced Upper Quadrant
Builds on the techniques learned in Level II and helps the student understand the kinetic chain inter-relationships of the upper quadrant. Integrates information generated in the assessment to understand how remote dysfunctions can be causual or contributory. Advanced techniques are demonstrated along with new material on temporo-mandibular-joint material and peripheral manipulation skills.

PHTH542 **(4)**
NAIOMT Level III: Advanced Lower Quadrant
Builds on the techniques learned in Level II and helps the clinician understand the kinetic chain inter-relationships 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.

PHTH543 **(4)**
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.

PHTH550 **(4)**
Clinical Application of Biomechanics
An advanced course, including practice and application, to enhance the understanding of the role of biomechanics in orthopedic injury causation and rehabilitation. Focuses on how anatomic structures react in an isolated and integrated fashion when placed under the influence of forces in both a static and dynamic environment.

PHTH561 **(2)**
Myofascial Manipulation: Level I
Introduces osteopathic concepts/ terminology, myofascial anatomy, theories regarding the neurophysiology and biomechanics of release techniques, the difference between direct and indirect techniques, with focus on direct shearing and deep direct techniques. Skills include total body gait analysis, palpation for myofascial binds/restrictions, and osteopathic shearing and rolfing structural integration techniques.

PHTH562 **(2)**
Myofascial Manipulation: Level II
Builds on Level I, progressing into higher level myofascial loading to treat joint dysfunctions; introduction to craniosacral-therapy concepts of transverse diaphragms and dural tube treatment, localized joint unwinding, and how to initiate the release response with both triplanar loading or unloading. Total body dynamic assessment is reinforced. Prerequisite: PHTH531.

PHTH571 **(2)**
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 re-education 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.

PHTH572 **(2)**
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 neuromeotor re-education exercises and options, and identifying and correcting vector(s) of traumatic injury. Prerequisite: PHTH541.

PHTH577 **(3)**
Sports Physical Therapy
Provides students with an understanding of the management of athletic injuries. Topics include sports medicine, pre-participation screening exams, field management of athletic injuries, designing conditioning programs, taping, equipment fit, sports nutrition, management of the female athlete, sports psychology, and common sports injuries.

PHTH578 **(3)**
Industrial Physical Therapy
Investigates orthopedic and sports physical-therapy principles applied to the industrial setting. Includes applied ergonomics, work conditioning and hardening, pre-employment and pre-placement screening, industrial injury prevention, objective functional capacity testing, inappropriate illness behavior, the industrial-medico legal system, industrial spinal-patient rehabilitation, and a practical ergonomic/lifting lab session. Develops clinical competence in evaluation techniques and intervention procedures.

PHTH580 **(3)**
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 **(4)**
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.

PHTH596 **(3)**
Closed Kinetic Chain Reaction
Reviews the biomechanics and neurophysiology involved in closed-chain function including the objective testing and documentation of functional performance. Students design and implement rehabilitation protocols based on closed-chain principles.

PHTH648 **(1-4)**
Workshop