

PHYSICAL THERAPY (PHTY)

PHTY 501. Gross Anatomy (Physical Therapy). 7 Hours.

Semester course; 4 lecture and 6 laboratory hours. 7 credits. Examines the structural and functional anatomy of the human musculoskeletal system through lecture and cadaver dissection. Develops understanding of fundamental facts and principles that apply to professional practice through lecture, dissection, radiographic examination and clinical correlation.

PHTY 502. Kinesiology. 4 Hours.

3 lecture and 2 laboratory hours. 4 credits. Introduces the student to the kinematics and kinetics of human movement. Emphasis is placed on osteokinematics, arthrokinematics and the structures that limit and/or guide movement.

PHTY 503. Applied Exercise Physiology. 3 Hours.

for Wellness and Health Promotion Semester course; 2 lecture and 2 laboratory hours. 3 credits. Restricted to students in the professional Doctor of Physical Therapy program. Integrates principles and practices of applied physiology, health promotion, wellness and adult fitness. Emphasizes the underlying physiology with assessing physical fitness and developing therapeutic exercise prescriptions which meet recommended guidelines for achieving and maintaining optimal physical fitness and health.

PHTY 505. Applied Microscopic Anatomy for Physical Therapy. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Examines the basic components of cells in terms of their structure and function. Cells and tissues of greatest importance to physical therapists are studied in detail, and their response to injury is explored. Reviews methods of studying cells.

PHTY 506. Functional Neuroanatomy. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Examines the basic structure and function of the nervous system with special emphasis on topics of greatest concern to physical therapists. Uses neurobiological approach to integrate the basic health sciences of neuroanatomy, neurophysiology and clinical neuroscience.

PHTY 508. Musculoskeletal Physical Therapy I. 6 Hours.

Semester course; 4 lecture and 4 laboratory hours. 6 credits. Teaches some of the basic evaluation methods and measurement procedures used by physical therapists in history taking and physical examination. Includes lecture, demonstration and practice in measurement of the length and girth of body parts, manual and mechanical muscle testing, joint range of motion, accessory motion testing, and palpation.

PHTY 510. Rehabilitation I. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Introduces basic clinical skills and procedures, including measurement of vital signs, patient lifting and moving techniques, progressive mobilization, medical asepsis and principles of bandaging. Introduces medical documentation, record keeping and professional communication. Introduces communication methods and skills appropriate for interaction with patients, families and colleagues.

PHTY 512. Health Care Systems. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Restricted to students in the professional Doctor of Physical Therapy program. Introduces students to issues in health care related to organization, finance, access and regulation of services for individuals, groups and communities. Provides a general overview of inter-relationships among health care consumers, providers, organizations, regulators and third-party payers. Discusses implications for public policy and legislative action. Critically reviews supplemental readings to illustrate key concepts and their relevance to the practice of physical therapy.

PHTY 520. Clinical Education I: Introduction to Clinical Education. 3 Hours.

Semester course; 1 lecture and 4 laboratory hours. 3 credits. Enrollment is restricted to Doctor of Physical Therapy students. Introduces the profession of physical therapy. Emphasizes professionalism, ethics, professional behaviors, physical therapy extenders role and individual differences that may impact patient care. Provides an introduction to the educational concepts that are related to personal growth and patient management. Includes an integrated clinical experience in local clinical facilities that is designed to introduce the student to physical therapy practice. Utilizes a variety of teaching strategies, including simulation-based learning, to allow students to develop interpersonal skills with patients, peers and other health care professionals while applying and practicing skills learned in the first professional year of education in a clinical setting.

PHTY 531. Evidence-based Practice Concepts. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Introduces concepts and principles of the research process including question, theory and hypothesis development, research design and methodology, and statistical reasoning and analysis. Discusses the basis of critical review of professional literature and determination of the relevance and applicability of research findings to specific patients with the goal of promoting evidence-based practice.

PHTY 537. Rehabilitation II. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Restricted to students in the professional Doctor of Physical Therapy program. Presents evaluation and treatment methodology for the acute care patient. Focuses on the rehabilitation phase of patient care for different patient diagnoses. Provides interprofessional opportunities with other health care professional students.

PHTY 540. Psychosocial Aspects of Physical Therapy. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Introduces the student to sociocultural and psychosocial characteristics of patient populations that impact the rehabilitation process. Addresses the patient and family in the health care system, including sexuality, impact of disability, grief processes, death and dying, and selected counseling techniques.

PHTY 601. Advanced Measurement Concepts. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Investigates the principles of measurement theory as applied to clinical practice. Reviews basic principles guiding electronic instrumentation and electromyography. Examines the theoretical bases for the examination and treatment approaches used in orthopedic physical therapy or neurologic physical therapy.

PHTY 603. Evidence-based Practice I. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Introduces concepts and principles of the research process including question, theory and hypothesis development, research design and methodology, and statistical reasoning and analysis. Introduces critical review of professional literature and determination of the relevance and applicability of research findings to specific patients with the goal of promoting evidence-based physical therapy practice. Teaches how to access and implement electronic search engines to locate and retrieve professional literature. Twelve lecture hours will be provided on site at the beginning of the semester; the remainder of the course will be distance-based.

PHTY 604. Evidence-based Practice II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHTY 603. Continuation of PHTY 603. Provides an advanced review of the concepts and principles of the research process and evidence-based practice. Focuses on skills needed to develop relevant clinical questions for specific patient scenarios, perform a critical appraisal of professional literature and determine the applicability of the research findings for patient management. Includes preparation of a publication-ready paper on a topic relevant to the student's practice interests. Course is entirely distance-based.

PHTY 605. Foundations for Pathokinesiology. 3,4 Hours.

Semester course; 3-4 lecture hours. 3-4 credits. A study of the principles that form a foundation for understanding pathokinesiology and therapeutic kinesiology. Integration of principles of motor development, control and learning with emphasis on abnormal motor behavior and its remediation.

PHTY 606. Therapeutic Kinesiology. 2-4 Hours.

Semester course; 1-3 lecture and 3 clinical hours. 2-4 credits. A study of motor behavior in both normal and pathological conditions. Reading and discussion of the basic literature of current neurologic approaches to therapeutic exercises and an integration of these concepts into a comprehensive model of human movement.

PHTY 609. Clinical Biomechanics. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Provides an opportunity to develop knowledge in sufficient depth to understand how selected biomechanical factors influence normal and pathologic human form and movement. Stresses validity and reliability of methods of evaluating musculoskeletal form and function.

PHTY 610. Physical Therapy Evaluation in the Direct Access Setting. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Covers critical physical therapy evaluation skills necessary for autonomous practice in the adult outpatient orthopaedic setting; recognition of the clinical manifestations of medical problems that may mimic mechanical neuromusculoskeletal seen by physical therapists and screening for medical referral. Through topic discussions, case presentations and self-paced tutorials, develops skills to screen for conditions that merit physician referral when practicing in the direct access setting. Eight lecture hours will be provided on site; the remainder of the course will be distance-based.

PHTY 611. Research Process. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Readings, discussions and reports on the current status of professional literature and validation of clinical practice, clinical administration and professional education. A model for professional development, the role of research in the validation process and the basis of research design are presented non-mathematically. Required of all advanced master of science degree students unless excused by the faculty.

PHTY 613. Evidence for Orthopaedic Practice. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: PHTY 603. Evidence-based medicine course for orthopedic physical therapy. Through presentations, topic discussions and case presentations students will acquire evidence on selected topics of the evaluation and treatment of musculoskeletal dysfunctions in physical therapy practice. Promotes development of skills needed for the acquisition, reading and interpretation of published studies in the area of orthopaedic physical therapy. The entire course is distance-based.

PHTY 614. Evidence for Neurologic Practice. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: PHTY 603. Evidence-based medicine course for neurologic physical therapy. Through Web-based presentations, topic discussions and case presentations, students will acquire evidence for selected topics related to the evaluation and treatment of neurologic dysfunctions in physical therapy practice. Promotes the development of skills in the acquisition, reading and interpretation of published studies in the area of neurologic physical therapy. The entire course is distance-based.

PHTY 615. Pharmacology (Physical Therapy). 1 Hour.

Semester course; 1 lecture hour. 1 credit. Restricted to students in the Professional Doctor of Physical Therapy program. Series of lectures on the integrated approach to the study of human disease and pharmacotherapeutics. Covers the pharmacological management of common disease states affecting physical function. Emphasizes the utilization of subjective and objective patient data for the assessment, monitoring and optimization of pharmacotherapy.

PHTY 616. Evidence of Tissue Healing and Therapeutic Modalities. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: PHTY 603. Distance-based course that focuses on current trends and topics of tissue healing including the effects of physical therapy interventions on healing tissues using an evidence-based approach. Reviews histology and cytology concepts relevant to clinical practice or necessary for interpreting scientific literature on the topic.

PHTY 617. t-DPT Gross Anatomy. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Focuses on musculoskeletal anatomy with high clinical relevance for physical therapists. Incorporates introductory material on diagnostic imaging of the spine and extremities. Self-directed distance learning modules will be augmented with a series of on-campus cadaver dissection laboratories over a four-day visit to campus.

PHTY 621. Biophysical Agents. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Examines the theoretical bases for and therapeutic application of thermal, mechanical and electrical agents. Emphasizes the physical and physiological effects, indications and contraindications for electrical current, diathermy, superficial heat and cold, massage, ultraviolet, traction, ultrasound, laser and compression therapy. Analyzes relative current scientific literature and uses laboratories for practice and clinical problem-solving.

PHTY 623. Cardiopulmonary Physical Therapy. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Applies principles of pathophysiology of the cardiovascular and respiratory systems; includes physical therapy assessment and treatment of patients with cardiac and respiratory disorders.

PHTY 624. Clinical Problem-solving I. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Restricted to students in the Professional Doctor of Physical Therapy program. Provides an advanced review of the concepts and principles of the research process and evidence-based practice. Focuses on skills needed to perform a critical appraisal of professional literature and to determine the relevance and applicability of research findings to a specific patient or series of patients based on information collected during the first summer clinical experience. Provides opportunity to develop oral patient case presentation skills.

PHTY 626. Lifespan I. 6 Hours.

Semester course; 9 lecture and laboratory hours. 6 credits. Restricted to students in the professional Doctor of Physical Therapy program. Covers models of typical motor, psychosocial, neurological and musculoskeletal development from birth through adolescence; models of neurologic dysfunction in developmental disabilities; principles of examination and evaluation in pediatrics; commonly seen diagnoses; and treatment planning for a pediatric population.

PHTY 627. Lifespan II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Discusses age related changes in physical structure, motor control and psychosocial/cognitive issues in humans from middle adulthood to the end of life. Emphasizes the geriatric population and the physical therapy management of problems with the integumentary system. Highlights the role of the physical therapist in making program modifications based on age related changes.

PHTY 629. Special Topics in Physical Therapy. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Provides an opportunity to pursue and present a topic of interest that is related to physical therapy evaluation and treatment.

PHTY 640. Neurologic Physical Therapy. 6 Hours.

Semester course; 4 lecture and 4 laboratory hours. 6 credits. Applies principles of motor development, control and learning to the evaluation and remediation of motor disorders. Critically surveys current theory and practice of neuromotor therapeutics.

PHTY 644. Orthotics and Prosthetics. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prepares the student to participate as a member of the professional prosthetic or orthotic clinic team, integrates material from other courses, and teaches basic skills in orthotic and prosthetic assessment, prescription, and training and performing initial and final prosthetic and orthotic checkouts.

PHTY 646. Clinical Medicine. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Covers topics in clinical medicine and the sciences relevant to the practice of physical therapy. Medical practitioners from the VCU Medical Center and surrounding areas participate.

PHTY 648. Musculoskeletal Physical Therapy II. 6 Hours.

Semester course; 5 lecture, 2 laboratory and 24 clinical hours. 6 credits. Examines principles and techniques used by physical therapists for the treatment of patients with orthopaedic disorders. Uses scientific evidence and theoretical rationale in a problem-solving approach to develop treatment plans for patients with orthopaedic musculoskeletal disorders. Provides opportunities for students to gain hands-on experiences with patients in a clinical setting.

PHTY 650. Clinical Education II. 8 Hours.

Semester course; 320 clock hours. 8 credits. Restricted to students in the Professional Doctor of Physical Therapy program. Eight-week, full-time clinical experience designed to develop competency in physical therapy evaluation and treatment. Teaches the use of sound scientific rationale and problem solving skills in aspects of patient care. Promotes the development of an independent professional through synthesis and utilization of advanced academic theory in evaluation and treatment. Encourages the exploration of interest areas in a variety of practice settings.

PHTY 651. Professional Issues in Physical Therapy. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Restricted to students in the Professional Doctor of Physical Therapy program. Discusses professional issues facing the modern physical therapy practitioner, including ethical decision making, state and national current physical therapy issues, and legislative efforts. Provides opportunity for advancing skills in educational techniques, assertiveness skills, conflict resolution, as well as preparation for employment via resume and portfolio writing and interview skills.

PHTY 654. Clinical Problem-solving II. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Restricted to students in the Professional Doctor of Physical Therapy program. Provides the opportunity to review, integrate and develop strategies using previously presented material and research to present an oral case study of a patient or patients from the clinical experience in the previous summer.

PHTY 660. Musculoskeletal Physical Therapy III. 1 Hour.

Semester course; .75 lecture and .5 laboratory hours. 1 credit. Prerequisites: PHTY 508 and PHTY 648. Synthesizes information from the prerequisite classes through case study examples, hands-on practice and lecture on the incorporation of musculoskeletal evaluation and treatment. Emphasizes clinical reasoning in determining individualized physical therapy interventions based off of a comprehensive physical therapy evaluation. Focuses on case study examples of complicated patient presentations to help better prepare students to treat patients with multiple co-morbidities and impairments. Highlights commonly seen movement pattern dysfunctions throughout the course to help students to both identify and treat regional interdependent impairments related to the patient's primary complaint.

PHTY 661. Administration and Management in Physical Therapy. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Restricted to students in the Professional Doctor of Physical Therapy program. Provides students with a basic understanding of operational issues related to physical therapy practice in a variety of settings. Topics include leadership, operational and business success measures, reimbursement, quality assurance, performance improvement, utilization review, risk management, documentation and marketing. Skill sets include, at an introductory level, supervision, delegation, hiring practices, budget development and analysis, peer review, outcomes measurement, and ethical decision making.

PHTY 670. Clinical Integration of Physical Therapy Concepts. 2 Hours.
Semester course; 2 lecture hours. 2 credits. Enrollment is restricted to students in the Doctor of Physical Therapy program. Uses a problem-based learning approach to challenge students to integrate knowledge and current literature to support clinical decisions related to patient case studies. Students will be asked to appraise examination findings to develop a PT evaluation, including diagnosis and prognosis, and design a treatment plan of care inclusive of implementation and progression. Students will facilitate group discussion related to the case scenarios to foster intraprofessional collaboration. As a capstone course, topics are selected annually to be comprehensive of the curriculum with a focus on increased medical complexity to advance student understanding for progression toward entry-level practitioner.

PHTY 674. Clinical Problem-solving III. 1 Hour.
Semester course; 1 lecture 1 credit. Restricted to students in the Professional Doctor of Physical Therapy program. Integrates material from D.P.T. courses with clinical research. Provides experience in writing individual case reports dealing in depth with the history, current status and problems in a given area of clinical specialization.

PHTY 676. Comprehensive Study of Physical Therapy Practice. 1 Hour.
Semester course; 1 lecture hour. 1 credit. Reviews topics in practice patterns of neuromuscular, musculoskeletal, cardiovascular, integumentary and professionalism relative to physical therapy practice. Prepares students for the national physical therapy examination.

PHTY 680. Clinical Education III. 12 Hours.
Semester course; 480 clinical hours. 12 credits. Twelve-week full-time clinical experience designed to allow the student to develop entry-level competence in physical therapy evaluation and treatment techniques. Includes the use of sound scientific rationale and problem-solving skills in all aspects of patient care. Promotes the development of an independent professional through synthesis and utilization of advanced academic theory in evaluation and treatment. Graded P/F.

PHTY 690. Physical Therapy Graduate Seminar. 16 Hours.
Semester course; 1 credit. Provides opportunity to develop knowledge and skills in evaluating published scientific literature related to physical therapy, developing researchable questions and orally presenting the material in a professionally appropriate manner.

PHTY 691. Special Topics in Physical Therapy. 1-4 Hours.
1-4 credits. Guided independent study of specific topics not discussed in courses or discussed in less detail in courses. Student's desired topic of study must be identified and approved prior to enrollment.

PHTY 692. Clinical Specialty Seminar. 0.5-3 Hours.
Semester course; 0.5-3 credits. Individual reports dealing in depth with the history, current status and problems in a given area of clinical specialization.

PHTY 693. Clinical Specialty Practicum. 1-9 Hours.
60 clock hours per credit. 1-9 credits. Concentrated clinical experience under the guidance of an approved preceptor.

PHTY 695. Clinical Education IV. 12 Hours.
Semester course; 480 clinical hours. 12 credits. Twelve-week full-time clinical experience designed to allow the student to develop entry-level competence in physical therapy evaluation and treatment techniques. Includes the use of sound scientific rationale and problem-solving skills in all aspects of patient care. Promotes the development of an independent professional through synthesis and utilization of advanced academic theory in evaluation and treatment. Graded P/F.

PHTY 798. Research in Physical Therapy. 1-15 Hours.
1-15 credits. Research in preparation for the advanced master of science degree thesis or doctoral dissertation.