PHYSICAL THERAPY —
M.S.R., D.P.T. (ENTRY LEVEL),
D.P.T. (POSTPROFESSIONAL),
D.S.C., PH.D.

Physical therapists are highly educated, licensed health-care professionals who provide services to patients/clients who have impairments, disabilities, or changes in physical function and health status as a result of injury, disease, or other causes.

Physical therapists teach patients how to prevent or manage their condition so that they will achieve long-term health benefits. They examine each individual and develop a plan, using treatment techniques to promote the ability to move, reduce pain, restore function, and prevent disability. In addition, physical therapists work with individuals to prevent the loss of mobility before it occurs by developing fitness- and wellness-oriented programs for healthier and more active lifestyles.

Physical therapists provide care for people in a variety of settings, including hospitals, private practices, outpatient clinics, home-health agencies, schools, sports and fitness facilities, work settings, and skilled nursing facilities. State licensure is required in each state in which a physical therapist practices.

Within the Department of Physical Therapy, in addition to the Associate in Science degree (PTA) found in the previous section of the Catalog, the program options include:

- postprofessional Master of Science in Rehabilitation
- entry-level Doctor of Physical Therapy
- postprofessional Doctor of Physical Therapy
- Doctor of Science
- Doctor of Philosophy

Professional association

Students and graduates are eligible for membership in the American Physical Therapy Association (APTA). The objective of the association is to foster development and improvement of service and education. This organization grants student membership at a nominal cost to students of approved schools. The student is required to become a member of this association while in the program and is encouraged to read the journal and attend the APTA-sponsored meetings.

Professional registration

Satisfactory completion of the entry-level D.P.T. degree requirements qualifies the student to sit for all state licensure examinations. Information about the state registries of physical therapists can be obtained at the office of the department chair. All states require that a physical therapist pass the national qualifying examination for licensure to practice. California application form and fee are submitted to the Physical Therapy Board of California, 2005 Evergreen Street, Suite 1350, Sacramento, CA 95815; Web site: <http://www.ptbc.ca.gov/>.

Courses

PHTH 501. Neurology I. 2 Units.
Physical therapy management of individuals with balance and vestibular disorders resulting in impairments, functional limitations, and disabilities. Emphasizes the application and integration of theoretical constructs, evidence-based practice, examination, evaluation, diagnosis, prognosis, intervention, and outcomes measurement.

PHTH 502. Neurology II. 3 Units.
Physical therapy management of individuals with neurological disorders (including stroke, traumatic brain injury, multiple sclerosis, Parkinson’s disease, Guillain-Barre syndrome, and amyotrophic lateral sclerosis) resulting in impairments, functional limitations, and disabilities. Emphasizes the application and integration of theoretical constructs, evidence-based practice, examination, evaluation, diagnosis, prognosis, intervention, and outcomes measurement.

PHTH 503. Neurology III. 3 Units.
Physical therapy management of individuals with spinal cord injury and amputations resulting in impairments, functional limitations, and disabilities. Emphasizes the application and integration of theoretical constructs, evidenced-based practice, examination, evaluation, diagnosis, prognosis, intervention, and outcomes measurement.

PHTH 506. Exercise Physiology. 3 Units.
Increases knowledge and understanding of human physiology and the adaptations that occur during exercise; as well as understanding of how the body responds to acute and chronic exercise during physical therapy intervention. Emphasizes metabolic systems; as well as circulatory, respiratory, and neuromuscular responses to the physical stress of exercise. Stresses understanding of body fat analysis and the risk of disease in the client when obesity is present. Increases understanding of the interactions of metabolism, circulation, and structural adaptations in response to exercise and training when therapeutic interventions are needed. Applies tests and measures to concepts, along with applications of exercise prescriptions.

PHTH 508. PT Communication and Documentation. 2 Units.
Introduces principles and dynamics of professional communication. Emphasizes basic skills needed in a clinical setting, including but not limited to the following: evaluations, progress notes, discharge summary, workers compensation, prescriptions, patient interviews, letters of justification, electric formats, and legal considerations related to all aspects of the above.

PHTH 509. Physical Therapy Modalities. 3 Units.
Introduces fundamental principles, physiological effects, and application techniques in the use of physical therapy modalities. Physical agents—including thermotherapy, cryotherapy, ultrasound, and electrotherapy procedures. Manual modalities—including basic massage techniques, myofascial and trigger point release. Lecture and laboratory.
PHTH 510. Kinesiology. 3 Units.
Functional anatomy of the musculoskeletal system. Analyzes and applies the biomechanics of normal and pathological movement of the human body. Includes introduction to palpation techniques for bone, ligament, and muscle. Lecture and laboratory.

PHTH 511. Clinical Orthopaedics. 2 Units.
Presents the basis for the physical therapist’s management of patients with functional impairments stemming from orthopaedic pathologies associated with all body regions. Introduces and considers the components of patient/client management— including examination, evaluation, diagnosis, prognosis, intervention, and outcomes. Includes lectures by orthopaedic surgeons emphasizing postoperative rehabilitation to enhance understanding of surgical procedures utilized in the management of the orthopaedic patient.

PHTH 512. Clinical Psychiatry. 2 Units.
Introduces mental and personality disorders. Reviews abnormal behaviors commonly found in a clinical setting.

PHTH 513. Therapeutic Procedures. 3 Units.

PHTH 514. Manual Muscle Testing. 3 Units.
Methods of evaluating muscle strength and function using specific and gross manual muscle tests. Integrates manual muscle testing with other aspects of patient care. Live patient demonstrations and discussion regarding each patient. Lecture, demonstration, and laboratory.

PHTH 517. Movement Science. 2 Units.
An integrative approach to movement impairment and neuromuscular approaches in the evaluation and management of musculoskeletal pain syndromes. Identifies clinical reasoning and examination of movement patterns. Extensive laboratory practice with patient/case studies.

PHTH 518. Aspects of Health Promotion. 2 Units.
Dynamics of physical therapy involvement in health promotion for the individual and the community. Factors in the promotion of a healthy lifestyle, including cardiovascular enhancement, stress reduction and coping mechanisms, nutritional awareness, weight management, and substance control. Students design and implement community-based health education program.

PHTH 519. Locomotion Studies. 3 Units.
Develops competencies in the identification and evaluation of normal and abnormal gait patterns, progressing to development of treatment programs. Includes physical therapy management of prothetic and orthotic devices and their assistance with gait.

PHTH 521A. Orthopaedics 1A. 3 Units.
Discusses physical therapy examination, evaluation, and interventions relevant to the clinical management of musculoskeletal conditions of the upper extremities. Presents instruction related to orthopaedic physical therapy interventions—including joint mobilization, hand splinting, and other selected manual techniques for specific upper extremity musculoskeletal conditions. Utilizes lecture, laboratory, and case studies to develop and integrate these concepts.

PHTH 521B. Orthopaedics 1B. 3 Units.
Students further develop concepts of examination, differential diagnosis, prognosis, and interventions that are expanded to patients with musculoskeletal conditions of the lower extremities. Utilizes lecture, laboratory, and case studies to develop and integrate these concepts.

PHTH 522. Orthopaedics II. 3 Units.

PHTH 523. Orthopaedics III. 3 Units.
Evidence-based theory of lumbar pelvic, lumbar and thoracic spine examination, evaluation, and physical therapy intervention. Expanded principles of functional anatomy, tissue and joint biomechanics, pathology, and treatment. Differentiates etiology of lumbar, lumbopelvic, and thoracic pain.

PHTH 525. General Medicine. 3 Units.
An understanding of medical and surgical disorders for the physical therapist. Basic pathology and/or etiology and clinical manifestations. Medical treatment for conditions within selected specialties of: endocrinology, arthritis, oncology, and integumentary management.

PHTH 526A. Cardiopulmonary I. 2 Units.
Identifies and explains anatomy and physiology of the cardiovascular system as it applies to physical therapy patient management. Discusses the medical and PT management of patients diagnosed with various cardiac diseases and complications. Identifies the disease process—including definition, etiology, pathophysiology, clinical presentation and clinical course of CHF, ischemic heart disease and acute coronary syndrome, and various cardiovascular diseases. Analyzes and examines ECGs of various forms, with basic interpretation. Demonstrates and provides rationale for utilization of various examination techniques for patients with heart disease in an effort to establish a PT diagnosis, prognosis, and plan of care. Identifies the goals and outcomes of cardiovascular rehabilitation. Includes lecture and laboratory.

PHTH 526B. Cardiopulmonary II. 2 Units.
Student identifies and explains the normal anatomy and physiology of the pulmonary system as it applies to physical therapy management; discusses medical and PT management of patients diagnosed with various pulmonary diseases and complications; and analyzes arterial blood gases in a systematic manner, showing how they relate to tissue and ventilatory processes. Student discusses and demonstrates understanding of pulmonary function test for obstructive and restrictive diseases; demonstrates and provides rationale for utilization of various examination techniques for patients with pulmonary disease in an effort to establish a PT diagnosis, prognosis, and plan of care; and identifies the goals and outcomes of pulmonary rehabilitation. Lecture and laboratory included.

PHTH 527. Scientific Foundations for Therapeutic Exercise. 2 Units.
Analyzes physical, mechanical, and soft-tissue biomechanical considerations in the formulation of exercise prescriptions. Considers the neurophysiological basis of motor control and motor learning acquisition. Selects exercise modes and dosage for treatment of patients with musculoskeletal and neurological disorders and for the nonpathological individual.

PHTH 528. Therapeutic Exercise I. 2 Units.
Introduces the principles and foundational concepts of therapeutic exercise. Includes passive ROM, stretching exercises, resistance training, aerobic conditioning, and aquatic rehabilitation. Introduces the Nagi and ICF disablement models to assist the student in selecting appropriate therapeutic exercise. Lecture and laboratory.

PHTH 528A. Therapeutic Exercise II. 2 Units.
Provides rationale for utilization of various examination techniques for patients with surgical conditions in an effort to establish a PT diagnosis, prognosis, and plan of care; and identifies the goals and outcomes of surgical rehabilitation. Lecture and laboratory included.
PHTH 530. Therapeutic Exercise II. 3 Units.
Expands the concepts learned in PHTH 528 Therapeutic Exercise I. Students learn to formulate and implement exercise prescriptions based on impairments and protocols. Uses case studies to design treatment progressions for the extremities. Emphasizes spinal stabilization approaches for the axial skeleton. Lecture and laboratory.

PHTH 532. Biostatistics I. 2 Units.
Fundamental procedures of analyzing and interpreting data. Sampling, probability, descriptive statistics, normal distribution, sampling distributions and standard error, confidence intervals and hypothesis testing, power, effect size. Introduction to epidemiological measures to estimate risk and select measures of clinical improvement.

PHTH 534. Soft Tissue Techniques. 2 Units.
Physical therapy evaluation and treatment-planning strategies for individuals with orthopedic dysfunction primarily related to soft tissue injury resulting in pathology, impairments, functional limitations, and disabilities. Emphasizes laboratory hands-on application and integration of theoretical constructs, evidenced-based practice, examination, evaluation, intervention, and measurement of outcomes.

PHTH 540. Concepts of Acute Care. 2 Units.
Comprehensively familiarizes students with the various procedures, equipment, lines and tubes, treatment, and other factors involved in treating adult and pediatric patients in the acute care setting. Includes case studies utilizing various medications and reactions that the physical therapist may encounter during treatments in acute care. Covers such settings as ICU, NICU, and CCU using the most current research on mobilization and improving function. Identifies the roles of multidisciplinary team members managing critical care patients.

PHTH 555. Differential Diagnosis. 2 Units.
Emphasizes information gathering from history taking, review of systems, and directed questioning, combined with a focused examination to establish a working diagnosis. Uses a hypothetico-deduction strategy to minimize misdiagnosis and teach problem solving—helping students develop a working list of all possible causes of symptoms, including those from mechanical and visceral origins. Emphasizes clinical pattern recognition for both musculoskeletal and nonmusculoskeletal disorders. Teaches strategies to differentiate between musculoskeletal and nonmusculoskeletal disorders. Highlights knowledge and skills related to screening for medical pathology in patients with musculoskeletal complaints of the lumbar spine, pelvis, lower extremities, thoracic spine, shoulder girdle, and upper extremities.

PHTH 557. Life Span Studies I: Infant through Adolescent. 3 Units.
Sequential human development from neonate through adolescence, as applied to normal and abnormal neurological development. Includes concepts of prenatal and postnatal care, delivery, and neonatal assessment; developmental theories, infant reflex testing, and developmental milestones of the infant, toddler, child, and adolescent. Incorporates the interrelationship of the physical, perceptual, and motor components in treatment of the neurologically disabled patient.

PHTH 558. Life Span Studies II: Developmental Disabilities. 3 Units.
Discussion and demonstration of physical therapy diagnosis, assessment, and case management of clients with developmental disabilities—such as cerebral palsy, spina bifida, muscular dystrophy, and various other developmental disorders. Includes presentation and demonstration of pediatric NDT, sensory integration, spasticity management, and adaptive equipment options; as well as writing realistic, measurable objectives. Includes laboratory demonstrations.

PHTH 559. Life Span Studies III: Geriatrics. 2 Units.
Overview of the normal and pathological changes seen during the aging process as related to physical therapy. Includes theories and demographics of aging, physiological and psychosocial changes, principles of geriatric rehabilitation, pharmacology, orthopedic considerations, fall risk and fall prevention.

PHTH 561. Physical Therapy Administration. 4 Units.
Principles of organization and administration in health-care delivery. Multidisciplinary approach to patient management and patient-therapist relations. Administration of physical therapy services. Professionalism, medicolegal considerations, supervision and training of support personnel. Departmental design and budgetary considerations.

PHTH 563. Scientific Inquiry I. 2 Units.
Uses a team-based learning approach to introduce students to research terminology, methodology, and skills needed to participate in evidence-based physical therapy practice. Employs practical readiness assurance tests, team application exercises, and group discussions to provide students an opportunity to immediately apply concepts of research methodology. Includes development of research questions, hypotheses, study designs, sampling techniques, study variables, and measurement; as well as reliability, validity, and statistics in the analysis of research literature and evidence.

PHTH 564A. Scientific Inquiry IIA. 1 Unit.
Provides students experience in the search, application, and integration of evidence to guide physical therapy practice, commonly known as evidence-based physical therapy practice (EBPTP). Students develop searchable questions, determine and use appropriate databases for searching the best evidence, critically appraise evidence, integrate evidence into practice, and evaluate effectiveness of evidence in preparation for writing a systematic review.

PHTH 564B. Scientific Inquiry III. 1 Unit.
Students submit a written systematic review of the evidence gathered and appraised in PHTH 564 Scientific Inquiry II – A. The evidence-based physical therapy practice experience culminates in a formal oral presentation of the findings to an audience of faculty and peers.

PHTH 567. Pain Science. 2 Units.
Integrates conceptual frameworks pertinent to the clinical transitioning from acute to chronic pain. Presents functional connectivity brain patterns related to various “pain signatures” of the brain. Reviews functional MRI pain research as it relates to clinical presentations of acute pain, chronic pain, neuropathic pain, and pain-prone personality disorders. Utilizes a proposed classification system for identifying chronic pain patients and introduces counseling management strategies intended to match the particular chronic pain group. Integrates clinical reasoning throughout the entire course, allowing students to draw upon clinical reasoning skills to help navigate management of the patient with acute and chronic pain.

PHTH 571. Physical Therapy Practicum I. 1 Unit.
A two-week (40 hours/week), supervised clinical experience for Doctor of Physical Therapy (D.P.T.) students done in an affiliated clinic. Introduces students to a variety of physical therapy practice settings and allows them to begin applying and utilizing physical therapy clinical and professional skills learned during the first year of the D.P.T. curriculum.
PHTH 572. Physical Therapy Practicum II. 2 Units.
A four-week (40 hours/week), supervised clinical experience for Doctor of Physical Therapy (D.P.T.) students done in an affiliated clinic at the end of the second year of the D.P.T. curriculum. Promotes integration of the physical therapist education curriculum into clinical practice; and allows students to apply knowledge and skills learned in areas of orthopedics, neurology, and general medicine to direct patient/client management in a clinical setting.

PHTH 573. Physical Therapy Practicum III. 1.5 Unit.
A three-week, full-time (forty hours/week) clinical education assignment done in an affiliated clinic, with an emphasis in any of a variety of settings: acute care, outpatient care, neurorehabilitation, orthopaedics, geriatrics, pediatrics, sports medicine, and preventive care/wellness, etc. The third of three practicums required, scheduled at the beginning of the Summer Quarter of the third academic year. Full-time supervision by a licensed physical therapist required. Activities include direct patient care, team conferences, demonstrations, special assignments, and observation.

PHTH 575. Orthopaedics IV. 1 Unit.
A three-quarter course that integrates examination procedures taught in the orthopaedic curriculum. Culminates in a comprehensive laboratory practical that includes the five elements of patient/client management, as described in the Guide to Physical Therapy Practice: examination, evaluation, diagnosis, prognosis, and intervention.

PHTH 701A. Physical Therapy Affiliation IA. 4 Units.
Seven-week clinical assignment to be completed during the third year in affiliated clinical settings. Emphasizes a variety of clinical settings: acute care, rehabilitation, orthopaedics, geriatrics, and pediatrics. Forty clock hours per week of supervised clinical experience, program integrative special assignments, in-services, lectures, demonstrations, and conferences. Student’s overall performance facilitated and assessed by the academic coordinators of clinical education, with input and feedback received from clinical instructors who provide direct instruction and provide documented feedback utilizing a standardized assessment tool. Student receives a grade for Affiliation IA upon completion of Affiliation IB (PHTH 701B).

PHTH 701B. Physical Therapy Affiliation IB. 1 Unit.
Three-week clinical assignment to be completed during the third year in affiliated clinical settings. Completes PT Affiliation IA without interruption in the clinical schedule. Emphasizes a variety of clinical settings: acute care, rehabilitation, orthopaedics, geriatrics, and pediatrics. Forty clock hours per week of supervised clinical experience, program integrative special assignments, in-services, lectures, demonstrations, and conferences. Student’s overall performance is facilitated and assessed by the academic coordinators of clinical education, with input and feedback by the clinical instructors who provide direct instruction and documented feedback utilizing a standardized assessment tool. Student receives grade for Affiliation IA and IB upon completion of Affiliation IB.

PHTH 702. Physical Therapy Affiliation II. 5 Units.
Eleven-week clinical assignment to be completed during the third year in affiliated clinical settings. Emphasizes a variety of clinical settings: acute care, rehabilitation, orthopaedics, geriatrics, and pediatrics. Forty clock hours per week of supervised clinical experience, program integrative special assignments, in-services, lectures, demonstrations, and conferences. Student’s overall performance facilitated and assessed by the academic coordinators of clinical education, with input and feedback from clinical coordinators who provide direct instruction and provide feedback utilizing a standardized assessment tool. Expectation for clinical performance higher than expected for PHTH 701A and B. Students must satisfactorily complete PHTH 701 A and B before proceeding to PHTH 702.

PHTH 703. Physical Therapy Affiliation III. 5 Units.
Nine-to-ten-week clinical assignment to be completed during the third year in affiliated clinical settings. Emphasizes a variety of clinical settings: acute care, rehabilitation, orthopaedics, geriatrics, and pediatrics. Forty clock hours per week of supervised clinical experience, program integrative special assignments, in-services, lectures, demonstrations, and conferences. Student’s overall performance is facilitated and assessed by the academic coordinators of clinical education, with input and feedback received from clinical coordinators who provide direct instruction and provide documented feedback utilizing a standardized assessment tool. Expectation for clinical performance is higher than expected for PHTH 703. Students must satisfactorily complete PHTH 702 before proceeding to PHTH 703.

PHTH 731. Advanced Orthopaedic Studies. 3 Units.
Specialty track that provides opportunity to pursue, in greater depth, various topics related to current trends in orthopaedic physical therapy; and to develop advanced clinical skills, where appropriate.

PHTH 732. Advanced Neurologic Studies. 3 Units.
Specialty track that provides opportunity to pursue, in greater depth, various topics related to current trends in neurologic physical therapy; and to develop advanced clinical skills, where appropriate.

PHTH 733. Advanced General Medicine Studies. 3 Units.
Specialty track that provides opportunity to pursue, in greater depth, various topics related to current trends in general medicine physical therapy; and to develop advanced clinical skills, where appropriate.

PHTH 736. Residency Level Clinical Experience. 1 Unit.
Clinical mentorship under the supervision of a master clinician. Didactic instruction that draws upon a variety of strategies, including case reviews, 1:1 patient mentoring, experiential video analysis and feedback, activities that involve scientific inquiry, and interpretation of the literature and/or clinical experiences.