HAY
Physical Therapy

HAY 500: Neuroscience for Physical Therapy
Presents an integrated approach to the general principles of organization and function of the autonomic, peripheral and central nervous system. Presents principles in a systems approach to neuroscience. Follows the anatomy of a system, its physiology, pathophysiology and clinical relevance to the physical therapist. Introduces clinical topics as they relate to neuroscience including neurological testing; control of posture and balance; pain; muscle tone and spasticity; feedback versus feedforward control; reflex versus voluntary control; control of reaching and locomotion; perception and learning. Engages students in discussions identifying variant and invariant characteristics from one system to another and how systems work. Prerequisites: First Year Summer Courses 4 credits.

HAY 501: Growth and Development Across the Life Span
Provides students with foundational knowledge of typical human development. Examines developmental sequences with emphasis on biophysical changes, motor skills, cognition, and psychosocial issues across the lifespan. Discusses the impact of social, cultural, and environmental differences on typical development. Integrates didactic information with observation experiences in order to prepare them for future coursework that requires application of these skills to the atypical population. Prerequisites: First Year Courses 3 credits.

HAY 502: Psychosocial Aspects of Disability
Examines the psychological and social factors that directly or indirectly affect an individual with a disability. Topics include identification of pre-morbid factors that contribute to the adjustment or responses to disability; impact of disability on family roles; the effects of pain on the individual; the influence of culture and spirituality on individual and family expectations of the health care system; and the economic, sexual, and societal aspects of disability. Explores the interactions of the individual with disability within the community. Focuses on concerns of the individual beyond physical rehabilitation. Topics include mental health disorders; motivation and adherence; humor in medicine; terminal illness; substance abuse; eating disorders; self-injurious behavior; and interpersonal abuse. Emphasizes the utilization of psychosocial information in the establishment of the plan of care for patients across the life span. Prerequisite: Second Year Fall Courses 2 credits.

HAY 504: Neurological Physical Therapy I
The first of a three course series designed to prepare second year physical therapy students to evaluate and treat patients with neurological dysfunction during their clinical experiences. Prepares students to examine, assess, and establish problem lists for individuals with various neurological disorders. Examines fundamental testing and assessment skills for sensation, musculoskeletal function, tone, reflexes, coordination, motor control, balance, postural stability, and function. Students will gain experience choosing appropriate outcome measures and gain competence in performing these measures. Justification for clinical decisions will be highlighted throughout. Prerequisites: First Year Courses 2 credits.

HAY 505: Neurological Physical Therapy II
The second of a three course series designed to prepare second year physical therapy students to evaluate and treat patients with neurological dysfunction during their clinical experiences. Fundamental assessment skills will include: PNF, bed mobility and trunk control, advanced gait, and motor control of the extremities. Introduces various treatment approaches and integrates approaches to create a comprehensive and patient-centered plan of care. Skills will be developed through role playing, videotape analyses, and clinical patient experiences. Lab experiences will require written and verbal justification for student clinical decisions. Prerequisites: Second year summer courses 2 credits.

HAY 506: Neurological Physical Therapy III
The last of a series of three courses designed to prepare second year physical therapy students to evaluate and treat patients with neurological dysfunction during their clinical experiences. Offers continued practice and synthesis of examination data during the evaluation process, however, major emphasis is to develop and implement appropriate intervention strategies based on the best available evidence for people with neurological or neuromuscular disorders. Prerequisites: Second Year Fall Courses 4.5 credits.

HAY 507: Orthopedic Physical Therapy I
The first of three courses within the musculoskeletal sequence. Explores neuromusculoskeletal concepts within the patient/client management model. Introduces orthopedic physical therapy practice emphasizes clinical decision-making and problem solving through on-going hypothesis generation and testing. Provides content that students will apply to paper cases as they establish goals, organize subjective and objective exams, and practice screening skills. Information that is obtained during typical physical therapy exams is utilized in discussions to practice the evaluation process including ruling out red flags, identifying yellow flags, establishing a physical therapy diagnosis, developing a problem list, and generating an intervention plan. Prerequisites: First Year Courses 2 credits.

HAY 508: Orthopedic Physical Therapy II
The last of three courses within the musculoskeletal sequence. Explores neuromusculoskeletal concepts within the patient/client management model. Orthopedic physical therapy practice of the upper extremities and spine is explored with an emphasis on clinical decision-making and problem solving through ongoing hypothesis generation and testing. Asked to apply content to paper cases and establish goals, organize subjective and objective exams, and practice screening skills. Information that is obtained during typical physical therapy exams is utilized in discussions to practice the evaluation and intervention process including ruling out red flags, identifying yellow flags, establishing a physical therapy diagnosis, developing a problem list, generating and implementing an intervention plan. Prerequisites: Second Year Fall Courses 4 credits.

HAY 509: Pediatric Physical Therapy
Emphasizes the study of atypical movement patterns in children. Presents developmental and long-term effects of neuromuscular and musculoskeletal dysfunction as they relate to movement. Students learn examination and interventions for subtle and complex movement dysfunctions resulting from a variety of musculoskeletal and neuromuscular diagnoses, conditions, and syndromes including but not limited to preterm birth,
torticollis, developmental hip dysplasia, OBPI, cerebral palsy, Down syndrome, autism, developmental coordination disorder (DCD), Spina Bifida and Duchenne Muscular Dystrophy. Explores strategies for working with children presenting at the opposite ends of functional abilities (severe/multiple vs minimal handicapping conditions. Addresses the role of the physical therapist during transitions between delivery settings. Prerequisite: Second Year Fall Courses

4.5 credits,

HAY 512: Prosthetics and Orthotics in Physical Therapy
Provides a theoretical knowledge base as a framework for clinical intervention when providing treatment using orthotic and/or prosthetic devices for clients across the lifespan who present with amputations, diabetes, neurological disorders, and pathokinesiologic deficits of the musculoskeletal system. Presents course materials that reinforces course work from earlier basic science courses. Students will be expected to recall pertinent content from previous courses, apply that information in a clinically relevant manner, and critically solve problems covering client examination, evaluation, diagnosis, and treatment when presented with a variety of clinical scenarios. Prerequisites: First Year Fall Courses

3 credits,

HAY 513: Orthopedic Physical Therapy II
The second of three courses within the musculoskeletal sequence. Explores neuromusculoskeletal concepts within the patient/client management model. Evaluation skills are sharpened as clinical decision-making and differential physical therapy diagnosis, prognosis and intervention are introduced in the framework of neuromusculoskeletal dysfunction. These general skills are then applied to various neuromusculoskeletal dysfunctions of the lower extremity. Functional anatomy, including the osteokinematics, arthrokinematics, myology and neurology of the lower extremity are explored as they relate to surgical and nonsurgical neuromusculoskeletal conditions. Prerequisites: Second Year Summer Courses

2 credits,

HAY 515: Foundations of Kinesiology
Explores the essential topics of Kinesiology and establishes a basis for future study of applied kinesiology. Introduces the study of normal human movement including topics such as movement description, muscle function, and biomechanics.

1 credit,

HAY 517: Exercise Physiology
Provides a general background in exercise physiology. Topics include an introduction to energy systems and how they are recruited during different forms of exercise; an introduction to cardiopulmonary physiology and the response to exercise challenge; and the monitoring of cardiorespiratory and temperature vitals. Students will be expected to gain a general understanding of skeletal muscle physiology and recruitment, describe aerobic and anaerobic training effects, and understand exercise stress testing and prescription. Prerequisites: First Year Summer Courses

1 credit,

HAY 518: Foundations of Exercise and Movement in PT
Presents an introduction to the fundamental principles of strength and flexibility. Fundamentals of muscle and connective tissue function from microstructure to macrostructure are considered in health and dysfunctional states through the life span. These basic principles will be expanded to explore the concept of myofascial mobility, extensibility and length. Explores muscle function including strength, muscle endurance, power, and control throughout the trunk and extremities. Students will combine the skills learned in Kinesiology with those learned in this course to begin the process of examination, evaluation and designing intervention programs for the movement dysfunction. Prerequisites: First Year Summer Courses

3.5 credits,

HAY 519: Kinesiology
Explores the kinetics and kinematics of normal, purposeful human movement. Integrates knowledge of human anatomy, physiology and biomechanics as it applies to movement of the extremities and spinal column. Includes evaluation procedures such as manual muscle testing, measurement of joint range of motion, and gait assessment. Direct patient contact is scheduled. Prerequisites: First Year Summer Courses

4.5 credits,

HAY 524: Health, Wellness and Prevention in Physical Therapy
Presents issues related to promotion of health and wellness and concepts of integrative, complementary and preventive medicine. Examines and integrates general fitness, nutrition and complementary medicine into exercise prescriptions for the following chronic diseases and conditions: cardiovascular disease; endocrinology and metabolic disorders; pulmonary disease; oncology; disorders of the bones and joints; spinal cord injury; stroke; depression; and intellectual disability. Based upon the findings of screening and individual client goals, students will develop, implement and assess the effectiveness of an individualized wellness program. Prerequisites: Second Year Courses

2 credits,
Emphasizes patient care in the acute care environment. Prepares students for functional mobility training for patients in all settings. Applies the laws of physics to body mechanics in order to safely and effectively assist patients with bedside functional mobility training. Prepares students to effectively guard patients during ambulation and engage in gait training with assistive devices. Students will perform initial evaluations, create physical therapy plans of care, and use vital signs and lab data to guide clinical decision making. Engages students in simulation-based learning experiences and integrated clinical experiences with patients of varying diagnoses and complexity to prepare them for their first clinical education experience. Prerequisite: First Year Fall Courses

4 credits,

HAY 528: Clinical Medicine and Pharmacology II
Continues to build a critical foundation for Clinical Education I and the remainder of the professional curriculum by establishing a foundation in medicine and differential diagnosis. Students are expected to utilize the concepts of evidence-based practice, the ICF model of disablement, and the Patient/Client Management Model as frameworks for clinical decision-making. In-depth exploration of frequently encountered health conditions across the life span will be the continuing format. Presents epidemiology, pathophysiology, etiology, clinical characteristics with subsequent medical, pharmacological and surgical management of each health condition. Students will continue to build a repertoire of medical terminology, medical abbreviations and clinical outcome measures to promote efficient and effective chart review and documentation. Prerequisites: First Year Fall Courses

5 credits,

HAY 534: Motor Learning and Motor Control
Establishes a context for the major explanatory concepts applied to the issues of coordination and skill and learning. Foundational material from Neuroscience will support the application and theory addressed throughout the course. Uses academic rationalization and cognitive processing philosophies to develop and refine intellectual processes. Students learn from historical perspectives of motor control to develop skills necessary to pose and solve problems, to infer, to hypothesize, and to locate needed resources for theoretically sound clinical judgments. Students read original research papers and current literature pertaining to motor learning, motor programs and dynamic pattern theory. Student will analyze papers examining loss of function related to disease or injury. Prerequisite: First Year Fall Classes

3 credits,

HAY 543: Integumentary and Vascular Physical Therapy
Presents principles of skin anatomy and physiology, normal and abnormal wound healing, and the anatomy and role of both peripheral vascular system and lymphatic systems. Discusses physical therapy assessment and interventions. Includes focused practice in myofascial mobility and extensibility, lymphedema management, wound assessment, debridement, wound dressing choices, and other available modalities. Engages students in practical skills during interactive lab sessions to demonstrate competence and integrate information in a clinically relevant manner to provide a framework for future safe and effective intervention with clients. Prerequisite: First Year Fall Courses

2 credits,

HAY 544: Biophysical Agents in Physical Therapy
Introduces various physical, mechanical and electrotherapeutic biophysical agents. Covers the role of such agents in the management of impairments and pathology involving the musculoskeletal, neuromuscular, cardiopulmonary, and integumentary systems. Explores evidence-based informed decision making for each of these agents through the analysis of appropriate literature. Prerequisites: First Year Fall Courses

2 credits,

HAY 545: Ethics and Health Care for Physical Therapists
Provides an overview of the ethics of health care in a rapidly changing society. Explores ethical issues surrounding health care changes and public health policy. Includes an overview of ethics within patient education and discusses the professional code of ethics and standards. Students will learn how to approach ethical dilemmas using theoretical frameworks and decision-making processes. Introduces the student to the ethics within physical therapy and other health care professions through the use of case studies. Includes a review of classic cases in health care ethics, involving issues such as euthanasia and organ transplants from an ethical, legal and historical perspective. Prerequisites: Second Year Courses

2 credits,

HAY 552: Research Methods for Physical Therapists
First of three courses designed to prepare students to search for and critically appraise scientific literature as well as understand the fundamentals of research methods, design, and statistics. Includes principles of evidence based practice, use of electronic data bases to search for evidence, research and measurement reliability and validity, research design, descriptive statistics, statistical inference, tests for experimental comparison, correlation, regression, and nonparametric tests. Addresses the relationship between statistics and research design by introducing relevant research articles in the healthcare field. Prerequisites: First Year Fall Courses

3 credits,

HAY 557: Introduction to Evidence Based Practice
Second of three courses that introduce the concepts of evidence informed decision making by exploring the evidence based practice (EBP) model and the five steps of the EBP process. Builds upon the integration of research concepts that allow for the critical analysis of varying levels of research literature. Review of physical therapy literature will be used as a tool to integrate critical inquiry skills, depth of knowledge, and related clinical significance. Prerequisite: Second Year Fall Courses

1.5 credits,

HAY 558: Evidence Based Practice Seminar
Final of three courses that explore a broad spectrum of research literature examining physical therapy practice. Literature will be used as a tool to integrate student's critical inquiry skills and depth of knowledge. Students judge the strength of the evidence of each paper and draw conclusions regarding its clinical significance. When lacking evidence, challenges student to suggest ways to strengthen the current evidence. Prerequisites: Second Year Courses

3 credits.
thapist, the physical therapist assistant and the physical therapist aide in the present healthcare environment. Explores dynamics of professional interactions with patients, families and other healthcare providers.

2 credits,

**HAY 561: Professional Practice II: Clinical Education**

Taught concurrently with theoretical and practical coursework in the curriculum to prepare the students for their first clinical experience. Offered before HAY 595 Clinical Education I to prepare students for patient and caregiver instruction and to provide students with knowledge of the roles and responsibilities of the student and the clinical instructor within the healthcare environment. Examines different learning and teaching styles and their effect on the learning environment. The fundamentals of teaching as they apply to patient education, professional inservices, and clinical education are presented and practiced. Students are introduced to aspects of verbal and nonverbal communication, with opportunity to work in small groups for application of these principles. Preparation for the first clinical education experience, specifically clinical site and academic program expectations, professional behavior, and student responsibilities, are discussed in detail. Prerequisites: Second Year Summer Courses

1.5 credits,

**HAY 580: Practicum**

A limited number of students may enroll in 3-6 credits of independent study in research, education, practical experience, or management/administration. Each practicum project is uniquely designed to meet the needs of the student. Mentored by faculty with expertise in the area of study. Acceptable projects must include design, implementation and analysis phases. 3-6 credits by permission of the Program Director.

3-6 credits,

*May be repeated 3 times FOR credit.*

**HAY 589: Case Studies I**

Integrates material from prior coursework and focuses on development of communication skills during physical therapy interactions with patients and other members of the interdisciplinary team. Students will engage in simulation-based learning experiences to help them develop their communication skills related to building relationships, opening a discussion, gathering information, understanding the patient perspective, sharing information, reaching agreement, providing closure, demonstrating empathy, and communicating accurate information. Students will also develop their skills related to self-reflection and feedback. Prerequisites: First Year Courses

1 credit, S/F graded

**HAY 590: Case Studies II**

Integrates material from prior coursework and requires students to hypothesize mechanisms of injury to develop an evidence-based evaluation plan for patients with orthopedic dysfunction. Students will engage in simulation-based learning experiences to help them understand the relationship between pathophysiology and signs and symptoms, choose and perform appropriate assessments, evaluate clinical data, determine a differential diagnosis, respond to changes in patient status, and make appropriate recommendations for interventions for patients with orthopedic dysfunction. Prerequisites: Second Year Fall Courses

1 credit, S/F graded

**HAY 595: Clinical Education I**

An eight-week full time clinical experience course and the first of four clinical experiences in the curriculum. Allows the student to apply and integrate the academic knowledge, skills, and professional behavior acquired in the curriculum. Students are expected to demonstrate advanced beginner to intermediate level competency in all categories of the Clinical Performance Instrument (CPI) at the conclusion of the course. A licensed physical therapist is responsible for close supervision and guidance during the learning experience. Pre-requisites: All coursework prior to HAY 595.

8 credits, S/F graded

*May be repeated 1 times FOR credit.*

**HAY 602: Issues in Health Care Administration**

Provides a theoretical basis of successful management principles, as well as practical implementation strategies for these principles as they apply to the field of physical therapy. Emphasizes the basic management principles of planning, organizing, leadership, and controlling/coordination; marketing theory; business plan development; change management, total quality management/continuous quality improvement; regulatory agency and public policy impact; enhancement and maintenance of quality care including outcome analysis; emerging health care reimbursement models; and consulting approaches. Prerequisites: Second Year Courses

1-3 credits,

**HAY 620: Cardiopulmonary Physical Therapy I**

Introduces students to the interpretation of data from various diagnostic tests commonly encountered in patients with cardiac and/or pulmonary dysfunction. Engages classroom and laboratory activities designed to promote clinical decision making skills regarding the titration of exercise and the development of physical therapy interventions, including airway clearance techniques. Concentrates on the psychomotor skills needed to treat this patient population and the clinical reasoning skills required to ensure patient safety and improve patient outcomes. Prerequisites: Summer Year 2 Courses

2 credits,

**HAY 621: Cardiopulmonary Physical Therapy II**

Integrates material from prior coursework and utilizes information to develop an evidence-based total plan of care for patients with cardiac and/or pulmonary dysfunction. Students engage in simulation-based learning experiences to help understand the relationship between pathophysiology and signs and symptoms; choose and perform appropriate assessments; evaluate clinical data; design and perform physical therapy interventions; respond to changes in patient status; and make appropriate recommendations for equipment and community programs for patients with cardiac and/or pulmonary dysfunction. Prerequisites: Summer Year 3 courses.

2 credits,

**HAY 692: Clinical Education II**

A nine-week full time clinical experience course and the second of four clinical experiences in the curriculum. Allows the student to apply and integrate the academic knowledge, skills, and professional behavior acquired in the curriculum. Students are expected to demonstrate intermediate level competency in all categories of the Clinical Performance Instrument (CPI) at the conclusion of the course. A licensed physical therapist is responsible for close supervision and guidance during the learning experience. Pre-requisites: All coursework prior to HAY 692.

2-9 credits, S/F graded

**HAY 693: Clinical Education III**

An eight-week full time clinical experience course and the third of four clinical experiences in the curriculum. Allows the student to apply and integrate the academic knowledge, skills, and professional behavior
acquired in the curriculum. Students are expected to demonstrate intermediate level competency in all categories of the Clinical Performance Instrument (CPI) at the conclusion of the course. A licensed physical therapist is responsible for close supervision and guidance during the learning experience. Pre-requisites: All coursework prior to HAY 693.

8 credits, S/F graded

HAY 694: Clinical Education IV
A full time ten-week clinical experience course and the final clinical experience in the curriculum. Allows the student to apply and integrate the academic knowledge, skills, and professional behavior acquired in the curriculum. Students are expected to demonstrate entry level competency in all categories of the Clinical Performance Instrument (CPI) at the conclusion of the course. A licensed physical therapist is responsible for close supervision and guidance during the learning experience. Pre-requisites: All coursework prior to the HAY 694.

8-12 credits, S/F graded

HAY 699: Clinical Continuation
This course is for physical therapy students continuing with clinical.

S/F graded
May be repeated for credit.