GRAND VALLEY STATE UNIVERSITY
DEPARTMENT OF PHYSICAL THERAPY

PROGRAM AND CURRICULUM INFORMATION

DEPARTMENT OF PHYSICAL THERAPY

MISSION

To advance the profession of physical therapy through excellence in education, scholarship and service.

CORE VALUES

Professional and ethical behavior
Respect and appreciation of differences
Life-long learning
Excellence in teaching, scholarship, practice
Appreciation of personal well-being
Collegiality and collaboration
Social responsibility
Evidence-based practice
Reflective practice
Advocacy
Leadership

VISION

Our vision is to produce reflective physical therapy practitioners who demonstrate excellence in clinical practice, education, consultation and research to meet the physical therapy needs of society. We strive to transform students personally and professionally. We challenge our students to achieve distinction in examination, evaluation, intervention and prevention of movement dysfunction. In addition, we nurture the development of leadership, for both faculty and students, to address societal healthcare needs, link evidence to practice and make ethical decisions.

PHYSICAL THERAPY PROGRAM

GENERAL PHILOSOPHY and PRINCIPLES

A primary goal of the Physical Therapy Program is to prepare graduates to perform all aspects of the role of an entry-level physical therapist. Physical therapists:

- Diagnose and manage movement dysfunction and enhance physical and functional abilities.
- Restore, maintain, and promote not only optimal physical function but optimal wellness and fitness and optimal quality of life as it relates to movement and health.
- Prevent the onset, symptoms, and progression of impairments, functional limitations, and disabilities that may result from diseases, disorders, conditions, or injuries.

(**Guide to Physical Therapist Practice**, 2nd ed., Phys Ther. 2001; 81:21.)

Understanding all aspects of human function including physical, psychological, sociocultural, spiritual and developmental aspects is important for effective practice of physical therapy. In light of this need, faculty use a holistic perspective which embraces an interdisciplinary approach in education, practice and research. We strive to develop professionals who can manage patient care and integrate other professionals into a plan of care.

Physical therapy is a dynamic field in a changing health care environment. Graduating physical therapists must possess fundamental skills of examination and intervention, be well educated health scientists who are able to contribute to the knowledge of the field, and be problem solvers who can adjust to modified roles and new situations. We are preparing students for a specific role as physical therapists, but we also equip them for the ever-changing world of health care.

We believe that we can best prepare our students for changing practice and environments by emphasizing the development of essential skills. These skills include: effective communication, problem-solving and critical thinking, ethical decision-making, participation in and application of research, practice in an evidence-based manner, self-assessment, self-directed learning, the ability to work within groups, the ability to seek and provide feedback, and teaching skills. With these skills, our graduates will be able to recognize their need for information, seek and access this information through effective utilization of resources, and critically analyze information.

A wide variety of teaching/learning activities are used throughout the curriculum to foster cognitive, behavioral and physical skill development. We use a mixture of traditional, system-based, case-based, and problem-based educational experiences. We strive to involve students actively in the learning process as adult learners. Student input is sought and utilized in teaching/learning activities, students are encouraged to set their own

educational goals, and students are held accountable for learning and goal attainment. Group learning activities and inquiry are incorporated throughout the curriculum. Reflective activities are used to facilitate assessment of self, others and experiences. A collegial approach is emphasized with faculty-student interaction contributing to mutual development. Through this interaction, faculty model and strive to impart a value system to guide professional decision-making.

EDUCATIONAL PHILOSOPHY OF THE DOCTORATE PHYSICAL THERAPY PROGRAM at GRAND VALLEY STATE UNIVERSITY

INTRODUCTION

The foundational teaching and learning principles for the Doctorate in Physical Therapy come from blending several theories: 1) Behavioral or objectivist; 2) Dewey's experiential; 3) Piaget's cognitive psychology; 4) Knowles theory of adult learning; and 5) Social Cognitive Theory. The synthesis of these models provides the foundation for the use of Situated Learning and Constructive-Developmental theories as the basis for the design of the physical therapy curriculum. The faculty believes that this blend of educational philosophies is consistent with the University's commitment to providing students a strong liberal education. The goal of the physical therapy faculty is to facilitate the personal and professional development of individuals so they will effectively participate in, and contribute to, their chosen profession and society. What follows is a brief summary of these educational philosophies and how they are integrated into the Physical Therapy curriculum.

BEHAVIORISM

The use of behaviorist theory, in the form of structured, hierarchical-ordered didactics (as used in the traditional "medical model") is evident in the curriculum, e.g., taking anatomy before the clinical medicine series. This model is more teacher-centered where faculty presents a finite body of knowledge (content) that can be broken into component parts, i.e., knowledge and skills. Generally, knowledge and skills are then taught in sequence, from simple to complex. The faculty realizes the major limitations to basing the entire curriculum on this model are twofold: students assume the role of "passive" learners and the fallacy of the assumption that "the whole is a sum of its parts.". Thus, the faculty has minimized the influence of the tenets of behaviorism in the curriculum.

JOHN DEWEY AND JEAN PIAGET

Dewey believed that learning must be active and that is best be achieved by student participation in "genuine experiences" (learning by doing) and subsequent reflection. According to Dewey, "education must be conceived as a continuing reconstruction of experience." What this means is that experiences must necessarily provide continuity (experiences are stored and carried on into the future) and interaction (one's present experience is a function of the interaction among one's past experiences and the present situation). Similarly, Piaget's concept of equilibration prompts learners to remake meaning of their experiences. The DPT curriculum is designed to provide students with opportunities for many practical experiences, e.g., part- and full-time clinical rotations. Furthermore, in didactics that precede and follow these genuine experiences, faculty call on students to draw from past learning experiences as students encounter and solve, new, unique, ambiguous and ill-structured problems, e.g., clinical seminar course series.

ADULT LEARNING THEORY (ALT)

Knowle's theory of Adult Learning (ALT) assumes that the learner is self-motivated, which extends the philosophies of Dewey and Piaget, emphasizing skill development in problem-solving, self-directed learning, and comprehension of process (metacognition) as much as content. In ALT, faculty shift roles from authority (teacher-centered) to learning facilitator (student-centered) and collaborator. The clinical seminar series that uses a problem-based teaching method and the research sequence are examples of how the faculty applies ALT.

SOCIAL COGNITIVE THEORY (SCT)

In SCT, human learning behavior is believed to be a triadic, dynamic and reciprocal interaction of personal factors, behavior, and the environment. A key tenet of SCT is that humans can learn by observing others (a cognitive apprenticeship model that includes modeling, coaching, articulation, reflection and exploration), especially those peers and faculty with whom they can identify. Social learning happens throughout the curriculum in didactic and laboratory situations as students collaborate with faculty, as well as during clinical rotations where students are mentored by clinical faculty.

SITUATED LEARNING THEORY (SLT)

Similarly, SLT theory contends that learning occurs as a function of activities, context, and social and historical culture. Learning involves a community of learners that requires social interaction and collaboration, i.e., students with students and students with faculty, where students use their own experience, lives, and current knowledge as a starting point for learning. However, SLT extends SCT in the sense that students are periodically placed in context-rich learning environments that go beyond the traditional classroom. Students' early, and ongoing, exposure to clinical observations/experiences is one example of situated learning. Additionally, the use of a PBL format in the clinical seminar series will better create contexts to construct clinical knowledge.

CONSTRUCTIVE-DEVELOPMENT PEDAGOGY

According to Constructivist theory, knowledge is not "objective," nor set in stone, but is relational and emerging, based on evolving scientific theory and self-discovery. Learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge or reconstruct previously held concepts; and these constructions or reconstructions occur within social settings. Also, learning relies on building a cognitive structure to select and transform information, construct hypotheses, and make decisions; students develop these mental models or schemas to provide meaning and organization to their learning experiences. According to constructive theory, learning does not come from progressive development, but learning is developmental.

Both Constructive and Situated Learning theories are derived from Dewey and Piaget and suggest that curricula be organized in a spiral manner so that learners can build upon what they have experienced previously ('intellectual scaffolding'). Students are thus challenged to acquire, construct, and reflect upon "real life" problems that are ambiguous and increasingly complex. The faculty believes that use of intellectual scaffolding will promote learners' development of cognitive structures that assist in retention and transfer of learning.

SUMMARY

Throughout the doctorate curriculum a traditional model of teaching/learning (behaviorism) is used in foundational courses, e.g. anatomy. However, the faculty believes that student personal and professional development can best be achieved when "genuine" experiences can be created. Therefore, real experiences and the "remaking" of those experiences, which inherently requires active learning (ALT), mutual construction of knowledge in social and real settings (constructivism, SCT, and SL), and critical and reflective thinking (as espoused by John Dewey and Jean Piaget) serve as the primary foundation for the doctorate curriculum. The faculty believes that a curriculum based on these principles will result in graduates that are caring, competent, accountable, and life-long learners who will contribute to their communities and profession.

DEPARTMENT OF PHYSICAL THERAPY
DPT CURRICULUM STRANDS

Five strands are interwoven throughout the DPT curriculum to assure that the DPT graduate possesses the exit skills necessary to be a successful and valued practitioner of physical therapy in tomorrow's health care environment.

Curricular Strand #1: Development of a *reflective practitioner* capable of *evidence-based practice* in tomorrow's health care environment, including *direct access*.

Reflective practitioners recognize the interrelatedness of various forms of knowledge as essential to competent practice and the development of professional expertise, thus they constantly examine their practice effectiveness and make appropriate revisions to the intervention, setting, and circumstances.
Evidence-based practice incorporates the above and is the ability to find, evaluate, create, and utilize the literature to support clinical decisions congruent with patient values.
Direct access allows patients to seek Physical Therapy services without a physician's referral.

Curricular Strand #2: Development of a practitioner committed to *systems-based practice.*

Systems-based education refers to the integration of all biological mechanisms involved in movement dysfunction.
A *systems-based practitioner* recognizes the interdependent relationship of all health care practitioners in meeting the needs of the client.
Systems-based also includes interactions with families, specific populations, communities, health care facilities, private organizations, and government agencies.

Curricular Strand #3: Development of a practitioner who has an appreciation for *diversity* and its impact on health care delivery.

Diversity includes the richness of differences related to culture, gender, age, socioeconomics, spirit, religion, ethnicity, and sexual orientation. These examples are a descriptive, but not all-encompassing, list.

Curricular Strand #4: Development of a practitioner who is capable of systematic reflection on and analysis of ethics, whether in clinical practice, research endeavor, or the community.

The graduate is expected to utilize general principles of ethics and face each new situation from a systematic, ethical stance.

Curricular Strand #5: Development of a practitioner who demonstrates *leadership skills* and *advocacy* within the profession and the community.

Leadership is the ability and commitment to serve, guide and direct the delivery of quality health care. In addition, the graduate would have the ability to contribute such skills to the physical therapy profession at the local, state, and national level.

Advocacy is the ability to speak or write in support of clients, the community, and the profession. This includes shaping public policy and working within the breadth of health care institutions.

DEPARTMENT OF PHYSICAL THERAPY
STUDENT OUTCOME GOALS AND OBJECTIVES

Physical therapy graduates will show evidence of competence in the following:

1. **Effective communication and interpersonal skills, which are adapted to meet the needs of individuals and various audiences.**
    a. Demonstrate effective communication skills (receptive, expressive, verbal, non-verbal, written) which are adapted to meet the needs of individuals and various audiences.
    b. Demonstrate effective interpersonal skills which are adapted to meet the needs of individuals and various audiences.

2. **Adherence to safe, ethical and legal standards of current practice (as identified by professional organizations, federal and state law and accrediting bodies).**
    a. Demonstrate adherence to safe practice standards as identified by professional, state and federal bodies.
    b. Demonstrate adherence to ethical and legal standards of current practice as identified by professional, state and federal bodies.

3. **As a responsible health care provider and interprofessional team member prepared for autonomous practice, determination of physical therapy diagnosis and development of an individualized plan of care for the management and prevention of movement dysfunction across the lifespan.**
    a. Demonstrate physical therapy screening of the following systems for keep-refer decisions: Musculoskeletal; Neuromuscular; Cardiovascular and pulmonary; Integumentary
    b. Demonstrate history taking, examination, evaluation, physical therapy diagnosis, prognosis, and reevaluation of the following systems: Musculoskeletal; Neuromuscular; Cardiovascular and pulmonary; Integumentary
    c. Demonstrate development of plan of care and intervention for the following systems: Musculoskeletal; Neuromuscular; Cardiovascular and pulmonary; Integumentary
    d. Demonstrate team skills.

3. **Practice management for physical therapy delivery relevant to individuals and communities in diverse environments.**
    a. Identifies and is accountable for services that may be directed to others.
    b. Evaluates the quality of services delivered by a physical therapy provider by participating in quality improvement activities
    c. Recognizes the relationship of reimbursement, documentation and billing coding to the delivery of physical therapy services.

5. **Application of principles of education to teaching and learning experiences in varied practice settings, the community and classroom.**
    a. Designs and conducts educational programs for patients, caregivers, community groups, colleagues, students and other health care professionals, adapting teaching style to the needs of the learners.
    b. Evaluates and modifies educational programs and delivery based on audience needs.

6. **Application of principles of critical thinking to evaluate professional literature and practice concepts for integration of best evidence into clinical practice.**
    a. Prepares and presents a scholarly project of clinical or applied research.
    b. Defends clinical decision-making with pertinent research evidence using an evidence based practice approach to patient case management

7. **Professional responsibility and commitment through active involvement in professional activities beyond job responsibilities, and self-directed professional development.**
    a. Values membership and participation in professional organizations
    b. Utilizes self-assessment to form plans for professional development
    c. Values and participates in service-based activities (e.g. Wheel Run Together, pro bono clinics, disability group activities, etc.)
    d. Shows evidence of involvement in professional activities beyond job responsibilities at one year post-graduation.

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PHYSICAL THERAPY PROGRAM PREREQUISITES

(GVSU courses are provided as examples)

One course that includes cellular structure and function, with lab (BIO 120)

Chemistry that is prerequisite to physiology (CHM 109, 231, 232)

One course in anatomy with lab (BMS 208, 309)

One course in physiology with lab (BMS 290, 291)

One course in exercise physiology (MOV 304)

One course in college algebra, college trigonometry or calculus (MTH 122, 123 or 201)

Two sequential courses in general physics with labs (PHY 220, 221)

One course in statistics (STA 215)

One course in introductory psychology (PSY 101)

One course in life-span developmental psychology (PSY 364)

One course in introductory sociology, social problems or introduction to cultural anthropology (SOC 201 or 280 or ANT 204)

Students must complete their baccalaureate degree prior to beginning the Physical Therapy Program.

GRAND VALLEY STATE UNIVERSITY
DEPARTMENT OF PHYSICAL THERAPY

Professional Curriculum Outline

First Term: FALL

BMS 427	Neuroanatomy
BMS 461	Prosected Regional Anatomy
PT 511	Foundations in Physical Therapy Examination
PT 512	Introduction to Evidence Based Practice in Physical Therapy
PT 513	Clinical Science I
PT 515	Professional Topics I
PT 517	Clinical Kinesiology

Second Term: WINTER

PT 521	Musculoskeletal Examination
PT 522	Musculoskeletal Intervention
PT 523	Clinical Science II
PT 526	Clinical Seminar I
PT 528	Clinical Biomechanics

Third Term: SPRING/SUMMER

BMS 428	Neurosciences I
PT 510	Lifespan Motor Development
PT 631	Cardiopulmonary Physical Therapy I
PT 632	Integumentary Practice Management
PT 634	Clinical Seminar II
PT 636	Clinical Education I
STA 610	Applied Statistics for Health Professions

Fourth Term: FALL

PT 610	Research in Physical Therapy
PT 641	Neuromuscular Examination
PT 642	Interventions in Neuromuscular Physical Therapy
PT 643	Clinical Science III
PT 644	Clinical Seminar III
PT 647	Cardiopulmonary Physical Therapy II

Fifth Semester: WINTER

PT 652	Geriatric Practice Management
PT 655	Professional Topics II
PT 656	Clinical Education II
PT 657	Teaching for Physical Therapists
PT 661	Exam and Intervention for Rehabilitation
PT 790	Physical Therapy Research I

Sixth Term: SPRING/SUMMER

PT 651	Spinal Exam and Intervention
PT 662	Pediatric Practice Management
PT 665	Professional Topics III
PT 790	Physical Therapy Research I
PSY 668	Disability Psychology for Physical Therapists

Seventh Term: FALL

PT 675	Clinical Education III
PT 677	Clinical Education IV

Eighth Term: WINTER

PT 681	Advanced Clinical Decision-Making
PT 682	Health and Wellness
PT 685	Professional Topics IV
PT 793	Physical Therapy Research II

Optional Classes

PT 684	Advanced Topics: Sports Physical Therapy
PT 686	Advanced Topics: Pediatric Physical Therapy
PT 687	Advanced Topics: Spinal Manual Therapy
PT 688	Advanced Topics: Neurologic Physical Therapy

Ninth Term: SPRING/SUMMER

PT 696	Clinical Education V

PROFESSIONAL CURRICULUM COURSE DESCRIPTIONS

FIRST YEAR
FALL SEMESTER

BMS 427 NEUROANATOMY

Covers the organization of the human nervous systems, with emphasis on the pathways and nuclei of the central nervous system and their functions.

BMS 461 PROSECTED REGIONAL ANATOMY

A regional approach to the gross anatomy of the human body, with integrations of the musculoskeletal system, through the use of prosected cadavers.

PT 511 FOUNDATIONS IN PHYSICAL THERAPY EXAMINATION

This course includes an introduction to clinical measurement theory, basic examination techniques (including vital signs, sensation testing, girth/volume measurements, goniometry, Manual Muscle testing, muscle length testing, postural and basic gait examination). Each of these examination procedures is taught in the context of reviewing and acknowledging the existing evidence as it relates to reliability and validity of examination techniques. The systems review, principles of history taking/patient interviewing, a mock chart review, and beginning clinical documentation are also addressed. This course incorporates one simulated clinical experience utilizing model patients. Additionally, several professional "across-content" skills are emphasized, including communication, reflection, critical thinking, and feedback.

Texts:

American Physical Therapy Association. (2003). Guide to Physical Therapist Practice (3rd ed.)

Kendall, FP. (2005). Muscles: Testing and Function with Posture and Pain (5th Edition). Lippincott,Williams & Wilkins.

Norkin, CC, and White, J. (2009). Measurement of Joint Motion, 4th Edition. F.A. Davis Company, Philadelphia.

Rothstein, J. (2005). Rehabilitation Specialists Handbook, 3rd edition. F.A. Davis Company, Philadelphia.

PT 512 INTRODUCTION TO EVIDENCE BASED PRACTICE IN PHYSICAL THERAPY

Students in this course learn about the principles of evidence-based practice, especially with regard to research evidence, how to do EBP, and the hierarchy of evidence for EBP. Specific research concerns are also addressed, such as what constitutes a peer-reviewed publication, how to locate these articles in databases and on the web, and how to evaluate the quality of the evidence in any published article. Students are also taught about clinical significance compared to statistical significance, how to read and abstract a published piece of evidence, and they also become familiar with clinical case reports and systematic reviews. Students also learn how to construct concise abstracts.

Texts:
Jewell DV. (2008) *Guide to Evidence-Based Physical Therapy Practice*. Jones & Bartlett Publishers: Sudbury, MA.

Portney, L. & Watkins, M. (2009). *Foundations of Clinical Research: Applications to Practice*. Norwalk: Appleton & Lange.

PT 513 CLINICAL SCIENCE I

Covers study of physiological responses to pathology of the endocrine, hepatic, immune, integumentary, gastrointestinal, renal, and reproductive systems, including mechanisms basic to inflammation, neoplasia, tissue repair and regeneration, and pain across the four major systems of PT practice. Systems screening, physical therapy practice patterns, and medical management, including pharmacotherapy, are emphasized.

Texts:
Goodman, Boissenault, and Fuller. Pathology: Implications for the Physical Therapist. Second Edition. Saunders, Philadelphia, 2003.

PT 515 PROFESSIONAL TOPICS I

Introduces the roles of physical therapists in a changing health care system, and the following professional topics: APTA and professional history; Guide to PT Practice; ethics, conduct and informed consent; communication; diversity; relationship-centered care; systems perspectives and disablement models; documentation; reimbursement; and evidence-based practice.

Texts:
Purtilo, Ruth. *Ethical Dimensions in the Health Professions*, Fourth Edition. W.B. Saunders Company, Philadelphia, 2005.

Purtilo, Ruth and Haddad, Amy. *Health Professional and Patient Interaction*, Sixth Edition. W.B. Saunders Company, Philadelphia, 2002.

Kettenbach, Ginge. *Writing SOAP Notes*, Third Edition. F.A. Davis Company, Philadelphia, 2004.

American Physical Therapy Association. *Guide to Physical Therapist Practice*, Second Edition (revised). American Physical Therapy Association, Alexandria, VA, 2003.

PT 517 CLINICAL KINESIOLOGY

The study of functional musculoskeletal anatomy, including arthrokinematics, osteokinematics, muscular actions and control, and kinesiological concepts that govern motion concerns. Course content focuses on normal human motion; pathological human motion will be introduced. Students use living subject models to develop skills in surface and deep anatomy palpation and functional analysis of movement patterns. After review of kinematic, muscle mechanics and muscle control principles, a regional approach is taken to study the details of specific joint complexes, including the

spine and TMJ, shoulder girdle, elbow/forearm, wrist/hand, hip and pelvis, knee and ankle/foot. Students develop fundamental skills in the use of isokinetic muscle testing and gait analysis.

Texts:
Newmann, D.A. Kinesiology of the Musculoskeletal System: Foundations for Physical Rehabilitation. Mosby, 2002.

Kendall, McCreary, Provance, Rodgers, Romani. Muscles, Testing & Function, with Posture and Pain (5^{th} ed.), Lippincott Williams & Wilkins, 2005.

Biel, A. Trail Guide to the Body (3^{rd} ed.), Biel, 2005.

First Year

WINTER SEMESTER

PT 521 MUSCULOSKELETAL EXAMINATION

This course will introduce the student to neuromusculoskeletal evaluation procedures, including patient interviewing, posture analysis, palpation, manual testing, and physiologic range of motion strategies related to the evaluation of neuromusculoskeletal dysfunction. Instruction in both the assessment and interventions for joint play in the extremities will also be given as part of this course, and introduction of the spine. Students will be introduced to the screening and differential diagnosis procedures that will enhance his/her ability to make clinical decisions regarding the appropriateness of physical therapy referrals and guide the subsequent direction of therapeutic interventions.

Texts:
Magee DJ. Orthopedic Physical Assessment, 5th edition. WB Saunders Co. 2008.

Manual Mobilization of the Joints, Volume 1, 5th edition. F. M. Kaltenborn. Olaf Norlis Bokhandel: Oslo, Norway (1999).

PT 522 MUSCULOSKELETAL INTERVENTION

In this course students will learn the basic, evidence-based interventions and establishment of prognostic skills for musculoskeletal extremity and spinal pathologies.

Specific topics covered in this course include:

- Mobility, transfer and gait training
- Thermal, electrical and mechanical modalities
- Massage and beginning soft tissue treatments (stretching, fascial mobility, etc.)
- Therapeutic Exercise prescription, selection, and modification for all body regions and diagnoses, including ROM, stretching, resistance exercises, postural and stability exercises, and functional exercise.
- Joint mobilization techniques (in conjunction with PT 521)

Each of the above mentioned topics are addressed in the context of interpretation of examination findings, establishing goals and objectives for intervention, utilization of critical thinking for prescription of individualized, comprehensive intervention strategies for patients/clients. Students are also challenged to discuss the rationale for intervention selections, justify choices of exercise equipment, resistance, degree of difficulty, dosage, and evaluate the effectiveness of their chosen interventions. Students must be able to modify interventions based on actual or described patient responses.

An eclectic approach to patient management is presented so that manual and non-manual based therapeutic approaches may be applied clinically. Basic issues of injury prevention and client or patient wellness are addressed.

Texts:

Benjamin, P. J. & Tappan, F.M. Tappan's Handbook of Healing Massage Techniques, 5th edition. Prentice Hall, 2005.

Cameron, M.H. Physical Agents in Rehabilitation: From Research to Practice. 3rd edition. W.B. Saunders,
2003.

Pierson, F.M., Principles & Techniques of Patient Care, 4th edition, W.B. Saunders, 2007.

Voight, ML, Hoogenboom, BJ, and Prentice, WE (eds). Musculoskeletal Interventions: Techniques for Therapeutic Exercise. McGraw-Hill, 2007.

**Recommended Reading:

Hall, C. M & Thein-Brody, L. Therapeutic Exercise: Moving Toward Function, 3rd Edition. Lippincott
Williams & Wilkins, 2005.

PT 523 CLINICAL SCIENCE II

This course introduces students to musculoskeletal imaging techniques and the basics of reading musculoskeletal diagnostic images. Students are instructed in decision making, such as keep or refer, and what information is necessary to provide to physicians and other health care professionals for referrals. Common musculoskeletal conditions, related surgeries, post-surgical management and evidence-based rehabilitation are addressed. This content pertains to the upper extremity, lower extremity, pelvis and spine (cervical, thoracic, and lumbar). Fracture management, neoplasm in the musculoskeletal system, and rheumatological problems including RA and OA are taught. Finally, students are taught a working knowledge of orthoses for the UE, LE, and spine concerns.

Texts:
McKinnis L. Fundamentals of Orthopedic Radiology 3rd Edition FA Davis, 2010.

Salter. *Textbook of Disorders & Injuries of the Musculoskeletal System.* 3rd Edition, 1999.

PT 526 CLINICAL SEMINAR I

The overall goal of this course is to facilitate the application and integration of prior and concurrent course content and prepare students for their subsequent clinical education experiences in clinical facilities. Through case-study scenarios, students are introduced to a variety of clinical issues impacting decision-making for patients with primarily musculoskeletal disorders. Issues explored include reimbursement, confidentiality, cultural diversity, socioeconomic concerns, psychosocial matters, secondary medical issues and access to the clinician. Students demonstrate ability to document in SOAP format. Students participate in three half-day observational experiences in musculoskeletal practice settings, and participate in one standardized or model patient experience.

PT 528 CLINICAL BIOMECHANICS

Rigid body and deformable body mechanical principles are used to understand normal human function and pathomechanics related to joint dysfunction. Application of principles to understand examination, evaluation, diagnosis, prognosis, and intervention for impairments, functional limitations and disability

will be emphasized. Methods of kinematic, kinetic and electromyographic investigation will be introduced. Problem-based learning principles will be used in the context of clinical problems.

Texts:

Neumann, D.A. Kinesiology of the Musculoskeletal System: Foundations for Physical Rehabilitation. 2nd ed. Mosby, 2010.

FIRST YEAR
SPRING/SUMMER SEMESTER

PT 636 CLINICAL EDUCATION I

One five-week full-time clinical experience in physical therapy practice settings followed by weekly discussion and case presentations. The focus of the experience is on the management of patients/clients with musculoskeletal impairment and related functional limitations. (See syllabus for complete course outline)

BMS 428 NEUROSCIENCES

Covers the function of the human nervous system. Emphasis on somatosensory and somatomotor systems and the cranial nerve nuclei involved in disease. Students are introduced to certain neurologic disease processes such as MS and Parkinson's Disease, and the PT implications involved with them.

PT 510 LIFESPAN MOTOR DEVELOPMENT

Covers a lifespan view of motor learning and motor development. Included are basic principles of motor control and in-depth coverage of motor learning and its relationship to development. The development of each of the body systems (musculoskeletal, neurological, cardiopulmonary, integument, sensory, posture, balance, locomotion and prehension) is related to function throughout the lifespan. The developmental sequence is covered. At the end of this course the students should be able to screen for developmental delays through hands on evaluation of all developmental reflexes, major motor milestones and specific standardized tests such as the Denver and the Bruinicks-Osteresky Test - II

Texts:
Cech D. and Martin S., Functional Movement Development Across the Life Span, 2nd Ed. W.B. Saunders Co., Philadelphia, 2002.

PT 631 CARDIOPULMONARY PHYSICAL THERAPY I

The physiologic and pathophysiologic basis for physical therapy management of individuals with cardiovascular and pulmonary dysfunction as seen in general physical therapy practice. Emphasis is placed on assessment and interpretation of physiologic responses during therapeutic activities and on associated clinical decision making.

Texts:
Acute Care Handbook for Physical Therapists. 2nd Edition. Jaime Paz and Michele West. Butterworth-Heineman. 2002

PT 632 INTEGUMETARY PRACTICE MANAGEMENT

Examination, evaluation and multiple interventions for all types of acute and chronic wounds in all patient populations. Interventions include: wound cleansing, debridement, contemporary uses of dressings and products, and mechanical and thermal modalities. A multi-systems approach for both wound prevention and wound treatment are presented.

Texts:
Myers, BA. *Wound Management: Principles and Practice.* 2nd Edition, Pearson Prentice Hall, 2008.

PT 634 CLINICAL SEMINAR II

Clinical issues pertaining to physical therapy management of medically complex patients in the acute care setting are introduced through case-oriented presentations and advanced study utilizing problem based learning. Students explore evaluation and treatment strategies in response to acute changes in physiology and consider the broader perspectives of the family, the health care system and the community. Clinical observations and an ICU simulation lab will complement classroom discussion.

Texts:
Acute Care Handbook for Physical Therapists (3rd ed.), Paz JC, West MP, Saunders/Elsevier Inc, 2009

Guide to Physical Therapist Practice, 2nd Edition, Revised June 2003, APTA, Alexandria, Virginia

STA 610 APPLIED STATISTICS FOR HEALTH PROFESSIONS

Project-oriented overview of major statistical techniques commonly used in problems encountered in health professions. Students will learn to use a major statistical computing package (SPSS 14.0). Hypothesis testing, t-tests, regression, analysis of variance, analysis of covariance, categorical data analysis, and nonparametric statistics are addressed.

Texts:
Portney, L. & Watkins, M. (2009). *Foundations of Clinical Research: Applications to Practice*. Norwalk: Appleton & Lange.

SECOND YEAR
FALL SEMESTER

PT 610 RESEARCH IN PHYSICAL THERAPY

Using examples of research methodologies commonly utilized in rehabilitation research, this course covers principles of research design, experiential validity, and concepts of measurement reliability in the context of evidence-based practice. Students learn to critically appraise research articles and apply current evidence to clinical practice.

Texts:
Portney, L. & Watkins, M. (2009). *Foundations of Clinical Research: Applications to Practice*. Norwalk: Appleton & Lange.

PT 641 NEUROMUSCULAR EXAMINATION

Neurological examination is studied from a problem oriented approach. Neurological problems are listed and defined in detail with functional significance emphasized. The students also learn objective tests and mesures for neurologic examination for each problem. During laboratory sessions, students are exposed to neurological clientele and have the opportunity to perform evaluations in small groups. At the end of this course the student should be able to list the components of and perform a complete neurological examination and interpret test results. The student should also have beginning skills in modification of the evaluation in accordance with the needs of the client and the practice environment.

Texts:
O'Sullivan. Physical Rehabilitation Assessment and Treatment, 6th Edition. FA Davis, 2006.

Fenderson and Ling. Neuro Notes. 1st Edition. FA Davis, 2009.

PT 642 INTERVENTIONS IN NEUROMUSCULAR PHYSICAL THERAPY

This course provides a foundation in the theoretical basis and treatment techniques for neurologic rehabilitation, based on principles of motor control and motor learning and current evidence-based practice. Students will learn to design comprehensive plan of care and apply interventions targeted to the remediation of disabilities, functional limitations, and impairments in clients with neurological conditions. Laboratory sessions provide hands-on skill training for treatment of common problems seen in persons with neurological conditions. Laboratory format uses clinical case studies to promote application, problem-solving and critical thinking in the design of interventions for diverse neurological clinical populations.

Texts:
O'Sullivan SB, Schmitz TJ (eds): Improving Functional Outcomes in Physical Rehabilitation. FA Davis Co, Philadelphia PA, 2010

Carr JH, Shepherd RB: Stroke Rehabilitation. Butterworth Heinemann, 2003

Davies PM: Steps to Follow: A Guide to the Treatment to Adult Hemiplegia, 2nd ed. Springer-Verlag, Berlin Heidelberg, Germany, 2000

PT 643 CLINICAL MEDICINE III

Health care management of neurological clients. This course includes descriptions of the physiology and clinical signs and symptoms of the most common adult and pediatric neurological disorders. Health care management will include physical therapy diagnosis and prognosis, medical management, and pharmacological management.

Texts:
Hauser and Josephson. Harrison's Neurology in Clinical Medicine. Second Edition. McGraw-Hill Professional 2010.

PT 644 CLINICAL SEMINAR III

This course provides students insight into complex case management issues in neurologic physical therapy practice. Students learn to apply the International Classification of Functioning, Disability and Health Framework for case analysis and clinical decision-making for neurologic cases with varied diagnosis across the continuum of care. Case-based discussion and clinical observation experiences facilitate students to analyze from a system-based perspective factors that influence the development of a plan of care for neurologic patients. Emphasis on evidenced based practice, effective advocacy for clients, and health promotion behaviors as well as viewing each aspect of the patient's life, not just their disease.

Texts:
Quinn, Gordon: Documentation for Rehabilitation, 2nd ed. SaundersElsevier, Maryland Hgt, MO, 2010

American Physical Therapy Association. Guide to Physical Therapist Practice, 2nd Edition, Phys Ther 2001; 81 (1)

Shared Texts with PT 641 & 642 (Examination & Interventions courses)
Additional resources: Readings assigned on weekly basis.

PT 647 CARDIOPULMONARY PHYSICAL THERAPY II

Students integrate physiologic and pathophysiologic principles in physical therapy management of individuals with cardiovascular and pulmonary dysfunction seen in specific practice settings. Knowledge of medical and surgical interventions, diagnostic testing and cardiopulmonary physical therapy tests and measures are applied to clinical decision-making.

Texts:
Acute Care Handbook for Physical Therapists. 2nd Edition. Jaime Paz and Michele West. Butterworth-Heineman. 2002.

SECOND YEAR
WINTER SEMESTER

PT 656 CLINICAL EDUCATION II

One six-week full-time clinical experience in physical therapy practice settings followed by weekly discussion and case presentations after students return to campus. Students are prepared to participate in the management of patients/clients with neuromuscular, cardiopulmonary, integumentary, and musculoskeletal impairments and related functional limitations. (See syllabus for complete course outline).

PT 652 GERIATRIC PRACTICE MANAGEMENT

The course deals with the normal age-associated changes that occur in the musculoskeletal, cardiopulmonary and neurological body systems and the functional implications of these changes. Psychosocial and environmental aspects of aging that impact upon physical therapy evaluation and treatment are also discussed. At the conclusion of the course, the student should be able to:

- ✓ Perform a screen for depression and stress and implement interpersonal strategies to minimize the influence of these factors upon treatment.
- ✓ Select and perform appropriate functional assessment for a given elderly population (i.e., well, frail), and utilize the results to formulate a treatment plan.
- ✓ Perform an environmental assessment (institutional, community and home) to identify safety hazards and factors that interfere with functional mobility (with emphasis on sensory changes and work efficiency) and make appropriate suggestions to remediate and/or accommodate problems noted.
- ✓ Evaluate the intrinsic and extrinsic risk factors associated with falls and implement a targeted intervention program to reduce fall risk.
- ✓ Perform the Mini-Mental assessment of cognition, correctly interpret the results, and utilize interpersonal, educational, and environmental strategies to facilitate communication with the cognitively impaired and support their functional ability.
- ✓ Modify therapeutic interventions (modalities, exercise, neurological techniques) when necessary to accommodate age-associated changes.

Texts:
Guccione, Geriatric Physical Therapy. Mosby.

PT 655 PROFESSIONAL TOPICS II

This course introduces students to the health care delivery system including managed care, government funded (Medicare/Medicaid), private insurance and out of pocket expenditures. Examination of health care financing, organization and reimbursement models with application to physical therapy will be presented. Students should become familiar with Medicare/Medicaid federal regulations, issues related to cost, quality and access related to health care reform, health savings accounts, universal coverage options, rationing and information technology in health care. Students learn to review and select an insurance benefits package which provides a framework for understanding patient's insurance benefits.

Text: No text is required. Web sites frequently accessed are:
www.medicare.gov

www.kaiseredu.org
www.kff.org
www.healthaffairs.org

PT 657 TEACHING FOR PHYSICAL THERAPISTS

This course provides instruction in educational theories and principles of teaching with emphasis on practical application for the Health Care Professional. It is designed to provide the student with tools to facilitate positive teaching and learning experiences with diverse audiences including: patients, families, community groups, peers and other health care professionals. Course will include strategies for assessing learner needs, writing behavioral objectives, choosing appropriate learning methods/formats, and planning an educational unit. Emphasis is on strategies to tailor learning to the unique needs of learners with unique and/or diverse backgrounds, including addressing health literacy issues in physical therapy clinical practice.

Texts:
Dreeben O. Patient Education in Rehabilitation. Jones & Bartlett, 2010

Shepherd and Jensen.. Handbook of Teaching for Physical Therapists, 2nd ed Butterworth-Heineman, 2002.

Lattanzi JB. Developing Cultural Competencies in Physical Therapy Practice. FA Davis Co, 2006.

PT 661 EXAM AND INTERVENTION FOR REHABILITATION

Several modules are combined in this course which deals with the long-term management of the rehabilitation patient. The four modules are prosthetics and orthotics, wheelchair evaluation and prescription, architectural barriers/environmental modifications and the management of individuals with spinal cord injury.

Texts:

Seymour, R. Prosthetics and Orthotics: Lower Limb and Spinal . Lippincott, Williams and Wilkins, Philadelphia, PA 2002.

Somers, M. Spinal Cord Injury Functional Rehabilitation. Second Edition. Appleton and Lange, Norwalk, Connecticut 2000.

PT 790 PHYSICAL THERAPY RESEARCH I

First of two courses in which students define a problem within the health professions and begin the application of foundational concepts and methodology used in research. Course work involves literature review, research design, and proposals. The development of group research, projects, or individual case reports is guided by an assigned faculty advisor.

Second Year
Spring/Summer Semester

PT 651 SPINAL EXAM AND INTERVENTION

Differential evaluation, manual examination, and treatment for the spine, rib cage, and pelvis incorporating techniques of the Scandinavian approach to manual therapy, myofascial release, neural tensioning, and basic exercise principles.

Texts:
Kaltenborn. The Spine: Basic Evaluation and Mobilization Techniques, 3rd Edition. Ortho Physical Therapy Prod.

Magee. Orthopedic Physical Assessment, 3rd Edition. WB Saunders, 1997.

PT 662 PEDIATRIC PRACTICE MANAGEMENT

This course covers pediatric diagnoses and the application of the patient/client management model as applied to contemporary pediatric physical therapist practice. Major diagnoses covered include cerebral palsy, spina bifida, neuro-muscular conditions, genetic conditions, developmental delay, torticollis, and infants at risk for neuro-developmental delays. Students are introduced to a variety of pediatric standardized tests including the Peabody Developmental Motor Scale – Second Edition (PDMS-2), the Gross Motor Function Measure (GMFM), the Test of Gross Motor Development – Second Edition (TGMD-2), the Sensory Profiles, and the Pediatric Evaluation of Disability Inventory (PEDI). Other topics include family centered care, respect for diversity, public law, and an introduction to the neonatal intensive care unit.

Texts:
Tecklin JS: Pediatric Physical Therapy, Fourth Edition. Lippincott Williams & Wilkins, Philadelphia, 2008.

PT 665 PROFESSIONAL TOPICS III

Students will be exposed to laws related to the practice of physical therapy from statutes, regulations and case law. Students will review state practice acts and discuss scope of practice issues. Analysis will include licensure, disciplinary action and professional conduct. Students will examine the standard of care relative to medical malpractice from litigated cases involving physical therapists. Other state law presented includes worker's compensation statues and mandatory reporting provisions. Federal laws considered include fraud and abuse provisions, HIPAA, Stark, ADA and IDEA. End of life issues are discussed and students prepare a durable power of attorney for their use if so desired.

Text: No text is required. Web sites frequently accessed are:

www.apta.org
www.mdch.gov
www.lexisnexis.com

PT 790 PHYSICAL THERAPY RESEARCH I

Continuation of second year winter semester.

PSY 668 PSYCHOLOGY OF DISABILITIES FOR PHYSICAL THERAPISTS

This course helps graduate students in the health professions understand theory and psychological research regarding psychosocial issues relevant to coping with physical illnesses and disabilities. The course also emphasizes the ways in which psychological knowledge can inform clinical practice, increase the efficacy of a standard therapeutic regimen, and facilitate adaptation and coping.

Text:
Jeffrey A. Kottler (2008). A Brief Primer of Helping Skills. Sage: Los Angeles.

Third Year
Fall Semester

PT 675 & 677 CLINICAL EDUCATION III & IV

These courses consist of full-time clinical experiences for third year physical therapy students in a variety of practice settings. The total full-time clinical experience will be 18 weeks, usually divided into two nine-week rotations. Students are academically prepared to manage patients/clients across the lifespan with musculoskeletal, neuromuscular, cardiopulmonary and integumentary disorders. (See syllabus for complete course outline.)

THIRD YEAR
Winter Semester

PT 681 ADVANCED CLINICAL DECISION-MAKING

The theoretical and empirical underpinnings of clinical expertise will be reviewed, with an emphasis placed on students' continued maturation of critical and reflective clinical judgment. Students will apply diagnostic, prognostic, intervention, and management strategies to solve complex clinical cases, using systems- and evidence-based practice models.

Texts and Readings:
Developing Clinical Problem-Solving Skills, A Guide to More Effective Diagnosis and Treatment, Barrows HS, Pickell GC, W.W. Norton & Company, NY, 1991.

Select readings and survey of the literature by leading authors on clinical decision making and expertise across various disciplines

PT 682 HEALTH AND WELLNESS

This course provides a framework and principles for health promotion and wellness across the lifespan. The course will focus on the concepts and the interrelationship of prevention methods, health education and health promotion/wellness for the individual and for the community. Through the application of the disablement model students learn strategies to prevent disease, injury, functional limitation and disability. The course covers topics of public and community health, the measurement of health and wellness, theories of behavior change and motivational interviewing.

Prevention, health promotion and wellness concepts and strategies for specific populations and environments include: occupational health, ergonomics and safety in the workplace and corporate employee health programs; women's health; geriatric health; children's health; the recreational athlete; and health promotion for cancer survivors and diabetes patients. Government programs and guidelines including Healthy People 2010 and health care reform initiatives will be discussed. Finally, an emphasis on the evolving role of the Physical Therapist as a primary care provider in the areas of screening, education, mentoring and advising individuals and populations on programs to promote optimal health and wellness at all stages of life will be presented and analyzed.

PT 685 PROFESSIONAL TOPICS IV

The course establishes the role and relationship of management theories and methods, as well as, their application in the health care delivery system in the United States. This will include: management and business ownership as a career; the interface between management and the professional clinical practitioner; the value of management skills and methods as a practicing Physical Therapist. The course includes an interdisciplinary approach to management behaviors and processes for effective leadership in the myriad of clinical physical therapy/rehabilitation settings. The course covers: human resource management including staffing, recruitment, job application and interviewing, negotiation, conflict resolution and performance evaluations. Business and fiscal management will include:

budgeting, revenue and cost management; productivity, billing and charges and the concept of retail business models.

The course will provide a realistic perspective of organizational behavior and dynamics including: change management, motivation and leadership, decision making/problem solving and communication. Throughout the course the implications and realities of the health care reform initiatives will be discussed and integrated into the weekly topics. The students will participate in a variety of real world, practical activities, class exercises, case studies and will be responsible to develop a program/service model that incorporates information gathered throughout the course. Finally, current topics such as quality management and safety, work place diversity programs, teams and team building, entrepreneurship will be presented.

Text:
Nosse, LJ, Friberg, DG, & Kovacek, PR. Managerial &Supervisory Principles for Physical Therapists, 2nd Edition. Lippincott, Williams & Wilkins.

PT 793 PHYSICAL THERAPY RESEARCH II

Students will conduct and complete a research project, including data collection, reduction, analysis, and interpretation. Formal written and oral reports will be prepared and presented. Student teams will be guided by faculty committee.

ADVANCED TOPICS (OPTIONAL)

In addition to students in the final semester of the physical therapy program, these courses are open to physical therapist clinicians.

PT 684 ADVANCED TOPICS IN PHYSICAL THERAPY: SPORTS PHYSICAL THERAPY

This elective course provides an in-depth study of theory, practice, and research in sports physical therapy. Pathologies, injury mechanics, surgical procedures and both operative and non-operative rehabilitation are discussed using a regional approach. Non-musculoskeletal topics such as nutrition, "The Female Athlete Triad", and psychology of injury are also discussed.

Several local clinics and clinicians participate in the delivery of content within this course adding to the diversity of topics, and increasing the perspective of the students in relation to the practice of sports physical therapy.

Students explore and present on a "novel" sport to demonstrate their ability to break down sport mechanics, determine mechanisms of injury, describe common injuries, and the rehabilitation of these injuries.

Text:
Prentice, WE. Rehabilitation Techniques for Sports Medicine and Athletic Training, 4th Edition. McGraw Hill, 2010.

Recommended: Andrews J, Harrelson & Wilk K. Rehabilitation of the Injured Athlete, 3rd Edition. W.B. Saunders, 2004.

PT 686 ADVANCED TOPICS: PEDIATRIC PHYSICAL THERAPY

This course critically examines pediatric physical therapist practice in a variety of clinical settings across the continuum of care. Included are in-depth study of evidence-based examination, evaluation, and intervention for patients ages birth to 21 with complex developmental or medical issues.

Texts:

Campbell SK, Palisano RJ, Orlin MN. Physical Therapy for Children, 4th Ed. Saunders, 2012

PT 687 ADVANCED SPINAL MANUAL THERAPY

This course is designed to provide the student with advanced knowledge in evaluation and treatment techniques for the spine, pelvis, and ribs. The manual therapy perspective generally attributed to the Scandinavian body of manual therapists will be the central theme of theory and technique. In addition, we will supplement that theoretical and treatment basis with an eclectic view of the spine based on the principles of McKenzie, Osteopathy, and Butler, as well as the instructors' own experiences. The principles of exercise that supplement the manual therapy treatment approaches will be presented and applied. Laboratory sessions will concentrate on the development of palpation and treatment technique/ application.

Texts:

Greenman P. Principles of Manual Medicine, 2nd Edition, Williams/Wilkins, 1996

Kaltenborn F. The Spine-Basic Evaluation and Mobilization Technique, OPTP

PT 688 ADVANCED TOPICS: NEUROLOGIC PHYSICAL THERAPY

This course will critically examine evidence-based practice and advanced knowledge in neurologic physical therapy. Students will apply foundational motor control theories for diagnosing and treating movement dysfunction, including advanced clinical practice skills for management of vestibular, balance and gait dysfunction, as well as cerebellar and basal ganglia disorders. Current trends and new interventions in neurologic practice will be analyzed from a theoretical, clinical, and neuroscience perspective. Laboratory experiences are designed to build competencies in neurologic interventions, such as serial casting, body weight support treadmill training, neuromuscular electrical stimulation, balance training, and vestibular rehabilitation. Students have opportunity to attend specialized practice setting and learn from experts in those areas, such as clinical motion analysis center and comprehensive diagnostic balance center.

Texts:

Shumway-Cook A, Woollacott M: Motor Control: Translating Research into Clinical Practice, 3rd ed. Williams & Wilkins, Baltimore MD, 2007

Herdman SJ: Vestibular Rehabilitation, 3rd edition. FA Davis Company, Philadelphia, 2007

THIRD YEAR
Spring/Summer Semester

PT 696 CLINICAL EDUCATION V

Final nine-week full-time clinical experience in a variety of physical therapy practice settings. Clinical site assignment will allow students to complete any remaining program clinical education requirements or to experience practice in settings of interest to them. At completion of this experience, students will be prepared to enter clinical practice.