MPO Course Descriptions

Year 1 Autumn Quarter

REHAB 522 – Neurophysiological Topics in Rehabilitation Medicine (2 cr)
This course reviews traditional physiological concepts related to the nervous, musculoskeletal, and cardiopulmonary systems as a foundation for rehabilitation practice. A main focus of the course will be on neurophysiological topics. Material includes recent advances in research and applicable case studies.

REHAB 544 – Functional Anatomy for Rehabilitation of the Extremities (+lab) (5 cr)
This course focuses on the general concepts of anatomy as well as an in-depth focus on the tissues of the upper and lower extremities, including all of the bones and muscles that account for movement and stabilization of the various joints, their functions, origins, insertions, and innervations. Along with the bones and muscles of the extremities, time will be spent on other tissues such as nerves, arteries, veins, ligaments, fascia, and other tissues. This course includes a gross anatomy lab, where you will be able to explore the tissues discussed in lectures on human cadavers.

REHAB 504 – Procedures I: Basic Physical Examination of the Extremities (2 cr)
Rehab 504 develops technical skills and theoretical foundations in the examination of patients from a neuromusculoskeletal perspective. Special emphasis is on systematic examination of the extremities, including observation and posture assessment, testing range of motion and strength, applied anatomy, flexibility, communication during the exam, screening adjacent body regions, and special tests.

Rehab 509 – Functional Assessment Skills (1 cr)
Functional Skills Assessment utilizes an active learning approach to provide knowledge, hands-on skills, verbal communication skills and professional behaviors related to patient care activities. Students will learn how to examine physiologic vital signs, to physically assist patients to perform bed mobility and transfer activities. Safety of the health care provider (student) and patient/client is of utmost importance throughout this course. Students will be provided guidance regarding clothing/footwear and management of the physical (furniture, equipment/supplies and personal items) to create a safe clinical care environment. Students will be instructed in and practice proper body mechanics in order to prevent personal injury. Students will gain experience with specialized equipment that reduces lifting and shear forces during mobility activities.

RHB PO 511 - Upper Limb Prosthetics I (4 cr)
This course focuses on three main content areas: 1) development of clinical reasoning skills in upper limb prosthetic examination and assessment of activity-based impairments and functional needs, 2) formulation of prosthetic interventions for individuals with transradial limb loss, and 3) development of psychomotor, problem-solving, and teamwork skills relevant to transradial limb loss.
RHB PO 501 - Prosthetics and Orthotics Skills (1 cr)
This skills course emphasizes the 1) ability to use materials, equipment and tools safely, 2) knowledge of psychomotor skills in the lab setting and 3) development of mechanical problem-solving skills with materials and equipment. This course stresses appropriate ergonomics (physiological principles) when performing hand skills. Discussions of mechanical and physical techniques, work place safety and elimination of waste (lean principles) are used to promote problem-solving skills, quality standards and sustainable practices.

Year 1 Winter Quarter

REHAB 533 – Diseases and Diagnoses in Rehabilitation (2 cr)
This two-quarter lecture series provides an introductory overview of the most common clinical conditions seen with patients receiving services in occupational therapy, physical therapy and prosthetics and orthotics. Lectures are contributed by faculty members of several departments within the School of Medicine and related health services schools, and by specialists based at affiliated hospitals. The focus of this series is on the clinical presentation of these conditions and their medical and surgical evaluation and management. OT/PT, P&O evaluation and intervention strategies are presented in other curriculum courses, which build on the foundation gained in this coursework. The intent is to gain an understanding of: 1) pathological mechanisms involved in conditions presented, 2) associated clinical features and the condition’s natural history, 3) general and specific medical approaches to evaluation and management, 4) strategies for preventing or minimizing additional pathology and disability.

REHAB 545 – Functional Anatomy for Rehabilitation of the Spine (+lab) (4 cr)

REHAB 551 – Neurobiology in Rehabilitation (5 cr)
This course provides an introduction to the structure and function of the human nervous system. In addition, clinical manifestations of dysfunction of major neural elements will be discussed.

REHAB 506 – Procedures II: Physical Exam of the Spine (2 cr)
This course develops technical skills and theoretical foundations in the examination of patients from a neuromusculoskeletal perspective. Special emphasis is on systematic examination of the spine, including observation and posture assessment, functional testing, range of motion, strength, reflexes, applied anatomy, flexibility, medical screening, communication during the examination, screening adjacent body regions, and special tests. The emphasis is on spine examination with integration of systems review and significance of medical problems in this context. Material is presented to enhance skill development as well as to encourage basic clinical reasoning using basic spine clinical cases.

RHB PO 502 – Professional and Practice Issues (1 cr)
This course addresses practical and logistical issues in prosthetic and orthotic practice management. It includes the preparation of appropriate clinical documentation adhering to legal compliance, and implementation of reimbursement processes and regulations that impact P&O practice (e.g., federal coding, state regulations, and third party insurance reimbursements). You will engage in thoughtful discussions involving professional behavior and appropriate patient management with awareness of professional ethics and patient/clinician boundaries.

**RHB PO 515 – Upper Limb Orthotics (3 cr)**
This course focuses on integrating information from anatomy and patient evaluation procedures courses with knowledge and skills of orthotic theory and clinical practice related to upper limb orthotic interventions. Students develop treatment plans by integrating knowledge of available research with current treatment protocols in problem-solving exercises. Learning is achieved through lectures, discussions, and laboratory experiences. Class lectures and discussions will focus on clinical pathologies while the laboratory sessions provide experiential activities to integrate patient evaluation techniques and procedures in the formulation of orthotic treatment plans, obtain casts and measurements and application of orthotic principles for the selected projects.

**Year 1  Spring Quarter**

**REHAB 534 – Diseases and Diagnoses in Rehabilitation (2 cr)**
This two-quarter lecture series provides an introductory overview of the most common clinical conditions seen with patients receiving services in occupational therapy, physical therapy and prosthetics and orthotics. Lectures are contributed by faculty members of several departments within the School of Medicine and related health services schools, and by specialists based at affiliated hospitals. The focus of this series is on the clinical presentation of these conditions and their medical and surgical evaluation and management. OT/PT, P&O evaluation and intervention strategies are presented in other curriculum courses, which build on the foundation gained in this coursework. The intent is to gain an understanding of: 1) pathological mechanisms involved in conditions presented, 2) associated clinical features and the condition’s natural history, 3) general and specific medical approaches to evaluation and management, 4) strategies for preventing or minimizing additional pathology and disability.

**REHAB 548 – Kinesiology in Rehabilitation (4 cr)**
Kinesiology for Rehabilitation is a combined introduction to kinesiological concepts for rehabilitation professionals in Physical Therapy, Occupational Therapy and Prosthetics and Orthotics programs. The course consists of a lecture and laboratory component. Lectures provide the basic concepts and scientific foundations of kinesiology of human movement. Laboratory instruction focuses on practical experience and problem-solving in kinesiology by exploring and developing proficiency in a framework of observation, analysis, and description of normal and pathological human movement.
Rehab 509 – Functional Assessment Skills (1 cr)
*Functional Skills Assessment* utilizes an active learning approach to provide knowledge, hands-on skills, verbal and written communication skills and professional behaviors related to patient care activities. Students will learn how to assess and interpret vital signs and physically assist patients to perform ambulation activities. Safety of the health care provider (student) and patient/client is of utmost importance throughout this course. Students will be provided guidance regarding clothing/footwear and management of the physical setting (furniture, equipment/supplies and personal items) to create a safe clinical care environment. Students will be instructed in and practice proper body mechanics in order to prevent personal injury. Students will receive training on fitting and use of various assistive mobility devices and proper technique to educate and safely guard patients while walking with these devices on various surfaces (e.g. flat, ramps, curbs, and stairs).

RHB PO 512
This is the second of a two-course series integrating the principles from Upper Limb Prosthetics I. This course provides further learning experiences in prosthetic management and prescription considerations of body powered and electric components and control options. Critical thinking and appropriate clinical decision making are encouraged through discussions and case study exercises that consider prosthetic systems for all levels of upper limb amputation.

RHB PO 581 – Outcome Measures for the P&O Clinic (2 cr)
This course examines the development and use of health-related outcome measures suited to the P&O clinical environment. In this course, students explore the relationship between measurement constructs and patient populations; explain the psychometric properties of scaling, reliability, validity, responsiveness, and sensitivity; and articulate how outcome measures can be used to benefit patient care. Students demonstrate their ability to select, implement, and critically evaluate patient outcomes using appropriate and specific outcome measures through simulations, written examinations, and development of outcomes assessment strategies suited to the clinical environment.

RHB PO 541 – Engineering Concepts (3 cr)
This course focuses on the external forces acting on a device and the internal stresses and strains occurring within the device. The goals for this course are to 1) develop your intuition and fluency with mechanical and material science concepts and 2) enhance your ability to critically evaluate physical, mechanical properties and behavior of P&O devices and components.
REHAB 566 – Special Topics (1cr)
This course focuses on various medical conditions and interventions related to orthotics through the integration of information of previous coursework in addition to current course content in Rehab 533, Diseases and Diagnoses. Students will relate pathology/pathophysiology, etiology, and clinical presentation to clinical patient management.

REHAB 554 – Perspectives in Interprofessional Practice
The purpose of this course is to provide the learner with a unique opportunity to begin exploration of practice from an interprofessional (IP) perspective. Implicit in this perspective is the belief that effective practice requires collaboration among multiple professionals, in addition to collaboration with the patients/clients and their families. All of the professional preparation programs in the Department of Rehabilitation Medicine and the Department of Speech and Hearing Sciences support IP education, that is, education that “occurs when two or more learn with, from, and about each other in order to improve collaboration and the quality of practice” (Lerner, Magrane, Friedman, 2009). The degree program participating in this course include Doctor of Physical Therapy, Masters of Occupational Therapy, Masters of Prosthetics and Orthotics, and Masters of Science in Speech-Language Pathology (Core and Medical programs).

Year 1  Summer Quarter
RHB PO 521 – Lower Limb Prosthetics and Orthotics I: Theory and Application (5 cr)
This is the first of a two-course series on lower limb prosthetics and orthotics theory and application. Students integrate prior core foundational knowledge (anatomy, kinesiology, medical science, gait analysis, patient evaluation procedures, and functional skills) with new knowledge and skills of prosthetic and orthotic (P&O) theory, patient evaluation and clinical practice. Instruction methods offer the student the opportunity to actively analyze, evaluate, and synthesize principles and theories in the development of P&O intervention plans for individuals with lower limb dysfunction or amputation.

RHB PO 522 – Lower Limb Prosthetics I: Clinical Practice (4 cr)
Explains and applies biomechanical principles of prosthetic gait and alignment to treatment of individuals with amputations below the knee. Students develop individualized treatment plans that demonstrate analysis of client needs, application of transtibial socket design, prescription principles, and components. Integrates knowledge of available research and protocols into the planning process.

RHB PO 523 – Lower Limb Orthotics I: Clinical Practice (4 cr)
This is the first of a two-course series focusing on lower limb orthoses used in the treatment of lower limb dysfunction. This course relies on the integration of prior core foundational knowledge (anatomy, kinesiology, clinical pathology, gait analysis, patient evaluation procedures, technical skills) with new knowledge and skills necessary for clinical practice. The course content and learning activities will assist you in the further development and refinement
of skills necessary for the implementation of orthotic intervention plans for individuals with lower limb dysfunction below the knee. The clinical experience portion of the course focuses on patient evaluation, formulation of orthotic treatment plans, and implementation of technical competencies. The laboratory sessions provide the student with the background knowledge and technical skills of the procedural processes necessary for entry-level clinical practice.

**REHAB 566 – Introduction to Research (2 cr)**
The class is the first of a two-quarter series. The overall goal of this course is to prepare students to be skilled and effective consumers of the literature through understanding key elements of clinical research methods, and critical review of clinical and scientific literature in prosthetics and orthotics (P&O).

**RHB PO 561 – Clinical Rotation I (2 cr)**
This is the first in a four-quarter series of clinical rotation courses. The purpose is to offer learners the opportunity to integrate classroom learning into the reality of daily clinical practice treating patients across the life span in a variety of settings (e.g., hospitals and private outpatient clinics). During this rotation, learners actively observe patient care, perform patient histories and evaluation procedures, and develop clinical patient care psychomotor skills under the guidance and mentorship of clinical preceptors.

**Year 2  Autumn Quarter**

**REHAB 510 – Rehabilitation Psychology (2 cr)**
This course will focus on 1) understanding assimilation of disability, participation in rehabilitation, management of behavior, and maintenance of performance from both the practitioner and patient perspective, 2) the role of the psychologist in the rehabilitation team. Includes case study and case conference materials.

**RHB PO 524 – Lower Limb Prosthetics and Orthotics II:  Theory and Application (5 cr)**
This is the second of a two-course series on lower limb prosthetics and orthotics (P&O) theory and application. Students integrate prior core foundational knowledge (anatomy, kinesiology, medical science, gait analysis, patient evaluation procedures, and functional skills) and knowledge acquired in RHB PO 521 with new knowledge and skills of P&O theory, patient evaluation and clinical practice. Instruction methods offer the student the opportunity to actively analyze, evaluate, and synthesize principles and theories in the development of P&O intervention plans for individuals with lower limb dysfunction or limb absence.

**RHB PO 525 – Lower Limb Prosthetics II:  Clinical Practice (3 cr)**
This is the second of a two-course series on lower limb prostheses used in the treatment of transtibial limb loss. This course focuses on integrating prior core foundational knowledge (anatomy, kinesiology, medical science, gait analysis, patient evaluation procedures, and functional skills) with new knowledge and skills necessary for clinical practice. This integration
of knowledge will assist in the development and implementation of prosthetic intervention plans for individuals with transtibial amputation. The clinical experience portion of the course focuses on patient evaluation, formulation of prosthetic treatment plans, and implementation of technical competencies. The laboratory sessions provide the student with the background knowledge and technical skills of the procedural processes necessary for entry-level clinical practice.

RHB PO 526 – Lower Limb Orthotics II: Clinical Practice (3 cr)
This is the second of a two-course series on lower limb orthoses used in the treatment of lower limb dysfunction. This course focuses on integrating prior core foundational knowledge (anatomy, kinesiology, medical science, gait analysis, patient evaluation procedures, and functional skills) with new knowledge and skills necessary for clinical practice. This integration of knowledge will assist in the development and implementation of orthotic intervention plans for individuals with lower limb dysfunction below the knee. The clinical experience portion of the course focuses on patient evaluation, formulation of orthotic treatment plans, and implementation of technical competencies. The laboratory sessions provide the student with the background knowledge and technical skills of the procedural processes necessary for entry-level clinical practice.

RHB PO 533 – Spinal Orthotics I: Trauma (2 cr)
This course focuses on integrating previous core foundational knowledge (anatomy, kinesiology, diseases and diagnosis, patient evaluation procedures) with knowledge and skills of orthotic theory and practice related to trauma and degenerative etiologies. Learning is achieved through lectures, discussions, and laboratory experiences. Problem-solving and critical thinking skills are facilitated through the use of clinical cases.

RHB PO 582 – Critical Evaluation of the Prosthetics and Orthotics Literature (1 cr)
The overall goal of this course is to prepare students to be skilled and effective consumers of the literature through exposure to and critical review of clinical and scientific literature in prosthetics and orthotics (P&O). In this course, students identify key characteristics of printed information such as authorship, audience, indexing, and peer review; discriminate among various types of contemporary P&O literature; and discuss the scientific quality and clinical relevance of peer-reviewed scientific literature. Students integrate knowledge of research methodologies, outcome measures, and analysis techniques with clinical experience in the critical evaluation of select examples of scientific literature. Students demonstrate an ability to inform clinical practice with scientific literature through group discussions, written reviews of clinical/scientific publications, and presentation of a scholarly critique.

RHB PO 562 – Clinical Rotation II (1 cr)
This is the second in a four-quarter series of clinical rotation courses. The purpose is to offer students the opportunity to integrate classroom learning into the reality of daily clinical practice treating patients across the life span in a variety of settings (e.g., hospitals and private outpatient clinics). During this rotation, students actively observe patient care, perform patient histories and evaluation procedures, and develop clinical patient care psychomotor skills under
the guidance and mentorship of clinical preceptors. Students complete the 80 hours at clinical rotation sites in the Seattle area during fall quarter.

Year 2  Winter Quarter

RHB PO 530 – Lower Limb Orthotics III: Theory and Application
This is the third course on lower limb orthotics theory and application. Students build upon prior knowledge and skills acquired from Lower Limb Orthotics I, II: Theory and Application. Students integrate competencies gained from the core foundational knowledge (anatomy, kinesiology, medical science, gait analysis, patient evaluation procedures, and functional skills) with new knowledge and skills regarding the orthotic management of the lower limb involving the ankle, knee, and hip. Students integrate knowledge of biomechanics, pathomechanics, gait analysis, and patient assessment in the formulation of orthotic treatment plans integrating current clinical practice protocols and research evidence. Instruction methods offer the student the opportunity to actively analyze, evaluate, and synthesize principles and theories in the development of orthotic intervention plans for individuals with lower limb dysfunction.

This course is held in conjunction with the associated clinical course, RHB PO 531, LLO III: Clinical Application. The exact times may not always correspond with the identified schedule based on the timing for certain projects and guest speaker availability, so please refer to the daily combined schedule for the accurate times and content.

RHB PO 531 – Lower Limb Orthotics III: Clinical Practice
This is the third clinical practice course on lower limb orthoses used in the treatment of lower limb dysfunction and is directly associated with Lower Limb Orthotics III: Theory and Application. Students integrate prior core foundational knowledge (anatomy, kinesiology, medical science, gait analysis, patient evaluation procedures, and functional skills) with new knowledge and skills necessary for clinical practice related to the ankle, knee and hip. This integration of knowledge assists in the development and implementation of orthotic intervention plans for individuals with lower limb dysfunction at the knee and above. The clinical experience portion of the course focuses on patient evaluation, formulation of orthotic treatment plans, and implementation of technical competencies. Emphasis is placed on professional competencies focusing on communication, critical thinking, and assessment of orthotic treatment plan efficacy using accepted outcome measures. In laboratory sessions, students integrate prior knowledge of design principles, material science, and fabrication process; acquire knowledge of components and design options; and analyze the efficacy of orthotic treatment plans in achieving desired biomechanical goals and outcomes.

RHB PO 534 – Spinal Orthotics II: Scoliosis – (3 cr)
This course focuses on integrating previous core foundational knowledge (anatomy, kinesiology, diseases and diagnoses, patient evaluation procedures) with knowledge and skills of orthotic theory and practice related to scoliosis and kyphosis. Learning is achieved through
lectures, discussions, and laboratory experiences. Problem-solving and critical thinking skills are facilitated through the use of case scenarios.

**RHB PO 583 – Evidence Based Practice I (3 cr)**
EBP I focuses on the use, critical evaluation, and synthesis of evidence to answer clinical problems. This course encourages students to become consumers of evidence by developing an understanding of how to acquire and incorporate evidence into routine clinical practice. Course content and activities will build upon prior knowledge of clinical content, research design, psychometric properties, and critical evaluation of scientific literature.

**RHB PO 563 – Clinical Rotation III (1 cr)**
This is the third in a four-quarter series of clinical rotation courses. The purpose is to offer students the opportunity to integrate classroom learning into the reality of daily clinical practice treating patients across the life span in a variety of settings (e.g., hospitals and private outpatient clinics). During this rotation, students actively observe patient care, perform patient histories and evaluation procedures, and develop clinical patient care psychomotor skills under the guidance and mentorship of clinical preceptors. Students complete the 80 hours at clinical rotation sites in the Seattle area. The required documents for the rotation must be submitted on the associated canvas site.

**Year 2 Spring Quarter**

**RHB PO 528 – Lower Limb Prosthetics III: Theory and Application (5 cr)**
Develops individualized prosthetic treatment plans based on a comprehensive knowledge of prosthetic gait, alignment, transfemoral socket design, and component principles. Develops support treatment plans by integrating knowledge of available research and treatment protocols into the decision-making process.

**RHB PO 529 – Lower Limb Prosthetics III: Clinical Practice (6 cr)**
Advanced instruction in application of biomechanical principles of prosthetic gait and alignment to treatment of individuals with amputations above the knee. Includes obtaining histories, assessing physical function, and taking residual limb impressions and measurements to prove prosthetic care.

**RHB PO 527 – Pediatric Prosthetics and Orthotics (2 cr)**
This course focuses on specific pediatric medical conditions and interventions through the integration of information of previous coursework. Students will discuss pathology/pathophysiology, etiology, clinical presentation, natural history, and surgical and medical management. Emphasis will be placed on the changes in biomechanics, pathomechanics and functional considerations throughout the growing years. Implications of various medical interventions will be discussed based on the available literature.
RHB PO 584 – Evidence Based Practice II (3 cr)
This course focuses on the use of theory, evidence, and experience to develop clinical solutions. Students will also learn to develop quantitative and qualitative assessment strategies to evaluate clinical solutions. The main goal of the course is to encourage students to become consumers of evidence to answer clinically relevant prosthetic and orthotic questions. This course builds upon prior knowledge of research design, psychometric properties, and critical evaluation/synthesis of scientific literature.

RHB PO 564 – Clinical Rotation IV (1 cr)
This is the fourth in a four-quarter series of clinical rotation courses. The purpose is to offer students the opportunity to integrate classroom learning into the reality of daily clinical practice treating patients across the life span in a variety of settings (e.g., hospitals and private outpatient clinics). During this rotation, students actively observe patient care, perform patient histories and evaluation procedures, and develop clinical patient care psychomotor skills under the guidance and mentorship of clinical preceptors. Students complete the hours at clinical rotation sites in the Seattle area during the quarter dates.