

# **Orthotics and Prosthetics Program**

## **Course Descriptions for AY 2016-2017**

### **Anatomical Sciences (for O&P)**

**OPANA 63101**

**Credit hrs: 3**

**Course Director: David Rowley, PhD**

#### **Course Description:**

- Anatomical Sciences for O&P is designed to provide the student an extensive background in the fundamentals of human anatomy. The course is presented in lecture, small group laboratory, and independent study format. Anatomic structures are reviewed in lecture. The student is then expected to locate, identify and explain the function and relationships of structures using cadavers, dissections, radiograph images, and static models. The course is structured to provide an anatomical basis for understanding the physical examination and structural changes associated with illness and injury of each major organ and body system.

### **Cultural Competency**

**OPCC-61401**

**Credit hrs: 1**

**Course Director: Carl Fasser, PA**

#### **Course Description:**

- The course introduces students to issues surrounding cultural awareness and sensitivity pertaining to the diversity and uniqueness of populations to be encountered as health care practitioners and elsewhere through lectures, discussions, small group activities, and participation in community events. Specifically, the course explores personal bias, communication styles, belief systems, alternative health care practices, family roles, and the relationship of these issues to perceptions of culture, socioeconomic status, and provision of healthcare.

### **Health Behavioral Counseling**

**AHHBC 62201**

**Credit hrs: 2**

**Course Director: Beth Garland, PhD**

#### **Course Description:**

- This course explores the theory and practice of counseling for health behavior change with a focus on application of Motivational Interviewing skills to cancer-related and other health-risk behaviors. The stages of behavior change are introduced using the framework of the Transtheoretical Model along with social learning theory. Elements of the therapeutic alliance and the principles of harm reduction are introduced along with socializing the patient to motivational health behavior change counseling. Modeling through role play is used to develop and refine a student's ability to identify risk, assess readiness for change, and offer messages designed to strengthen the patient's commitment to change. Observations of self-help and patient support group sessions are used to further socialize students to the degree to which individuals are committed to change. These experiences shall help the student develop an intimate understanding of the process of change and thereby increase empathy for patients attempting to improve their own health behaviors and adhere to challenging treatment regimens.

### **Biomechanics Fundamentals**

**OPBMF 62101**

**Credit hrs: 2**

**Course Director: Jared A. Howell, MS, CPO**

**Course Description:**

- Biomechanics Fundamentals introduces the study and practice of evaluating and quantifying human movement through both simple and complex means. Biomechanics Fundamentals begins with an introduction to biomechanics as a discipline and explores application to human movements. Approaches include: static skeletal, muscular, and neurological considerations for human movement, dynamic force distribution, materials behavior, and lever arms. Presentations of clinical scenarios and corresponding biomechanical rationale for O&P intervention are the primary method. Skills pertaining to goniometric observations and linear and angular kinematic and kinetic calculations are also introduced. Biomechanics Fundamentals is part one of a two-part course.

**Materials Science and Selection in O&P****OPMSS 62102****Credit hrs: 2****Course Director: Michael van Wie, PhD****Course Description:**

- Materials Science and Selection for O&P begins with an introduction to the characterization and classification of materials in general. It then explores the materials specifically used in the construction of orthotic and prosthetic devices, both custom and pre-fabricated, and strategies of selecting from among them for specific clinical uses. Classifications and properties of metals, plastics, foams, leather, and other materials are introduced and linked to direct applications in devices and components in O&P. Choices for material properties are compared and contrasted. Numerous clinical and technical applications are exemplified throughout the course.

**Foundations of O&P****OPFOP 62101****Credit hrs: 2****Course Director: Joshua B. Utay, MEd, CPO****Course Description:**

- The Foundations of Orthotics and Prosthetics class is designed to provide an introduction to major themes covered during the didactic year of the program. Certain content from pre-requisite courses such as anatomical terms, essential kinesiology concepts, normal human gait, and commonly-applied statistical measures are reviewed to provide the framework for success in the didactic year. Scopes of Practice defined by the American Board for Certification in O&P (ABC), and educational and clinical program accreditation standards of the National Commission of Orthotics and Prosthetics Education (NCOPE) are explained and contextualized. Students learn lab safety, common materials selection, and other topics essential to the learning and practice of O&P. Students are introduced to concepts that recur throughout the curriculum such as an appreciation for evidence-based clinical practices, the role of research in modern practice, psychosocial factors affecting care, and cultural awareness.

**Physical Examination I****OPPEA 62101****Credit hrs: 2****Course Director: Joshua B. Utay, MEd, CPO****Course Description:**

- Physical Examination I (PE I) explores full scope of a physical bodily exam in the context of the evaluation for and provision of clinical O&P services. Physical Examination I has emphasis on manually determining the range of motion (ROM) and muscle strength (MMT) of major joints in the body with respect to typical presentation and common pathological conditions, inclusive of musculoskeletal, neurological, congenital, and developmental

conditions. PE I Focuses primarily on the spine and upper limb. This course content is functionally continued in PE II where the lower limb is the focus.

### **Spinal & Cranial Orthotic Management**

**OPSCO 66101**

**Credit hrs: 6**

**Course Director: Joshua B. Utay, MEd, CPO**

#### **Course Description:**

- Spinal & Cranial Orthotic Management covers a comprehensive range of orthotic management of the head and all spinal levels. Examples of devices include orthoses for the cervical, thoracic, lumbar, and sacral levels, alone and in combinations, cranial molding helmets, and face masks. Bony and muscle anatomy, surface anatomy, muscle physiology, kinesiology, and biometrics relative to the spine and head are covered in depth. Pathologies and conditions commonly treated with spinal orthoses are explored, historical orthotic approaches are reviewed, and modern treatment philosophies are covered in depth. Students learn about, observe, and then perform essential aspects of spinal and cranial orthotic care including patient assessment and communication, device design recommendation, measurement and casting, component and material selection, positive model optimization, device fabrication, device application and fitting principles, patient device training, device maintenance, and patient follow up. Importance of proper patient compliance is highlighted.

### **Upper Limb Orthotic Management**

**OPULO 64101**

**Credit hrs: 4**

**Course Director: Ashley H. Mullen, MSAT, CPO**

#### **Course Description:**

- Upper Limb Orthotic Management covers a comprehensive range of orthotic management of all aspects of the upper limb. Examples of devices include orthoses for the shoulder, elbow, forearm, wrist, hand, thumb, and fingers. Bony and muscular anatomy, surface anatomy, muscle physiology, kinesiology, and biometrics relative to the upper limb are reviewed, and conditions commonly treated with upper limb orthoses are explored alongside their corresponding historical and contemporary approaches to orthotic intervention. Students learn about, observe, and then perform essential aspects of upper limb orthotic care including: patient assessment and communication, device design recommendation, measurement and casting, component and material selection, positive model optimization, device fabrication, device application and fitting principles, patient device training, device maintenance, and patient follow up.

### **Upper Limb Prosthetic Management**

**OPULP 69101**

**Credit hrs: 9**

**Course Director: Fanny D. Schulte, MEd, MS, CP**

#### **Course Description:**

- Upper Limb Prosthetic Management covers a comprehensive range of prosthetic management of all amputation levels of the upper limb. Bony and muscular anatomy, surface anatomy, surgical amputation techniques, muscle physiology, kinesiology, and biometrics relative to the upper limb are covered in depth. Conditions resulting in upper limb amputation are explored, historical prosthetic devices and approaches are reviewed, and modern prosthetic philosophies and components are covered in depth. Students learn about, observe, and then perform essential aspects of upper limb prosthetic care including patient assessment and communication, device design recommendation, terminal device categorization and selection, measurement and casting, component and material

selection, positive model optimization, device fabrication, prosthetic alignment and transfer, device application and fitting principles, patient device training, device maintenance, and patient follow up.

## **Principles of Professional Practice**

### **OPPPP 62101**

**Credit hrs: 2**

**Course Director: Jared A. Howell, MS, CPO**

#### **Course Description:**

- This course conveys and applies modern administrative and documentation principles related to the provision of comprehensive prosthetic and orthotic care. It introduces students to professional issues related to contemporary clinical practice and exposes them to proper terminology for use in the medical and healthcare field. Practice and business management topics and resources are also addressed in this course complete with input from regional practice / thought leaders.

## **Clinical Skills Development I**

### **OPCDA 73101**

**Credit hrs: 3**

**Course Director: Jared A. Howell, MS, CPO**

#### **Course Description:**

- This course is designed to provide directed, pre-clinical training to students during the didactic year in order to ensure proper achievement of baseline clinical competencies prior to entering the clinical phase of their training. The course is a practical assessment course which includes a series of sequenced, graded clinical interactions designed to develop clinical skills related to: patient interaction and bed side manner, proper physical assessment, interviewing skills, formulation of a treatment plan, proper follow-up, ethical care, and adherence to sound social and business practices. Although graded assessments occur throughout the coursework, this course culminates in an Objective Skill Clinical Examination, or OSCE. The OSCE is a high-stakes exam that assess each of the basic competencies through a series of simulated clinical experiences. OSCE exams are video-recorded through simulation laboratories allowing students the opportunity to view their own interactions and learn from the experiences.

## **Health Research Methods**

**Credit hrs: 2**

**Course Director: T. David Johnson, PhD**

### **AHHRM 62441**

#### **Course Description:**

- This course introduces the participant to research methods used in clinical and community-based research, evidence-based practices used to evaluate potential treatment alternatives, and critical evaluation of current published literature. The course uses lectures, practice exercises and online activities to involve the learner in research proposal development and the interpretation of research performed by others. Assignments assist in learner application and reinforcement of information presented during lecture and the text and articulate knowledge gained promoting constructive criticism and critical reflection.

## **Medical Ethics**

### **OPETH 62421**

**Credit hrs: 2**

**Course Director: Jennifer Blumenthal-Barby**

#### **Course Description:**

- Medical Ethics course focuses the development of ethical principles and standards in the practice of medicine and other types of healthcare delivery. It has emphasis in case-based scenarios and discussion groups to effectively teach and model ethical principles. This course has three components: (1) lectures, (2) small group sessions, and (3) clinical ethics rounds, and it combines students from multiple disciplines to ensure the fullest breadth and depth of clinical care is covered.

### **O&P Research I**

#### **OPORA 61201**

**Credit hrs: 1**

**Course Director: Ashley H. Mullen, MSAT, CPO**

#### **Course Description:**

- O&P Research I (OPR I) contains detailed explanations of the requirements and expectations for the master's-level research project and related milestones and deliverables. Students begin working with their faculty and research mentors on identifying areas of interest, determining the state of the science in the chosen area(s), and what new areas of research may advance understanding of orthotic and/or prosthetic care. By the end of the course, students declare a topic for their research project and submit a plan to match available resources with research objectives by required deadlines. This effort includes both a brief presentation of the project's scope and hopes and a manuscript containing: a statement of the research question, the initial literature search strategy, research hypothesis(-es), and anticipated timeline of the completed works.

### **Advanced Biomechanics and Clinical Outcomes**

#### **OPABM 63201**

**Credit hrs: 3**

**Course Director: Jared A. Howell, MS, CPO**

#### **Course Description:**

- Advanced Biomechanics and Clinical Outcomes continues the study and practice of evaluating and quantifying human movement through simple and complex means begun in Biomechanics Fundamentals. Established, "low-tech," clinically-relevant measures and clinical outcomes instruments that individual practitioners may perform on a regular basis with minimum initial investment begin this course. Both quantitative and qualitative varieties are explored, including surveys. Students also gain experience evaluating novel instruments not yet validated for use in O&P. Biomechanical principles and clinical O&P concepts are applied to gait / movement studies of moderate- to high-tech approaches, up to and including fully-equipped motion-analysis laboratory. Application of fundamental biomechanical principles to clinical practice is accomplished through presentation of clinical scenarios and corresponding biomechanical rationales for orthotic and/or prosthetic intervention.

### **Physical Examination II**

#### **OPPEB 63202**

**Credit hrs: 3**

**Course Director: Joshua B. Utay, MEd, CPO**

#### **Course Description:**

- Physical Examination II (PE II) continues the study of a physical bodily exam in the context of the evaluation for and provision of clinical O&P services. Physical Examination II has emphasis on manually determining the range of motion (ROM) and muscle strength (MMT) of major joints in the body with respect to typical presentation and common pathological conditions, inclusive of musculoskeletal, neurological, congenital, and developmental conditions. PE II focuses primarily on the lower limb. This course content is functional continuation of in PE I where the spine and upper limb comprised the focus.

## **Pedorthic Management**

**OPPED 63103**

**Credit hrs: 3**

**Course Director: Ashley H. Mullen, MSAT, CPO**

### **Course Description:**

- Pedorthic Management covers orthotic management of the foot and ankle. Devices covered are those distal to the malleoli. Examples of devices include therapeutic shoes, accommodative foot orthoses, functional foot orthoses, and subtalar control foot orthoses (UCBL FO's). The course provides an overview of custom shoewear, as well as shoe modifications. Bony, muscular, and neurological anatomy is reviewed, along with pathological conditions of the foot and ankle. Foot and lower limb pathologies, kinesiology, gait analysis, and orthotic treatment are explored in depth. Students learn about, observe, and then perform essential aspects of pedorthic management, including patient evaluation and initial assessment, impression taking, device design, positive model modification, material selection, device fitting, device modification, and patient outcome assessment.

## **Lower Limb Orthotic Management I**

**OPFAO 65201**

**Credit hrs: 5**

**Course Director: Joshua B. Utay, MEd, CPO**

### **Course Description:**

- Lower Limb Orthotic Management I (LLO I) incorporates and applies Pedorthic Management to orthotic management of all aspects of the lower limb below the knee. Devices explored in depth include the large number of variants of ankle-foot orthoses (AFO's) used regularly in modern lower-limb, orthotic practice. Bony and muscular anatomy, surface anatomy, muscle physiology, kinesiology, weight-bearing strategies, and biometrics relative to the foot and ankle and gait are covered in depth. Conditions commonly treated with footwear and orthoses of the feet and/or ankles are explored, historical orthotic approaches are reviewed, and modern treatment philosophies are covered in depth. Students learn about, observe, and then perform essential aspects of foot and ankle orthotic care including patient assessment and communication, device design recommendation, measurement and casting, component and material selection, positive model optimization, device fabrication, device application and fitting principles, gait deviation detection and diagnosis, patient device training including shoe wear, device maintenance, and patient follow up.

## **Lower Limb Orthotic Management II**

**OPLLO 66201**

**Credit hrs: 6**

**Course Director: Ashley H. Mullen, MSAT, CPO**

### **Course Description:**

- Lower Limb Orthotic Management II (LLO II) covers the comprehensive range of orthotic management of all aspects of the lower limb involving the knee joint and points proximal. This course integrates principles of bracing the lower limb below the knee (LLO I) as indicated. Bony and muscular anatomy, surface anatomy, muscle physiology, kinesiology, weight-bearing strategies, and biometrics relative to the knee and hip and gait are covered in depth. Pathologies and conditions commonly treated with orthoses of the hip and knee are explored, historical orthotic approaches are reviewed, and modern treatment philosophies are covered in depth. Students learn about, observe, and then perform essential aspects of lower limb orthotic care including patient assessment and communication, device design recommendation, measurement and casting, component and material selection, positive model optimization, device fabrication, device application and fitting principles, gait deviation detection and diagnosis, patient device training including shoe wear, device maintenance, and patient follow up.

## **Lower Limb Prosthetic Management I**

**OPLLA 68201**

**Credit hrs: 8**

**Course Director: Jared A. Howell, MS, CPO**

### **Course Description:**

- Lower Limb Prosthetic Management I (LLP I) covers a comprehensive range of prosthetic management of amputation levels of the lower limb through the tibia and points distal. Bony and muscular anatomy, surface anatomy, muscle physiology, kinesiology, and biometrics relative to the lower limb are covered in depth. Conditions resulting in lower limb amputation are explored, historical prosthetic approaches to transtibial prosthetics practice are reviewed, and modern transtibial prosthetic devices, components, and philosophies are covered in depth. Students learn about, observe, and then perform essential aspects of transtibial prosthetic care (and points distal) including patient assessment and communication, K-Level evaluation and designation, device design recommendation, measurement and casting, component and material selection, positive model optimization, device fabrication, prosthetic alignment and transfer, device application and fitting principles, gait deviation detection, patient device training, gait considerations, device maintenance, volume management, and patient follow up. LLP I also covers prosthetic feet of all kinds, partial foot management, and bilateral amputee management.

## **Contemporary Practice and Synthesis**

**OPCPS 62201**

**Credit hrs: 2**

**Course Director: Jared A. Howell, MS, CPO**

### **Course Description:**

- This course is designed to introduce students to advanced concepts in prosthetics and orthotics and to provide a forum for discussing emerging technologies and the latest applicable research. While this course has some advanced concepts that are covered on a regular basis, much of the content is established as trends and technologies change.

## **Lower Limb Prosthetic Management II**

**OPLLB 65202**

**Credit hrs: 5**

**Course Director: Jared A. Howell, MS, CPO**

### **Course Description:**

- Lower Limb Prosthetic Management II (LLP II) covers the comprehensive range of prosthetic management of amputation levels of the lower limb at the knee and points proximal. Bony and muscular anatomy, surface anatomy, surgical amputation techniques, muscle physiology, kinesiology, and biometrics relative to the lower limb are reviewed as applicable. Pathologies and conditions resulting in lower limb amputation are reviewed, historical approaches to transfemoral prosthetics practices are reviewed, and modern transfemoral prosthetic philosophies, components, and methods are covered in depth. Students learn about, observe, and then perform essential aspects of knee-disarticulation and proximal lower limb prosthetic care including patient assessment and communication, K-Level designation, device design recommendation, measurement and casting, component and material selection, positive model optimization, device fabrication, prosthetic alignment and transfer, device application and fitting principles, gait deviation detection, patient device training, gait considerations, device maintenance, volume management, and patient follow up. LLP II also covers knee and hip units, including microprocessor controlled devices and bilateral / multiple amputee management.

## **Advanced Topics in Orthotics and Prosthetics**

## **OPADT 62201**

**Credit hrs: 2**

**Course Director: Jared A. Howell, MS, CPO**

### **Course Description:**

- This course is designed to introduce students to advanced concepts in the practice of prosthetics and orthotics and to provide a forum for discussing emerging technologies and the latest applicable research. While this course has some advanced concepts that are covered on a regular basis, much of the content is established as trends and technologies change. Curriculum covers advanced topics that supplement and build on content gained in core basic science coursework. This course draws on strengths from clinical faculty, and outside guest lecturers.

## **O&P Research II**

### **OPORB 72102**

**Credit hrs: 2**

**Course Director: Ashley H. Mullen, MSAT, CPO**

### **Course Description:**

- O&P Research II (OPR II) continues the efforts from OPR I on developing and executing the research project. Students are expected to work with their research advisor(s) to independently organize research planning, data collection, data analysis, and manuscript preparations. The class is assembled at the mid-point of the semester for progress checks and group discussions about research topics and projects. Critiques by fellow students and instructors / mentors are performed resulting in direct feedback for each project. Students gather again at the end of the semester to submit the required deliverables of the project and discuss project progress with advisors and current and adjacent class cohorts.

## **Technical Skills Development Core**

### **OPTSD 71101**

**Credit hrs: 1**

**Course Director: Jared A. Howell, MS, CPO**

### **Course Description:**

- This required core rotation is design to give students a grasp on the technical aspects of clinical care. Students in this rotation shall develop best practices for the laboratory, including laboratory safety, and proper fabrication techniques to ensure patient safety. Efforts should be also made to understand material and component costs, effective and efficient shipping / stocking procedures, and any potential environmental impact. In this rotation, students further develop their technical abilities by spending the bulk of their day in the laboratory. Students are encouraged to work closely with a lab mentor who provides hands-on technical training. Students are also encouraged to work through several patient interactions from start to finish through fabrication and fitting of the device. This rotation includes equal exposure to prosthetic and orthotic concepts, and modification of prosthetic and orthotic positive models. To the extent possible, alternative fabrication models and processes may be explored. These may include CAD/CAM, carving, 3-D printing, and/or other mechanized techniques.

## **Pediatric Core**

### **OPPED 76101**

**Credit hrs: 6**

**Course Director: Jared A. Howell, MS, CPO**

### **Course Description:**

- This required core rotation is meant to provide comprehensive clinical experience in the field of pediatrics. Patient interactions in this rotation may include prosthetics and/or orthotics. Pre-graduate residents work closely



with pediatric orthotists and/or prosthetists to develop the necessary techniques and skills for pediatric care. This includes pediatric-specific pathologies, proper patient / parent communications, and therapist involvement. Pre-graduate residents learn appropriate precautions inherent in pediatric care and emulate protocols related to safety and comfort of pediatric patients. Students are exposed to a variety of clinical pathologies and challenges not often seen in the general adult population.

### **Institutional and Acute Core**

#### **OPINT 76101**

**Credit hrs: 6**

**Course Director: Jared A. Howell, MS, CPO**

#### **Course Description:**

- This required core rotation is meant to provide comprehensive clinical experience with an emphasis on acute conditions and inpatient care. Patient interactions in this rotation may include prosthetics and/or orthotics. Pre-graduate residents work closely with institution-based orthotists and/or prosthetists to develop the necessary techniques and skills for inpatient and outpatient clinical care. Pre-graduate residents in this rotation shall develop skills of assessing and diagnosing advanced pathologies related to their target population. Emphasis in this core is placed on open communication and participation with the broader healthcare team. Pre-graduate residents develop apply appropriate safety precautions and understand protocols related to patient contact and infection control.

### **O&P Research III**

#### **OPORC 72203**

**Credit hrs: 2**

**Course Director: Ashley H. Mullen, MSAT, CPO**

#### **Course Description:**

- O&P Research III continues efforts from OPR II on the individual research projects. Midway through, students present progress on their projects and preliminary results to classmates and mentors. Critiques and suggestions are offered on statistical analyses and results sections by students and faculty. Students individually gather remaining data, compute results, and construct remaining sections with mentors. Students gather one more time at the end of the semester to submit the required elements of the project and for class presentation of project progress to current and adjacent class cohorts.

### **Prosthetics Core**

#### **OPPCP 76201**

**Credit hrs: 6**

**Course Director: Jared A. Howell, MS, CPO**

#### **Course Description:**

- This required core rotation is meant to provide comprehensive clinical experience with an emphasis on prosthetic patient management. Patient interactions in this rotation are dedicated to prosthetics. Pre-graduate residents work closely with community based prosthetists to develop the necessary techniques and skills for comprehensive prosthetic care. Pre-graduate residents in this rotation shall develop assessment and evaluation skills necessary to formulate appropriate prosthetic interventions. Pre-graduate residents undergo the process from prescription to training and practice implementing the appropriate steps in that process. Proper handling of follow-up, maintenance and repairs is covered in detail. Pre-graduate residents are encouraged to openly communicate and participate with the healthcare team. Pre-graduate residents learn appropriate safety precautions and understand protocols related to patient contact, laboratory work, and infection control. Pre-graduate residents are required to complete appropriate documentation for all qualifying experiences.

## **Orthotics Core**

### **OPOCO 76201**

**Credit hrs: 6**

**Course Director: Jared A. Howell, MS, CPO**

#### **Course Description:**

- This required core rotation is meant to provide comprehensive clinical experience with an emphasis on orthotic patient management. Patient interactions in this rotation are dedicated to orthotics. Pre-graduate residents work closely with community based orthotists to develop the necessary techniques and skills for comprehensive orthotic care. Pre-graduate residents in this rotation shall develop assessment and evaluation skills necessary to recognize advanced pathologies and formulate appropriate orthotic interventions. Pre-graduate residents undergo the process from prescription to training and practice implementing the appropriate steps in that process. Proper handling of follow-up, maintenance and repairs is covered in detail. Pre-graduate residents are encouraged to openly communicate and participate with the healthcare team. Pre-graduate residents learn appropriate safety precautions and understand protocols related to patient contact, laboratory work, and infection control. Pre-graduate residents are required to complete appropriate documentation for all qualifying experiences.

## **O&P Research IV**

### **OPORD 72101**

**Credit hrs: 2**

**Course Director: Ashley H. Mullen, MAST, CPO**

#### **Course Description:**

- O&P Research IV contains the last milestones of the research project, including creation, polishing, and presenting posters and written manuscripts. This class then meets periodically when students present their work to each other and faculty for critique. Upon approval by their Research Advisor, students prepare posters of their projects to display at the annual Allied Health Research Day in November attended by numerous members of multiple health care professions from around the region. Final master's papers are due by the end of the semester.

## **Clinical Specialization I & II**

### **I – OPCSA 76101**

### **II – OPCSB 76102**

**Credit hrs: 6 (for each course)**

**Course Director: Jared A. Howell, MS, CPO**

#### **Course Description:**

- These required specialization rotations are meant to provide comprehensive clinical experience with an emphasis on comprehensive clinical treatment. Patient interactions in this rotation include general prosthetic and orthotic practice, but students are encouraged to take advantage of opportunities for advanced and/or specialized patient care. During this rotation, students shall be working more independently and having more responsibility for patient care. Supervision and oversight is still necessary, but students shall be challenged and given opportunities that stretch their abilities and give them skills beyond those developed during the core rotations. Pre-graduate residents learn appropriate safety precautions and understand protocols related to patient contact and infection control. Although not required, students are encouraged to seek out international or local humanitarian opportunities as they present. Humanitarian experiences should be limited to no more than four weeks total without express written permission of residency supervisors, residency mentors, and the program director. Clinical Specialization I and II are designed to be contiguous in nature, although permission can be granted by the supervising faculty member to allow separate specializations during this period. The six-month specialization period can be completed anywhere in the country (or potentially out of the country with program approval),

provided each prospective site and residency mentors go through the necessary screening, approval, and training processes.