

ORTHOTICS AND PROSTHETICS (OP)

OP 500 Ethics and Compliance in Orthotics and Prosthetics 3 credits

This course explores ethical considerations for orthotics and prosthetics in a healthcare setting. Students will critically analyze ethical concepts, which influence the development of healthcare policies and regulations in the orthotics and prosthetics fields. The course will further examine the relevance of ethical considerations in healthcare compliance.

OP 502 Biomechanics of Human Movement 3 credits

This course integrates clinically relevant aspects of human anatomy, physiology, and biomechanics. Included are an introduction to motor learning and control principles that support human functioning, and clinical concepts in bioengineering and electrophysiology.

OP 505 Clinical Considerations of Lower Extremity Orthotic Management 3 credits

This course integrates current principles in human movement, pathology, functional assessment and measurement. Principles are then applied through the formulation and implementation of an orthotic treatment plan. The students will research, design, fabricate, and fit functional and accommodative orthotic devices for the lower limb.

OP 510 Clinical Considerations of Spinal Orthotic Management 3 credits

This course incorporates principles of orthopedic assessment, biomechanics, and growth and development. Principles are then applied through the formulation and implementation of orthotic treatment protocol. Students will design, fabricate, and fit corrective and supportive spinal orthoses for conditions of the spine based on evidence-based standards.

OP 515 Clinical Considerations of Upper Extremity Orthotic Management 3 credits

This course integrates the knowledge gained through rehabilitation, orthopedic and functional assessment and incorporates the information into a treatment plan. Techniques are then applied through the implementation of orthotic treatment protocol. Students will research, design, fabricate, and fit upper extremity orthoses.

OP 520 Clinical Considerations of Trans-Tibial Prosthetic Management 3 credits

This course focuses on the process of patient assessment through the formulation and implementation of a prosthetic treatment plan. It includes trans-tibial shape capturing methods with variations in socket designs and suspension techniques as used in contemporary prosthetic practice. This course utilizes evidence to base clinical decisions and to resolve clinical complications that can affect patients with lower limb amputations.

OP 525 Statistics in Orthotics and Prosthetics 3 credits

Students will examine the concepts, methods, and usage of statistical data within the context of orthotics and prosthetics.

OP 530 Research Methods 3 credits

This course examines the various research methodologies used in orthotics and prosthetics. It provides an overview of quantitative and qualitative research methodologies including research design, data collection and analysis, interviewing, case studies, and action science. The philosophy, ethics, and politics of research are introduced.

OP 535 Clinical Considerations of Trans-Femoral Prosthetic Management 3 credits

This course emphasizes the process of patient assessment through the formulation and implementation of a prosthetic treatment plan. It integrates anatomy, biomechanics, prosthetic design principles and material science to analyze clinical challenges that can affect patients with high-level lower limb amputations.

OP 540 Clinical Considerations of Upper Extremity Prosthetic Management 3 credits

This course integrates anatomy, patient assessment, biomechanics, and prosthetic design principles to diagnose clinical problems that can affect patients with upper extremity deficiency. Students will design and implement a prosthetic treatment plan, fabricate and fit the trans-radial and trans-humeral prostheses. This course will also cover innovative technologies in upper limb socket design and identify advanced components to enhance upper-limb function.

OP 545 Orthotic and Prosthetic Practice Management 3 credits

This course will examine the general business practices used in the orthotic and prosthetic industry. Topics include record keeping, time management, regulatory compliance, financial statements, human resources, marketing and legal issues. Professional issues including the certification process, personal goal setting and leadership skills assessment are also discussed. Students will apply these principles along with ethical responsibility and critical thinking skills to management practices of business decision making and strategic planning.

OP 580 Clinical Experience 3 credits

This course will provide students with opportunities to apply theories and skills in an approved clinical setting with actual patient contact. Specific experiences include taking part in a comprehensive patient assessment in order to create a comprehensive orthotic/prosthetic treatment care plan as well as exposure to continued patient care/evaluation to ensure, maintain, and document optimal fit and function of the orthoses/prostheses. The experience will also provide exposure to business management principles and inter-professional communication among practitioners, patients, and caregivers. Practicum students are required to work under the direct supervision of a Certified Orthotist/Prosthetist preceptor in an approved clinical site.

OP 590 Master's Capstone 3 credits

The capstone course provides the orthotic and prosthetic professional with the opportunity to synthesize the learning, which has taken place throughout the program. It further focuses upon the practical application of knowledge within the orthotic and prosthetic industries. The capstone will serve as an assessment of student learning within the Master of Science in Orthotics and Prosthetics program.