

PROSTHETICS - ORTHOTICS

• clinical nutrition • emergency medicine

education • health care sciences • physical therapy • physician assistant

studies • radiation therapy • rehabilitation counseling



PROSTHETICS-ORTHOTICS

■ DEGREE OFFERED

Master of Prosthetics-Orthotics

■ PROGRAM DIRECTOR

Susan L. Kapp, M.Ed., C.P.O., L.P.O.

FACULTY

■ ASSOCIATE PROFESSORS

Susan L. Kapp

M.Ed., UT Brownsville, 2005; C.P.O., Northwestern University, 1980, 1990; B.S., Texas A&M University, 1979

■ ASSISTANT PROFESSORS

Fan Gao

M.S., Ph.D., Pennsylvania State University, 2004, 2005; B.E., Beijing University of Aeronautics and Astronautics, 1996

Leslie Gray

M.Ed., UT Brownsville, 2007; B.S., C.P.O., UT Southwestern Medical Center, 2002

Miguel N. Mojica

B.S., C.P.O., UT Southwestern Medical Center, 1987

■ ADJUNCT FACULTY

Jacqueline Adolph, Instructor

B.S., C.P.O., UT Southwestern Medical Center, 2010

William A. Carlton, Instructor

M.A., UT Dallas, 2013; B.S., UT Southwestern Medical Center, 1983; C.O., Shelby State Community College, 1981

Kirsten Tulchin-Francis, Clinical Assistant Professor

Ph.D., Texas Woman's University, 2012; M.S., Marquette University, 2001; B.S., Trinity College, 1998



Susan L. Kapp, M.Ed., C.P.O., L.P.O.
Program Director

OBJECTIVES

The Prosthetics-Orthotics Program offers a solid knowledge base in related sciences and teaches the professional and technical skills necessary to meet the needs of patients requiring either replacement of a partially or totally absent limb or fitting of a brace to a disabled spine or limb.

Graduates of the Program function as active members of the health care team, collaborating with other health care professionals in rehabilitating people with chronic disabling illnesses, injuries, or birth defects.

ACCREDITATION

The Program is accredited by the National Commission on Orthotic and Prosthetic Education.

REQUIREMENTS FOR ADMISSION

The Admissions Committee of the Prosthetics-Orthotics Program determines the admissibility of an applicant into the Program in

accordance with the quality of his or her credentials. An interview is required. In addition to the general admission requirements specified in the Student Information section of this catalog, applicants to the program must satisfy the following requirements.

- 1) Complete a bachelor's degree from a regionally accredited institution;
- 2) Complete the 37 semester hours of specific prerequisite courses (listed below);
- 3) Earn the minimum recommended cumulative and science GPA of 3.0 on a 4.0 scale;
- 4) Submit a Graduate Record of Examination score;
- 5) Have visited, shadowed, volunteered, or worked in a prosthetic-orthotic clinic; and
- 6) Submit three letters of recommendation (instructor, employer, undergraduate adviser, volunteer experience or leadership position supervisor, other academic/research mentor).

■ **MASTER OF PROSTHETICS-ORTHOTICS PREREQUISITE COURSES**

	HOURS
Biology with lab (for science majors)	8
Human Anatomy and Physiology with lab	8
Physics with lab (for science majors)	8
Chemistry with lab (for science majors)	4
College Algebra or higher	3
Statistics	3
Psychology (Human Growth and Development or Abnormal)	3
<i>Total Credit Hours</i>	<i>37</i>

Recommended: Business Management, Ethics
 The prerequisite courses must be completed with a grade of C or better. Prerequisite courses are not offered at UT Southwestern. Classes begin in late May each year. The length of the program is five semesters.

■ **ESSENTIAL FUNCTIONS**

In addition to essential functions for all students (see Entrance Requirements in the Student Information chapter), each student in the Prosthetics-Orthotics program must be able to:

- 1) Participate in supervised clinical activities for eight-hour days;

- 2) Demonstrate sufficient vision to perform such tasks as (but not limited to) interpreting a medical record, inspecting wounds and determining gait deviations;
- 3) Physically and visually utilize chemicals and power tools while following all appropriate safety precautions;
- 4) Demonstrate the physical capability to work in a prosthetics and orthotics laboratory for four-hour periods;
- 5) Demonstrate sufficient arm strength, balance, coordination, and sensation to perform such activities as (but not limited to) patient casting, manual muscle testing, range-of-motion testing, and soft-tissue and bone evaluations.

CURRICULUM

The Prosthetics-Orthotics Program curriculum leads to a master's degree with academic eligibility to take the certification examinations of the American Board for Certification in Orthotics, Prosthetics and Pedorthics.

The faculty combines educational, professional and technical skills in a coordinated approach to the academic and clinical aspects of the student's education, offering an opportunity to attain the basic competencies necessary for an entry-level prosthetist and orthotist. Students also engage in research projects and community service as a part of their learning experience.

■ **PROGRAM OF INSTRUCTION**

First Year

		HOURS
SUMMER		
HCS 5308	Human Anatomy (Lecture)	3
HCS 5309	Human Anatomy Dissection Laboratory	3
HCS 5407	Human Physiology	4
HCS 5207	Introduction to Neuroscience	2
MPO 5101	Introduction to Laboratory Skills and Materials in Prosthetics and Orthotics	1
<i>Total</i>		<i>13</i>

FALL

MPO 5102	Clinical Evaluation Tools	1
HCS 5306	Introduction to Pathology	3

MPO 5203	Biomechanics of Human Movement 1	2
MPO 5504	Orthotic Management of the Lower Limb 1	5
MPO 5505	Prosthetic Management of the Lower Limb 1	5
HCS 5106	Professional Development	1
<i>Total</i>		<i>17</i>

SPRING

MPO 5106	Biomechanics of Human Movement 2	1
MPO 5407	Orthotic Management of the Lower Limb 2	4
MPO 5308	Orthotic Management of the Spine	3
MPO 5409	Prosthetic Management of the Lower Limb 2	4
HCS 5230	Health Care Research	2
<i>Total</i>		<i>14</i>

Second Year

SUMMER **HOURS**

MPO 5310	Prosthetic Management of the Upper Limb	3
MPO 5411	Clinical Experience	4
MPO 5112	Clinical Research 1	1
<i>Total</i>		<i>8</i>

FALL

MPO 5313	Orthotic Management of the Upper Limb	3
MPO 5115	Clinical Research 2	1
MPO 5416	Contemporary Practice and Synthesis	3
<i>Total</i>		<i>8</i>
<i>Total Hours</i>		<i>60</i>

GRADUATION REQUIREMENTS

A candidate for the degree of Master of Prosthetics-Orthotics must meet all the following requirements:

- 1) The student must demonstrate a high order of scholarly achievement in prosthetics-orthotics, including appropriate professional competencies. The Program’s Student Progress Committee determines whether adequate mastery has been acquired.

- 2) The student must complete satisfactorily a minimum of 60 semester hours at UT Southwestern School of Health Professions.
- 3) The student must discharge all financial obligations to the Medical Center. In the event of nonpayment, one or more actions may be taken by the dean: a) readmission may be denied; b) the student’s grades and official transcript may be withheld; and c) the degree to which the student would otherwise be entitled may be withheld.
- 4) The student must maintain at least a 2.7 cumulative grade-point average, have no academic deficiencies, and have no incompletes.
- 5) The student must complete the academic requirements listed on his or her degree plan, including completion of any academic deficiencies in prerequisite courses, by the times stated in the student’s official letter of acceptance. The student is responsible for submitting official documentation of successful completion of the prerequisites to the Office of the Registrar.
- 6) The student must pay a graduation fee designated to partially offset the costs associated with diploma and diploma cover production, regalia, and the commencement ceremony. All students completing a degree or certification must pay the fee whether they attend the commencement ceremony or not.

COURSE DESCRIPTIONS

See other departmental listings in this catalog for descriptions of courses that do not begin with the prefix MPO.

MPO 5101 INTRODUCTION TO LABORATORY SKILLS AND MATERIALS IN PROSTHETICS AND ORTHOTICS

1 SEMESTER HOUR

This course introduces equipment and tools used in the fabrication of prostheses and orthoses. Proper safety techniques and operating procedures in the laboratory environment are stressed. Prosthetic and orthotic material characteristics are introduced.



**MPO 5102 CLINICAL EVALUATION TOOLS
1 SEMESTER HOUR**

Instruction provides an overview of clinical evaluation tools commonly used to develop treatment plans and assess outcomes for patients with orthopaedic and neurologic impairments. Students have the opportunity to become proficient in selected measurement techniques and evaluation tools through lecture, lab, and clinical experience.

**MPO 5106 BIOMECHANICS OF HUMAN MOVEMENT 2
1 SEMESTER HOUR**

This course is a continuation of MPO 5203 and is designed to develop a fundamental understanding of the anatomical, neuromuscular, and biomechanical principles of human movement. Emphasis is on the importance of mechanical principles in relation to analysis of the human body at rest and in motion, in both normal and pathological conditions.

**MPO 5112 CLINICAL RESEARCH 1
1 SEMESTER HOUR**

Students, with an assigned faculty mentor, develop a project proposal to answer a defined

clinical question. The project may be an in-depth literature review or an experimental research pilot project. Students also may be assigned to ongoing projects. This course focuses on identifying and critically analyzing the literature, using skills learned in the HCS 5230 course. Guidelines for research involving human subjects also are covered.

**MPO 5115 CLINICAL RESEARCH 2
1 SEMESTER HOUR**

This course is a continuation of MPO 5112. Students summarize their findings to form conclusions to their clinical questions. This capstone project results in a final scientific paper summarizing the project and a formal presentation to develop communication skills further.

**MPO 5203 BIOMECHANICS OF HUMAN MOVEMENT
12 SEMESTER HOURS**

This course is designed to develop a fundamental understanding of the anatomical, neuromuscular, and biomechanical principles of human movement. Emphasis is on the importance of

mechanical principles in relation to analysis of the human body at rest and in motion, in both normal and pathological conditions.

MPO 5308 ORTHOTIC MANAGEMENT OF THE SPINE

3 SEMESTER HOURS

Instruction provides a comprehensive study of short- and long-term spinal orthotic patient management. It includes evaluation, treatment-plan formulation, biomechanics, and orthotic design for the spine. Fabrication and fitting of selected orthoses are presented.

MPO 5310 PROSTHETIC MANAGEMENT OF THE UPPER LIMB

3 SEMESTER HOURS

This course provides a comprehensive study of the short- and long-term upper-limb prosthetic patient management. It includes evaluation, treatment-plan formulation, biomechanics, and prosthetic design. Fabrication and fitting of selected prostheses are presented.

MPO 5313 ORTHOTIC MANAGEMENT OF THE UPPER LIMB

3 SEMESTER HOURS

This course provides a comprehensive study of short- and long-term upper-limb orthotic patient management. It includes evaluation, treatment-plan formulation, biomechanics, and orthotic design. Fabrication and fitting of selected orthoses are presented.

MPO 5416 CONTEMPORARY PRACTICE AND SYNTHESIS

4 SEMESTER HOURS

This course presents prosthetic and orthotic practice within the context of current health care. Three distinct areas of focus are presented: practice management, advanced technology, and clinical reasoning and synthesis. Instruction emphasizes documentation and coding skills and includes regulations related to reimbursement by federal, state, and private payers, patient confidentiality, quality assurance and accountability, health care economics, marketing, codes of professional responsibilities, and licensure and certification. It also covers professional organizations, international service, and lifelong personal and professional

development. Resumé development and interviewing skills for securing a residency position are included. Instruction also builds on current prosthetic and orthotic design principles by introducing additional available technologies and research trends. It includes computer-aided design, myoelectric prosthetic and orthotic control, functional electrical stimulation, microprocessor-controlled joints, management of the high-activity individual, advanced prosthetic socket design and suspension, complex orthotic gait and device design, targeted reinnervation, and osseointegration. This course is offered in the final semester to further prepare the student for the role of prosthetic-orthotic resident. Prior course work is synthesized and facilitated through patient interaction, case studies, and other means to enhance patient management and problem-solving skills.

MPO 5407 ORTHOTIC MANAGEMENT OF THE LOWER LIMB 2

4 SEMESTER HOURS

This course provides a comprehensive study of short- and long-term lower-limb orthotic patient management and proximal to the knee. It includes evaluation, treatment-plan formulation, biomechanics, and orthotic design. Fabrication and fitting of selected orthoses are presented.

MPO 5409 PROSTHETIC MANAGEMENT OF THE LOWER LIMB 2

4 SEMESTER HOURS

This course provides a comprehensive study of short- and long-term lower-limb prosthetic patient management at and proximal to the knee. It includes evaluation, treatment-plan formulation, biomechanics, and prosthetic design. Fabrication and fitting of selected prostheses are presented.

MPO 5411 CLINICAL EXPERIENCE

4 SEMESTER HOURS

This course provides the opportunity to apply learned skills during a multiweek clinical experience. It may occur in a general practice setting or a specialty practice such as upper-limb prosthetics, pediatrics, acute management, Department of Defense facility or Department of Veterans Affairs facility.

MPO 5504 ORTHOTIC MANAGEMENT OF THE LOWER LIMB 1**5 SEMESTER HOURS**

This course provides a comprehensive study of short- and long-term lower-limb orthotic patient management distal to the knee. It includes evaluation, treatment-plan formulation, biomechanics, and orthotic design. Fabrication and fitting of selected orthoses are presented, including material characteristics. International standards and product failure also are discussed.

MPO 5505 PROSTHETIC MANAGEMENT OF THE LOWER LIMB 1**5 SEMESTER HOURS**

This course provides a comprehensive study of short- and long-term lower-limb patient management distal to the knee. It includes evaluation, treatment-plan formulation, biomechanics, and prosthetic design. Fabrication and fitting of selected prostheses are presented, including material characteristics. International standards and product failure also are discussed.

