

**The University of Texas at Tyler**  
**Master of Occupational Therapy Program**  
**OCTH 5260: Advanced Upper Extremity Rehabilitation: Splinting, Assistive  
Technology and Modalities**  
**Fall 2024**

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\*Prefer e-mail appointment requests for on-campus or phone appointments.

**Course Description:** Focus on upper extremity splinting, powered mobility, driver rehabilitation, environmental modifications, and assistive technology to support occupational performance. Practice prosthetics/orthotics, physical agent modalities, and pain management.

Credits: 2

**2018 Standards Course Objectives:**

1. Apply frames of reference/theories specific to the application of assistive technologies.
2. Use clinical reasoning to design adaptive, compensatory, or preventive assistive devices to support client participation in desired occupational roles and contexts.
3. Assess the need for and demonstrate the ability to design, fabricate, apply, fit, and training in assistive technologies and devices used to enhance client occupational performance and foster participation and well-being.
4. Articulate solutions for low-vision needs.
5. Modify environments to support participation in adult clients.
6. Assess the need for orthotics and design, fabricate, apply, fit, and train in orthoses used to enhance occupational performance and participation.
7. Demonstrate knowledge and use of the safe and effective application of superficial and deep thermal agents, electrotherapeutic agents, and mechanical devices, including indications, contraindications, and precautions.
8. Apply foundational knowledge, previous professional experiences, and new academic learning to fieldwork and community engagements to meet the needs of clients in various contexts and cultures reflecting ethical practice.
9. Demonstrate the ability to train clients in the safe and effective use of prosthetic devices.

**Connection to the MOT Curriculum**

## Clinical Reasoning and Reflective Practice Application

This course is the second of two assistive technology courses. Using foundational information, clinical reasoning, and reflective practice, the student will create solutions for improved occupational performance, participation, and social participation in adult populations using assistive technology. Applying an understanding of clients and caregivers through the integration of subsequent coursework, the student will develop interventions that provide assistive technology preparatory methods. This course introduces upper extremity splinting, orthotics, and modalities.

### Learning Activities Required for Course Credit

#### Readings

Competency in computer- or app-based technology for pediatric practice

Competencies in basic splinting

Competences in basic orthotics

Competences in modalities Application of seating and positioning related to client needs and context

Application of Low-Vision Solutions to a Case Study

Understanding of ethical and legal responsibilities in AT Development of an assistive technology solution for an adult case study

### Grading

Assignments and quizzes	25%
Exams	25%
Lab	50%
TOTAL	100%

### Specific Content Areas

Assistive Technology Application: Ethical and Legal

Responsibilities in AT Mobility/Positioning

Splinting

Modalities

Driver Rehabilitation

Low Vision

IADL/ADL AT

### Grading Policies

*Written assignments* are graded on content, style, clarity, conciseness, and comprehensiveness. Written assignments are expected to reflect the guidelines in the 7th edition of the Publication Manual of the American Psychology Association (APA) 7<sup>th</sup> edition. Some of the required

assignments in this course may be checked for plagiarism using Turnitin or other plagiarism software.

*Class preparation:* All students are expected to complete assigned readings and review online materials before taking quizzes and/or attending software.

*Late assignments:* Assignments are due on the date indicated in the syllabus and/or Canvas. No late work will be accepted prior to an arrangement with the instructor and may still be subject to penalty. Late submission of work will result in a 10% deduction in assignment grade for each day (24 hours) late.

### **Grading Scale**

A = 90-100% total points

B = 80-89.99% total points

C = 70-79.99% total points

D = 60-69.99% total points

F = less than 60% of total points

**Date of Final Exam:** refer to the Calendar below

**Date to withdraw without penalty:** refer to the registrar

**Attendance Policy:** Since on-campus meetings are limited to scheduled weekends, no opportunity exists for makeup work. Laboratory activities cannot be made up, and no points can be given for missed classes. In the event of an excused absence, there will be no penalty for the absence, but the student is solely responsible for obtaining information missed.

### **Textbook:**

Bracciano, A.G. (2022). *Physical agent modalities: theory and application for occupational therapy* (3<sup>rd</sup> ed.) Slack Incorporated. ISBN-13: 978-1630915384

Cook, A. M., & Polgar, J. M. (2025). *Assistive Technologies: Principles & Practice* (6th ed.). St. Louis, MO: Mosby Elsevier. ISBN-13: 978-0443109690

Coppard, B. M., & Loham, H. (2020). *Introduction to Orthotics: A Clinical Reasoning and Problem-Solving Approach* (5<sup>th</sup> ed.). Mosby. ISBN-13: 978-0323091015

## **UNIVERSITY POLICIES**

### **UT Tyler Honor Code**

Every member of the UT Tyler community joins together to embrace honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

## **Student's Rights and Responsibilities**

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: <http://www.uttyler.edu/wellness/rightsresponsibilities.php>

### **Campus Carry**

We respect the rights and privacy of students 21 and over who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>

### **UT Tyler a Tobacco-Free University**

All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors. Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products. There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit [www.uttyler.edu/tobacco-free](http://www.uttyler.edu/tobacco-free).

### **Grade Replacement/Forgiveness and Census Date Policies**

Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. Grade Replacement Contracts are available in the Enrollment Services Center or at <http://www.uttyler.edu/registrar>. Each semester's Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar. Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three-course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract. The Census Date is the deadline for many forms and enrollment actions of which students need to be aware.

These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, and approvals for taking courses such as Audit, Pass/Fail, or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the census Date)
- Schedule adjustments (section changes, adding a new class, dropping without a "W" grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment
- Completing the process for tuition exemptions or waivers through Financial Aid.

### **State-Mandated Course Drop Policy**

1. "Cheating" includes, but is not limited to:

- Copying from another student’s test paper,
  - using, during a test, materials not authorized by the person giving the test;
  - failure to comply with instructions given by the person administering the test;
  - possession during a test of materials that are not authorized by the person giving the test, such as class notes or specifically designed “crib notes.” The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;
  - using, buying, stealing, transporting, or soliciting in whole or in part the contents of an unadministered test, test key, homework solution, or computer program;
  - collaborating with or seeking aid from another student during a test or other assignment without authority;
  - discussing the contents of an examination with another student who will take the examination;
  - divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructors have designated that the examination is not to be removed from the examination room or not to be returned or kept by the student;
  - substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
  - paying or offering money or other valuable things to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution, or computer program;
  - falsifying research data, laboratory reports, and/or other academic work offered for credit;
  - taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
  - misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.
2. “Plagiarism” includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another’s work and the submission of it as one’s own academic work offered for credit.
  3. “Collusion” includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.
  4. All written work that is submitted will be subject to review by plagiarism software.
  5. I expect all work students submit for this course to be their own. I have carefully designed all assignments and class activities to support your learning. Doing your own work, without human or artificial intelligence assistance, is best for your efforts in mastering course learning objectives. For this course, I expressly forbid using ChatGPT or any other artificial intelligence (AI) tools for any stage of the work process, including brainstorming. Deviations

from these guidelines will be considered a violation of UT Tyler's Honor Code and academic honesty values.

### **Information regarding support for pregnant and parenting students**

At UT Tyler, the Division of Student Success provides resources, support, and accommodations when appropriate, to parenting students and pregnant students.

What is a parenting student? What resources and support are available to parenting students?

A parenting student is an enrolled student who is a parent or legal guardian to a child under 18 years of age. Parenting students are eligible for early class registration and may also take a leave of absence if necessary.

What classifies as pregnancy, and what resources, support, and accommodations are available?

Pregnancy and related conditions include childbirth, miscarriage, false pregnancy, termination of pregnancy, temporary disability resulting from pregnancy, and recovery from pregnancy. Examples of accommodations for pregnant students include a leave of absence, excused absences, classroom breaks, seating changes, or other medically-necessary adjustments.

If you are a pregnant or parenting student, or are aware of a pregnant or parenting student, please complete the Self-Reporting Form.

Students who believe they have experienced discrimination, harassment, sexual harassment/sex-based misconduct, and/or related retaliation are encouraged to contact the Title IX office or file a complaint. Questions and concerns may also be sent to Blake Bumbard, Title IX Coordinator, at [bbumbard@uttyler.edu](mailto:bbumbard@uttyler.edu) or by phone at 903-565-5760.

Questions about the resources and supports available to pregnant and parenting students may be directed to Ashton Maisel, the Parenting Student Liaison, at [amaisel@uttyler.edu](mailto:amaisel@uttyler.edu).

With the passage of Texas Laws SB 412, SB 459, and SB 597/HB 1361, pregnant and parenting students have a suite of supports available to them. Part of the support for pregnant students includes excused absences. Students must opt into these resources. You can contact the Parenting Student Liaison at [parents@uttyler.edu](mailto:parents@uttyler.edu) and complete the Pregnant and Parenting Self-Reporting Form.

### **Laboratory Passing Policy:**

For courses where your instructor has an embedded laboratory component with competency or 'check off', students will receive three attempts to ensure entry-level skills are demonstrated. It is imperative students pass both the laboratory and didactic sections of each course in order to pass the overall course. If the first attempt at a laboratory exam is not successful, the second attempt will be offered with the highest passing score of 75%. If the second attempt is not successful, a third attempt will need to be passed in order to continue in the course. Should the

third attempt not be successful, the student will receive a 0 and need to discuss options with the Course Instructor. The student will meet with the program director, who will request the student to return to the course the next time offered to ensure successful skills in the required practice area. For this reason, it is imperative students study appropriately pass the laboratory competencies, and meet the course objectives for safety, skill, efficiency, and entry-level performance.

### **UT Tyler Resources for Students**

- UT Tyler Writing Center (903-565-5995), [writingcenter@uttyler.edu](mailto:writingcenter@uttyler.edu)
- UT Tyler Tutoring Center (903-656-5964), [tutoring@uttyler.edu](mailto:tutoring@uttyler.edu)
- The Mathematics Learning Center, RBN 4021, is the open-access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
- UT Tyler Counseling Center (903-566-7254)

## ACOTE Standards

### Assessment Measures

1. Assignment
2. Lab Test
3. Objective Test
4. Essay Test
5. Project
6. Presentation
7. Demonstration
8. Alternative Assessment

ACOTE 2018 Standard		Syllabus Objective Number	Assessment Measure Number
B.4.3.	Utilize clinical reasoning to facilitate occupation-based interventions that address client factors. This must include interventions focused on promotion, compensation, adaptation, and prevention.	1,2,4	1,3,7
B.4.11.	Assess the need for and demonstrate the ability to design, fabricate, apply, fit, and training in assistive technologies and devices (e.g., electronic aids to daily living, seating, and positioning systems) used to enhance occupational performance and foster participation and well-being.	1,6,3	1,5,7
B.4.12.	Assess the need for orthotics and design, fabricate, apply, fit, and train in orthoses and devices used to enhance occupational performance and participation.  Train in the safe and effective use of prosthetic devices.	6,9	1,3,7
B.4.17.	Demonstrate knowledge and use of the safe and effective application of superficial thermal agents, deep thermal agents, electrotherapeutic agents, and mechanical devices as a preparatory measure to improve occupational performance. This must include indications, contraindications, and precautions.	7	1,2,3,7
B.4.18.	Assess, grade, and modify the way persons, groups, and populations perform occupations and activities by adapting processes, modifying environments, and applying ergonomic principles to reflect the changing needs of the client, sociocultural context, and technological advances.	5	1



Module/Content	Readings	Assignments
<b>Campus #1</b>		
<b>1/Finger &amp; wrist</b>	<p>-Pedretti (chapter 30) Orthotics</p> <p>- Coppard Chapter 1-6 orthotic foundations, Chapter 11 orthotics for the fingers, &amp; Chapter 7 orthoses for the wrist.</p>	
<b>Campus #2</b>		
<b>2 /PAM</b>	<p>Read the textbook on physical agent modalities,</p> <p>Chapters 1 &amp; 2 for introduction &amp; regulation Chapters 5 Cryo &amp; 6 Thermal for Thermal Agents</p> <p>-Chapter 3: wound healing &amp; Chapter 4: Pain</p> <p>-Chapter 7 ultrasound</p> <p>-Chapters 8, 9, 10, 11, &amp; 12 neuromuscular electrical stimulation</p>	<p>-PAM Check-offs during your lab</p> <p>-Online Quiz # 1: Thermal PAM ONLY, Kinesio Taping &amp; casting (30 mins)/2 attempts/within 1 week (Monday through Friday midnight)</p> <p>-Mid exam: All PAMs (0.5 hours)/ a week before campus Fri at 8 pm/1 attempt</p>
<b>3/Elbow</b>	<p>-Coppard Chapter 10 Elbow</p> <p>-Cook &amp; Pulgar Part 1: Ch 1 (principles), 2 (technology), 5 (ethics), 6 (delivery) &amp; 15 Robotics),</p>	<p>-Project 1 finger splint fabrication (all splints due the following lab)</p> <p>-Project 2 wrist cock-up splint fabrication</p>
<b>Campus #3</b>		
<b>4/Thumb</b>	Read the assigned textbook,	-Project 3 elbow splint

	<p>Coppard Chapter 8: thumb orthoses</p> <p>-Use the Assistive Technologies Cook &amp; Pulgar Part 2: Ch 9 (communication), 10 (seating), 11 (mobility), 13 (manipulation)</p>	<p>fabrication</p> <p>-Online Quiz # 2 Finger, wrist, elbow, &amp; thumb Splints ONLY not resting &amp; dynamic (30 mins)/2 attempts (Monday through Friday midnight)</p>
<b>5/Resting/TOTA</b>	-Coppard Chapter 9 resting hand orthoses	<p>-Project 4 thumb spica splint fabrication</p> <p>-Project 4 thumb spica splint fabrication</p>
<b>Campus #4</b>		
<b>6/Dynamic/Thanksgiving</b>	-Coppard Chapter 13 Dynamic Orthoses	<p>-Assignment #4: Universal design for Justin case study written paper (Faculty use only)</p> <p>-Project 5 resting splint fabrication</p> <p>-Online Quiz #3 on AT readings and materials / 30 mins/2 attempts/within 1 week (Monday through Friday midnight)</p> <p>-Dropbox for Discussion/assignment #2 to share: Splinting case study online presentation</p> <p>-Final exam: All Splints (1 hour) a week before campus Fri at 8 pm/1 attempt</p>
<b>Zoom #5</b> <b>(Date pending)</b>		
<b>Module 7/AT</b>		-Assignment #3a: AT Devices for Adults written reflection Dropbox for Discussion/Assignment #3b to

<https://twu-edu.zoom.us/j/159287988>

Share: Designing an AT device video project