**Instructors:**

Ben Lucas, MSPO, CPO, LPO

[ben.lucas@ap.gatech.edu](mailto:ben.lucas@ap.gatech.edu)

404-385-1559

Office hours:

Tuesday 10-3

Wednesday 11-12

Thursday 1-3

**Laboratory Senior Technician:**

Scott French, CPOA, CTO

[scott.french@ap.gatech.edu](mailto:scott.french@ap.gatech.edu)

404-385-6034

Office hours: By appointment

**Credit Hours:** 4 credits

**Honor Code:**

Honesty is expected of all students in the MSPO program. The Georgia Tech Honor Code is intended to continuously remind students of the importance of honesty in their academic and professional lives. It also serves to create awareness on the part of both students and faculty of the rules regarding academic honesty and the processes to be followed when those rules are broken. In addition to the Honor Code and Honor Pledge students should be aware of the Rules for Student Conduct found in the Georgia Tech General Catalog. Of particular relevance are the rules that apply to academic misconduct. For additional information about the Honor Code and for a complete copy of the text go to the Georgia Tech On-Line Catalog at [*http://www.honor.gatech.edu*](http://www.honor.gatech.edu/)

**Honor Pledge:**

All students are required, when requested, to attach the following statement to any material turned in for a grade in any course in the MSPO education program. ***“On my honor, I pledge that I have neither given nor received inappropriate aid in the preparation of this assignment.”***

The layout of the course will be the following:

|  |  |  |
| --- | --- | --- |
| Time | Monday | Wednesday |
| 9-12 | Lecture | x |
| 1-5 | Lab | Recitation |
|  |  |  |

Every effort will be done to keep the course in these general blocks of time, but due to the nature of the class, changes may need to be made and will be communicated to you in as timely as a manner as possible. Lecture is, well, lecture. Lab time will apply knowledge obtained in lecture to various tasks related to spinal orthoses, including objective tests, measurement, fitting, and case studies. There are a few weeks where lab is also on Wednesday and twice on Thursdays. Recitation provides time dedicated to more student-run activities, such as literature reviews, projects and to clear up any confusion from the past couple weeks and answer questions.

***Section 1: Spine anatomy, biomechanics and assessment***

* August 19
  + Lecture 9-12
    - *Quiz #1 (Online due before class starts)*
    - Course overview, Anatomy & biomechanics of the spine (C.1.14, C.1.15)
  + Lab 1 - 5 (\*\*\* Wear shorts and t-shirts \*\*\*)
    - Evaluating the spine (Measurement/ROM) (C.1.2, C.2.1, C.2.5.B, i, ii, xi, C.3.2)

***Section 2: Fundamentals of spinal orthoses and spinal orthotic management***

* August 21
  + Recitation 1-5
    - Introduction to Recitation
    - ICF & Clinical Reasoning
    - *Class Design project I introduced* ***DUE AUGUST 28th***
* August 26
  + Lecture 9-12
    - Fundamentals of spinal orthoses (C.1.6, C.1.16, C.8.0)
  + Lab 1-5 (\*\*\* Wear shorts and t-shirts \*\*\*)
    - Custom-fit spinal lab (C1.2, C.1.3, C.1.16, C.4.1, C.4.2, C.4.3, C.8.0)
* August 28
  + Recitation 1-5
    - ***Design Project I Due***
    - *Case Study Project introduced* ***DUE SEPTEMBER 9th***
    - Diagnosis and Case Study Creation
    - Diagnostic Groups assigned
* September 2 LABOR DAY (No class)
* September 4
  + Recitation 1-5
    - Pain and Clinical Reasoning (C.1.2, C.1.6, C.1.7, C.1.21, C.2.5.E. C.8.0)
    - Diagnostic Group

***Section 3: Fracture management***

* September 9
  + Lecture 9-12
    - Fracture management I (C.1.7, C.2.5.E, C.8.0)
  + Lab 1-5 (\*\*\* Wear shorts and t-shirts \*\*\*)
    - Mock patient interview/assessment #1 (C.1.2, C.1.9, C.1.15, C.1.21, C.2.1, C.2.3, C.2.4, C.2.5A-E, C.3.1, C.3.2, C.3.3, C.3.4, C.6.1, C.6.3, C.8.0)
* September 11
  + Recitation 1-5
    - Literature Discussion (C.1.9, C.1.11, C.1.21, C.1.22)
      * Topic: Mechanisms of Action in Treating Fractures Conservatively
* September 16th
  + Lecture 9-12
    - Demonstration & Discussion of Casting for Afternoon (C.1.1, C.1.2, C.1.3, C.2.4, C.3.2, C.3.3, C.4.1, C.4.2, C.6.3, C.8.0)
  + Lab 1-5 (\*\*\* Wear t-shirt and shorts \*\*\*)
    - TLSO casting (C.1.1, C.1.2, C.1.3, C.2.4, C.3.2, C.3.3, C.4.1, C.4.2, C.6.3, C.8.0)
* September 18
  + Recitation 1-5
    - *Introduction of Class Design Project II* ***PRESENTATION DUE NOVEMBER 13th***
* September 19 **\*\*SPECIAL DATE\*\***
  + Lab 9-5: by appointment \*\*Dress in White Coat for Clinical Role\*\*
    - Interview #2 \*\*Video-tape in Clinic Setting\*\*
    - Measurement of Custom-measured TLSO
* September 23
  + Lecture 9-12
    - Fracture Management II (C.1.7, C.2.5.E, C.8.0)
    - Presentation/Discussion of Cases
  + Lab 1-5
    - Modify TLSO (C.1.3, C.4.1, C.4.2, C.8.0)
* September 25
  + Recitation 9-12
    - *Quiz #2 (Online due before class starts)*
    - Literature Discussion (C.1.9, C.1.11, C.1.21, C.1.22)
      * Topic: SCI & Pediatrics, osteoporosis
* September 30
  + Lecture 9-12
    - Tentative: Assessment and Management issues of the person with spinal injury (C.1.2, C.1.6, C.1.7, C.1.9, C.1.14, C.1.18, C.1.21, C.2.5A-E)
  + Lab 1-5 **\*\*\* T-shirts & shorts afternoon for lab \*\*\***
    - ½ Transfer & Spinal Precautions (C.1.2, C.2.1)
    - ½ Fabrication of TLSO (C.1.3, C.4.1, C.4.2, C.4.3, C.8.0)
* October 2
  + Lab 1-5 **\*\*\* T-shirt & shorts for lab \*\*\***
    - Fitting and assessment of TLSO #1 (C.1.3, C.4.1, C.4.2, C.4.3, C.4.4, C.4.5, C.4.6, C.4.7, C.6.1, C.6.3, C.8.0)
    - Review for Midterm
      * Midterm covers sections 1-4
      * ***Midterm (Online) opens on Wednesday October 2nd at 5:00pm and closes Wednesday October 9 at 11:59 pm***

***Section 4: Deformity (scoliosis, kyphosis)***

* October 7
  + Lecture 9-12
    - Introduction to scoliosis/kyphosis and orthosis design in idiopathic scoliosis (C.1.6, C.1.7, C.1.10, C.1.21, C.2.5.E, C.8.0)
  + Lab 1-5
    - Introduction to Imaging (C.1.2, C.1.10, C.2.5.A)
* October 9
  + Lab 1-5
    - Fitting and assessment of TLSO #2 (C.1.3, C.4.1, C.4.2, C.4.3, C.4.4, C.4.5, C.4.6, C.4.7, C.6.1, C.6.3, C.8.0)
* October 14 FALL BREAK (No Class)
* October 16
  + Design Project #2
* October 21

**\*\*\* Guest Lecturer – Leigh Davis, C/LPO professional dress \*\*\***

* + Lecture 9-11
    - Introduction to the Modified Boston Brace (C.1.2, C.1.3, C.1.10, C.2.1, C.2.5.B, C.3.2, C.3.3, C.3.4, C.8.0)

**\*\*\* Guest Lecturer – Kristen Howell, DPT professional dress \*\*\***

* Lecture 12-2
  + - Assessment of the patient with idiopathic scoliosis, Physical Therapist role in treatment (C.1.2, C.1.7, C.1.20, C.1.21, C.2.1, C.2.2, C.2.5.A-C, C.8.0)

**\*\*\* Guest Lecturer – Michael Schmitz, MD professional dress \*\*\***

* + Lecture 2-5
    - Overview of spinal surgery and post-op management in scoliosis (C.1.2, C.1.7, C.1.10, C.1.21, C.2.2, C.2.5.D)
* October 23
  + Recitation 1-5
    - Review for Saturday, Discussion on Evaluating IS
* October 26

**\*\*\* Saturday course @ CHOA, professional dress \*\*\***

* + Lab 8-4
    - Patient assessment, measurement, casting for MBB in idiopathic scoliosis (C.1.2, C.1.4, C.1.9, C.1.21, C.2.1, C.2.3, C.2.4, C.2.5.A-C, C.3.1, C.3.2, C.3.3, C.3.4, C.6.1, C.6.3, C.8.0)
    - Fitting and evaluation of the MBB in idiopathic scoliosis, interview with patient model (C.1.2, C.1.3, C.1.4, C.2.3, C.2.4, C.4.2, C.4.3, C.4.4, C.6.1, C.6.3, C.8.0)
* October 28

**\*\*\* Guest Lecturer – James Wynne, CPO, professional dress \*\*\***

* + Lecture 9-12
    - Introduction to the Boston Brace orthosis in management of idiopathic scoliosis (C.1.2, C.1.6, C.1.7, C.1.10, C.8.0)
  + Lab 1-5
    - Blueprinting, fitting of Boston Brace (C.1.2, C.1.3, C.1.10, C.2.1, C.2.5.B, C.3.2, C.3.3, C.3.4, C.8.0)
* October 30
  + Recitation 1-5
    - *Quiz #3 (Online due before class starts)*
    - Design Project #2
* November 4 **NO CLASS**
* November 6
  + Recitation 1-5
    - *Quiz #3 due (online before class starts)*
    - Literature Discussion (C.1.9, C.1.11, C.1.21, C.1.22)
      * Topic: Conservative Treatment of scoliosis effectiveness, effective design and mechanisms of action

***Section 5: Neuromuscular Scoliosis***

* November 11

**\*\*\* Guest Lecturer – Mark Holowka, C/LPO, professional dress \*\*\***

* + - * + Lecture 9-12
      * Spinal considerations in the patient with a neuromuscular condition & EDF casting technique for infantile scoliosis (C.1.1, C.1.2, C.1.7, C.1.18, C.1.21, C.2.5.E)
        + Lab 1-5
      * Case Studies in the Neuromuscular Spine (C.1.2, C.1.7, C.1.9, C.1.11, C.1.18, C.2.5.E, C.3.1, C.3.2, C.3.4)
* November 13
  + Recitation 1-5
    - **Presentation of Design Problem #2**

***Section 6: Cervical and Cranial Management***

* November 18
  + Lecture 9-12
    - Cervical Management & Design
  + Lab 1-5
    - * Cervical OTS fitting
* November 20
  + Recitation 1-5
    - Literature Discussion (C.1.9, C.1.11, C.1.21, C.1.22)
      * Topic: Effectiveness of Cervical Orthosis management; Mechanisms of Action in controlling motion; Affects of Ill-Fit
* November 21

**\*\*\* Guest Lecturer, Ross Bremer C/LPO, professional dress \*\*\***

* + Lecture 9-12
    - Management of the cervical spine with a HALO (C.1.2, C.1.7, C.1.10, C.8.0)
  + Lab 1-5
* HALO fitting lab (C.1.3, C.1.7, C.4.1, C.4.2, C.4.3, C.8.0)
* NO SPINAL CLASSES DURING THE WEEK OF THANKSGIVING
* December 2 ***PORTFOLIO DUE @ MIDNIGHT***
  + Lecture 9-12 \*\*TBD\*\*

**\*\*\* Guest Lecturer, Richard Welling C/LPO, professional dress \*\*\***

* Introduction to cranial remolding for deformities of the infantile skull (C.1.2, C.1.7, C.1.14, C.1.21, C.8.0)
  + Lab 1-5
    - Review for Final
    - Final is cumulative
    - ***Final (Written Online) will be open on Monday December 2 at 5:00pm and will close on Sunday December 8 at 11:59pm***
* December 4
  + - *Quiz #4 (Online due before class starts)*
    - Oral Exam Review/Practice
* December 10 ***WRITTEN FINAL DUE***
  + - 9-5 Oral & Practical Final by appointment only

**Grades & Assignments**

There is a 1000-point grading scale for the entire course. Weighting of the different assignments are as follows:

* Quizzes (4): 15% (lowest score dropped)
* Midterm: 15%
* Portfolio: 35%
* Final (Written): 10%
* Final (Practical): 10%
* Final (Oral): 10%
* Participation: 5%

**Course Grade Percentage Points**

A (90-100%) >900

B (80-89%) 800-899

\*C (70-79%) 700-799

D (60-69%) 600-699

F (<60%) <600

\*Overall course grade lower than C is considered unsatisfactory. Consult the 2010-2011 MSPO student handbook regarding course grades and ramifications.

**Portfolio**

This class will utilize a portfolio that you will put together throughout the semester with your assignments and other projects designed to help you understand why it is important to learn what we are learning. The requirements for your portfolio and instructions for each section are detailed in T-Square.

There will be various assignments discussed this semester that could be used for the portfolio, so pay careful attention to this website for information regarding all your assignments. You are able to submit your assignments multiple times for feedback before the due date, *but it up to you to ask for that feedback*. After the due date, feedback may be provided to you to improve your work and ask you to think perhaps in different terms. No grade will be assigned at that time. You will be able to modify your assignment based on that feedback, but you will also need to go above and beyond the feedback and not just cut and paste suggestions provided.

A rubric will be distributed in the first couple of weeks of class to inform you what belongs in the portfolio.

**Required Textbooks:**

Lusardi MM, Nielsen CC. *Orthotics and Prosthetics in Rehabilitation*. 2nd ed. St. Louis: Saunders Elsevier; 2007. ISBN 9780750674799

Hsu JD, Michael JW, Fisk JR. *AAOS Atlas of Orthoses and Assistive Devices*. 4th ed. Philadelphia: Mosby Elsevier; 2008. ISBN 9780323039314

Neumann DA. *Kinesiology of the Musculoskeletal System Foundations for Physical Rehabilitation*. 2nd ed. St. Louis: Mosby; 2010. ISBN 9780323039895

Salter RB. *Textbook of Disorders and Injuries of the Musculoskeletal System*. 3rd ed. Philadelphia: Lippincott Williams & Wilkins; 1999. ISBN 0683074997

[Note: Required textbooks are available on TWO-HOUR RESERVE at the Georgia Tech Price Gilbert Memorial Library.]