Master of Science in Prosthetics and Orthotics Program
School of Applied Physiology
Georgia Institute of Technology
Fall 2013

Course No. & Title: APPH 6209 Clinical Pathology
Credits: 2 credit hours
Lecture time/day: Mondays; 1:30– 4:15 p.m.
Locations:

Main Location	Georgia Tech School of Applied Physiology Room 1257
Secondary Location	Veteran Affairs Medical Center Main Hospital Building Surgical Conference Room/Classroom 2nd Floor, Room 2C-103 Decatur, GA

Course Coordinators (available to meet with students by appointment):

Christopher Hovorka, MS, C/LPO FAAOP Room 1329-A (404) 385-2895 chris.hovorka@ap.gatech.edu	Robert Kistenberg, MPH, C/LP, FAAOP Room 1329-D (404) 894-6269 robcp@gatech.edu

Lecturers (in chronological order):
(multiple lecturers address common clinical pathologies of human body systems typically encountered by persons who are candidates for and/or who utilize orthoses/prostheses)

Week 2: Orthopedist/Physiatrist Robin Deandrade, MD Adjunct Professor School of Applied Physiology Georgia Institute of Technology Emeritus Professor Emory University Medical School jdeandr@emory.edu	**Week 10: Endocrinology - Diabetes** Janine Freeman, RDN, LD, CDE, CDTP Diabetes Nutrition Consultant, Atlanta Emory Healthcare, Atlanta Janine.freeman@comcast.net
Week 4: Physical Therapist Carol A. Miller, PT, PhD, GCS Dept. Head & Professor of Physical Therapy Board Certified Specialist in Geriatrics University of North Georgia Dalonega, GA (706) 864-1475 Carol.Miller@ung.edu	**Week 11: Podiatry** Nathan Swartz, DPM Podiatrist The Center for Foot and Ankle Care Smyrna, GA nathanschwartz@hotmail.com
Week 5: Pediatric Orthopedists/Physical Therapist Rebecca Whitesell, MD Children's Healthcare of Atlanta rcwmed@yahoo.com John Faust, MD	**Week 12: Adjustment to Disability** Wells Petras, MA, LPC Clinical Counselor Georgia Mountains Community Services Gainesville, GA gwplpc@gmail.com

Children's Healthcare of Atlanta johnrobertfaust@gmail.com Colleen O'Berry, PhD, DPT Children's Healthcare of Atlanta Colleen.Coulter@choa.org	
Week 6: Physiatrist (Musculoskeletal) Patrick Nguyen, MD Physical Medicine & Rehabilitation Emory University School of Medicine dozfymd@gmail.com	**Week 13: Physiatrist (Neuromuscular)** Laura Lee, MD Physical Medicine & Rehabilitation Veterans Affairs Medical Center Atlanta, GA Laura.lee@va.gov
Week 7: Internal Medicine Lisa Bernstein, MD Assistant Professor Department of Medicine Emory University School of Medicine lbernst@emory.edu	**Week 14: Diagnostic Imaging** Michael Terk, MD Chair, Division of Musculoskeletal Imaging Emory University Decatur, GA Michael.terk@emoryhealthcare.org
Week 8: Dermatology Laura Delong, MD, MPH Dermatolgist Emory University School of Medicine lkdelon@emory.edu	**Week 15: Vascular Medicine** Atef Salam, MD Vascular Surgeon VAMC Secretary: Michelle Macleod 404-778-3248

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*

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."***

Course Description:
Clinical pathology deals with the nature and cause of human disease and disorders. This course will examine the effects of disease on the structure and function of body tissues. Content will begin with a review of the basic pathologic processes including cellular injury, inflammation and principles of healing. Then the course will cover a systematic investigation of the clinical aspects of diseases that affect the various organ systems of the body. A strong emphasis will be placed on the clinical appearance of disease as it relates to the musculoskeletal system, vascular system,

nervous system (principally brain and behavior), integumentary system and concepts in managing the elderly patient in the process of physical rehabilitation. These concepts will be weaved with some highlight of the disease-specific exploration of conditions commonly encountered by the prosthetist/orthotist.

Relationship to the Curriculum Design:
This course provides the fundamental knowledge of human clinical pathological conditions commonly encountered by rehabilitation health care professionals. It serves as one of the foundation medical courses for students to begin to understand the complexity of assessing and treating persons with musculoskeletal or neurological dysfunction or limb loss/limb deficiency. This course will develop the student's theoretical and applied clinical knowledge in order to participate in the course, APPH 6999A Clinical Practicum/Clinical Methods.

Course Goals:
On completion of this course the student will be able to:

1. Recognize and correctly utilize specific terminology of human pathology in verbal and written communication within clinical and academic environments.
2. Describe the cardinal signs/symptoms of inflammation.
3. Define the stages of wound healing and the factors that effect healing.
4. Define the signs and symptoms that distinguish/differentiate common medical diagnoses encountered by professionals in rehabilitation health care.
5. Define and integrate the critical signs and symptoms that would require medical consult or emergency treatment.
6. Discuss the incidence, prognosis, and risk factors for common pathological conditions relevant to orthotists/prosthetists.
7. Relate the disease processes to the clinical symptom and signs manifested in the patient.
8. Analyze the impact of the pathological process on common system disorders in terms of function.
9. Identify local and systemic effects of disease process including both initial and long-term complications.
10. Recognize the scope of practice of physicians and allied health care specialists that work with prosthetists/orthotists.

Teaching/Learning Experiences:
Topics in clinically oriented human pathology will be covered via didactic lecture. Students will also apply their knowledge of clinical pathology via an oral presentation and written handout. This course is designed to prepare students for participation in the parallel course, APPH 6999A Clinical Practicum/Clinical Methods in which they pair their acquired didactic knowledge of human pathological conditions and observe the medical treatment of individuals possessing a variety of pathological conditions in the medical setting. Outside of this course and as part of APPH 6999A, MSPO students will be supervised by medical specialists in a variety of disciplines (i.e., rehabilitation, dermatology, vascular, podiatry, prosthetics/orthotics and pedorthics rotations) of the clinical practicum course.
Evaluation Methods (include Weighting): Please see pages 4-6 for detailed description.

Instructional Methods:
A wide variety of guest instructors who are clinical practitioners will teach in this course. The instructor will emphasize the basic concepts of human clinical pathology and include some related basic science and in most cases will relate content to clinical practice. The instructor

expects the student to read and understand the assigned readings from textbooks and other documents in advance. Student participation in class discussion is expected.

ASSIGNMENTS:

a. WRITTEN SUMMARY OF ASSIGNED READINGS:

Each student will select a lecture topic and the corresponding assigned readings. The student will write a summary of the assigned readings. In addition, the student will write five (5) quiz questions (including the correct answers and references). These documents should be submitted to Robert Kistenberg on the **Wednesday** before the scheduled lecture date.
The reading summary document will then be posted to the course web site (Buzzport) and all students may then download it prior to the scheduled lecture.

b. WRITTEN SUMMARY OF LECTURE:

Each student will produce a written summary of lecture notes. In addition, the student will write five (5) quiz questions (including the correct answers and references). These documents should be submitted to Robert Kistenberg no later than one week after the lecture date.

c. CLINICAL PATHOLOGY POWER POINT PRESENTATION AND HANDOUT:

Each student will select a topic regarding a clinical pathology, prepare a PowerPoint presentation and orally deliver the presentation. The digital copy of the presentation should be forwarded to Robert Kistenberg on the day of the presentation for posting to the course web site. A hard copy handout should be provided to all students and faculty in this course before the student's presentation.

Topic Outline of PowerPoint Presentation and Handout:

I. Description of the condition
II. Incidence and prevalence of the condition
III. Etiology
IV. Pathophysiology of the condition
V. Description of the signs and symptoms
VI. Medical management of the condition (diagnostic tests, treatment, plan of care, rationale, etc.)
VII. Prognosis

Each student should select one Clinical Pathology topic from the list below. In the event of duplication of a topic, the students involved will need to create a resolution with his/her classmate(s) – this will be the student's responsibility. Each student should email their presentation topic and 5 (five) references to Robert Kistenberg no later than September 23, 2013.

CLINICAL PATHOLOGY TOPICS:

1. Arthritis (cover Rheumatoid and Osteoarthritis Types)
2. Cerebrovascular Accident "Stroke" (cover Hemorrhagic and Thromboembolic Types)
3. Traumatic Brain Injury (Acquired Brain Injury)
4. Diabetes Mellitus (Cover Type I and Type II)
5. Hereditary Motor and Sensory Neuropathies (Include many types as well as Charcot-Marie-Tooth Disease)
6. Spinal Cord Injury (focus on Incomplete Type)
7. Spina Bifida (focus on Meylomeningocele)
8. Osteogenesis Imperfecta
9. Fractures (focus on specific type of fracture – see instructors for guidance)
10. Arthrogryposis Multiplex Congenita

11. Cerebral Palsy (focus on Spastic Quadriplegia and Spastic Diplegia)
12. Complex Regional Pain Syndrome
13. Guillain-Barre Syndrome
14. Scoliosis/Kyphosis (focus on Adolescent Idiopathic Type)
15. Multiple Sclerosis
16. Post-Traumatic Stress Disorder
17. Amputation Etiologies (focus on one etiology: vascular disease, burger's disease, cancer, trauma, etc.)
18. Muscular Dystrophy (focus on Duchenne and Becker Types)
19. Peripheral Vascular Disease
20. Sports Injury (focus on a lower limb joint, i.e., ankle, knee, hip, etc.)
21. Behavioral Disorder (Depression due to loss of physical function from illness, disease, trauma)
22. Amniotic Band Syndrome (Streeter's Dysplasia)

Prepare/Distribute the Handout:
Provide a hard copy notes page handout of the PowerPoint slide presentation and all references. Each slide and the accompanying text and images should be of an appropriate size so it is legible.

Reference Reporting and Other Format Details:
Follow Journal of Prosthetics and Orthotics format noted in any issue within last 2 years. For detailed guidelines, go to page 5 of this web site:
http://www.oandp.org/jpo/authorinfo/INSTRUCTIONS_FOR_AUTHORS.pdf

GRADING OF ORAL PRESENTATION AND HANDOUT:

A (>90%) Thorough coverage of the outline topic areas. All topics in the outline are clearly articulated and defended with solid rationale and where applicable, a documented basis of evidence. Presented clearly in a timely manner (did not run over allotted time). Excellent use of PowerPoint and digital media with easy to read text, images and layout. Excellent handout that is organized, clear and informative. Text and images are easy to read and laid out in an organized fashion. Handout clearly addresses outline topic areas. Adherence to format, spelling, grammar, syntax and vocabulary are excellent. Excellent references and JPO adherence.
B (80-89%) Good but not stellar coverage of the outline topic areas. Most but not all topics in the outline are clearly articulated and defended with very good rationale and documented evidence basis (may possess some inconsistencies). Presented clearly in a timely manner with nearly flawless adherence to allotted time. Good use of PowerPoint and digital media. A few slides may possess some flaws. Good handout that may have some errors with regard to not being entirely clear in covering outline topic areas. Good adherence to format, spelling, grammar, syntax and vocabulary (few errors). Good references and JPO adherence.
C (70-79%) Oral presentation and handout are adequate but possess more than a few errors. More than a few topics in outline are not clearly articulated or defended and the rationale and evidence base is not compelling. May not be presented in a timely manner. Use of digital media is average with more than a few errors. More than a few slides may possess errors in format, grammar, syntax and vocabulary. There may be format omissions. Adequate references with flaws in JPO format.
D (60-69%) Oral presentation and writing is below average: may have failed to address or clearly address topics. There may be several topics in outline not clearly articulated or defended with insufficient evidence basis. Presentation may not be presented in timely manner. Below average use of digital media. Many slides

may possess format omissions, many spelling, grammar, syntax and vocabulary errors, insufficient references, as well as flaws in JPO format.
F (<60%)
Oral presentation and writing is poor. May have failed to address several topics. There may be many format omissions, with an unacceptable number of spelling, grammar, syntax and vocabulary errors. Unacceptable references without adherence to JPO format.

QUIZZES:
There will seven (7) quizzes administered on line via the web (T-Square) and will be due according to the course schedule. Content will be from the summary of lectures and assigned readings (including student presentations). Each quiz is open book and each student must adhere to the Georgia Tech Honor Code and agree to complete work independently. Questions will be in a variety of formats (multiple choice, true/false, fill in the blank).

WEIGHTING OF ASSIGNMENTS AND QUIZZES

Name of Assignment	No. of Assignments	Points	Total	Percent Total Grade
Lecture Summary	1	70	70	16.7%
Assigned Readings Summary	1	70	70	16.7%
Quizzes	7	20	140	33.3%
Presentation on Clinical Pathology (including printed handout)	1	140	140	33.3%
		Total	**420**	**~100%**

Course Grade	Percentage	Points
Satisfactory	≥ 70%	≥ 294
*Unsatisfactory	< 70%	< 294

- No letter grade is assigned for the final course grade. Instead, this course is offered as Satisfactory or Unsatisfactory.
- *Final course grade less than Satisfactory is not considered passing and will result in consequences. See MSPO Program Student Handbook for details

Required Textbooks:
1) *Goodman CC, Boissonnault WG, Fuller KS. *Pathology: Implications for the Physical Therapist*, 3rd ed. Philadelphia: Saunders Company; 2009. ISBN 9781416031185
2) Salter RB. *Textbook of Disorders and Injuries to the Musculoskeletal System*, 3rd ed. Baltimore: Lippincott Williams & Wilkins; 1999. ISBN 0683074997

*available in the Georgia Tech Library Reserves for 1 week check out.

Additional Required Readings
Readings from other resources (i.e. as scanned PDF pages from other textbooks, journals, etc.) appear within the course schedule and will be posted on Buzzport Course Web Site.

Optional Learning Resources (available at the library course reserves):
1) Levy CS. *Skin Problems of the Amputee*. St. Louis: Warren H Green; August 1982. ISBN: 0875271812
2) Decker W, Albert S. *Contemporary Pedorthics*. 1st ed. Seattle: Elton-Wolf Publishing; 2002. ISBN 1587830191

CLASS SCHEDULE:

Week	Date	Topics	Lecturer and Readings
1a	Mon Aug 19	Course Introduction Review: • Syllabus • Directions to VAMC • How to prepare for this course Assignments: • Student lecture/readings summary assignment • Student Quiz questions & answers assignment • Student presentation on clinical pathology • Assessment of clinical pathology presentation Lecture: Clinical pathology relevant for the practice of prosthetics and orthotics • Definition of clinical pathology • Common clinical pathological conditions involving persons who are candidates for/or who use orthoses and prostheses	Christopher Hovorka Robert Kistenberg Assigned readings for each week's class are rank ordered from top to bottom. Suggested strategy is: 1.) For readings identified as #1 (highest priority) – carefully read and formulate questions to ask the lecturer to help you gain deeper knowledge. 2.) For #2 (high priority) - skim content to gain a general understanding and formulate general concept questions to ask the lecturer. 3.) For #3, #4, etc. (moderate priority) - briefly skim content to identify the title of major topics and formulate questions on basic concepts. 1.) (PDF) *Physical Rehabilitation* Ch 1: Clinical Decision Making, p. 3-24 2.) *Pathology, Implications for the Physical Therapist* Ch 1: Introduction to Concepts of Pathology, p. 1-16 3.) (PDF) Clinical Pathology Presentation and Handout Grade Form
2	Mon Aug 26 ***Guest lecturer - Dress professionally for this class and all classes thereafter***	Orthopedics and Rehabilitation (Overview): Overview • Introduction to orthopedic medicine – scope of practice of the orthopedist • How does the orthopedist work with the Orthotist/Prosthetist • Clinical terminology • Musculoskeletal disease theory, etiological	Robin Deandrade, MD 1.) *Pathology Implications for the Physical Therapist* Ch 6: Injury, Inflammation, and Healing, p. 197-240 2.) *Salter RB. Textbook of Disorders and Injuries to the Musculoskeletal System.3rd ed.*

	in this course	classification • Cell pathology • Inflammation • Reactions of musculoskeletal tissues to disorders and injuries • Diagnosis of musculoskeletal disorders and injuries Orthopedics (Amputations): • Indications and contraindications for limb amputation • Overview of lower limb amputation procedures Evaluation and Treatment of Rheumatoid Arthritis	*1999* Ch 1: Introduction: The Past and Present, p. 1-5 Ch 2: Normal Structure and Function of Musculoskeletal Tissues, p. 7-28 Ch 3: Reactions of Musculoskeletal Tissues to Disorders and Injuries, p. 29-49 Ch 4: Some Important Pairs of Clinical Terms, p. 51-59 Ch 5: Diagnosis of Musculoskeletal Disorders and Injuries, p. 61-90
3	Sept 2	**LABOUR DAY – NO CLASS**	
		ON LINE QUIZ #1 **(week 1-2 content, quiz open Sept. 9-15)**	**Must complete no later than 11:59 pm on Sept. 15**
4	Sept 9	Gerontology: Anatomical & Physiological Changes with Aging: A Case Study Approach • What is a Physical Therapist – training & education • What is a Physical Therapist's Scope of Practice • How do PT's work with Prosthetist/Orthotists • Current and future demographics in the US • Social perceptions of aging-the elderly in the US • "Diseases of aging" • Body systems changes • Cognition & memory • Musculoskeletal: muscle atrophy, joint & bone integrity, dexterity • Neurological: sensation, proprioception, balance, coordination	Carol Miller, PT, PhD, GCS All of the selected readings for this lecture topic are important 1.) *Orthotics and Prosthetics in Rehabilitation, 3rd ed. 2013* Ch 4: Aging and Activity Tolerance: Implications for Orthotic and Prosthetic Rehabilitation, p. 69 – 92 2.) (PDF) Handout on Geriatrics 3.) Use internet search to answer guided learning questions noted in #2 4.) (PDF) Cardiovascular Physiology-Changes With Aging; 2003 5.) (PDF) Positive and Negative Neuroplasticity Implications for Age Related Cognitive Declines 6.) (PDF)

			Aging Skeletal Muscle: Physiologic Changes and the Effects of Training 7.) (PDF) Aging of the Somatosensory System: A Translational Perspective
5	Sept 16	Pediatric Orthopedics • Scope of practice of the pediatric orthopaedist • Overview of growth • Review of the orthopedic physical examination of a child (ages birth to 4, 4 to 10, 10 to 18) • Assessment and treatment of pathological conditions affecting neuromuscular and skeletal systems that orthopedists commonly treat: ○ Spina Bifida ○ Cerebral Palsy ○ Talipes Equinovarus (club foot)	Rebecca Whitesell, MD John Faust, MD Colleen O'Berry, PhD, DPT 1.) (PDF) *Lovell and Winter's Pediatric Orthopaedics (Vol. 1, 5th ed.; 2000)* Ch. 4: The Pediatric Orthopaedic Examination, p. 99-129 2.) (PDF) *Lovell and Winter's Pediatric Orthopaedics (Vol. 1, 5th ed.; 2000)* Ch. 2: Growth in Pediatric Orthopedics, p. 34-44
		ON LINE QUIZ #2 **(week 4-5 content, quiz open Sept. 23-29)**	**Must complete no later than 11:59 pm on Sept. 29**
6	Sept 23	Physiatry – Focus on Musculoskeletal Rehabilitation • Scope of practice of the physiatrist • Team approach to patient rehabilitation • Overview of musculoskeletal rehabilitation • Assessment and management of myopathies, connective tissue disorders, arthritis, fracture	Patrick Nguyen, MD 1.) *Pathology: Implications for the Physical Therapist* Ch 27: Soft Tissue, Joint and Bone Disorders, p. 1235-1317
		DUE DATE CLINICAL PATHOLOGY PRESENTATION TOPIC PLUS FIVE (5) REFERENCES	**Must submit via email to Rob Kistenberg no later than 11:59 pm on Sept 23**
7	Sept 30	Pharmacology: • Scope of practice of an internal medicine physician • Physician's philosophy of use of medications for treatment • Resources for clinically oriented drug information	Lisa Bernstein, MD 1.) (PDF) *Ciccone CD. Pharmacology in Rehabilitation. 4th ed.; 2007* Ch 1: Basic Principles of Pharmacology, p. 3-12

		• Drug nomenclature • Drug development and approval • Prescription vs. over-the-counter drugs • Dose response curves, beneficial and toxic effects • How drugs are administered – why are some drugs prescribed orally while others are administered intravenously, intrathecally or via other means? • Movement across membrane barriers • How drugs are eliminated (biotransformation, clearance, half-life) • Dose schedules – what is it and generally what do they mean?) • Overview of types of drugs administered for rehabilitation populations	Ch 2: Pharmacokinetics I, p. 13-27 Ch 3: Pharmacokinetics II, p. 29-39 2.) (PDF) *Ciccone CD. Pharmacology in Rehabilitation. 4th ed.; 2007* Special Concerns for Rehab Populations and Case Study: Antidepressant Drugs, p. 88-89 Antipsychotic Drugs, p. 101 Antiepileptic Drugs, p. 114-115 Anti-Parkinson Drugs, p. 130-131 General Anesthetics, p. 145 Local Anesthetics, p. 157 Muscle Relaxants, p. 174-176 Opoid Analgesics, p. 194-195 NSAIDs, p. 212-213 Antiarthritic Drugs, p. 231-232 Patient Controlled Analgesia, p. 246-247 Antihypertensive Drugs, p. 301-302 Antianginal Drugs, p. 316-317 Antiarrhythmic Drugs, p. 328-329 Congestive Heart Failure, p. 343-344 Clotting Disorders, p. 361-362 Respiratory Drugs, p. 383-384 Gastrointestinal Drugs, p. 398-399 Adrenocorticosteroids, p. 429-430 Male & Female Hormones, p. 453-454 Bone Mineralization, p. 471-472 Diabetes Mellitus, p. 490-492 Antibacterial Drugs, p. 518-519 Antiviral Drugs, p. 540-541 Antifungal Drugs, p. 560-561 Cancer Chemotherapy, p. 586-587 Immunomodulating Agents, p. 600-602 Complimentary & Alternative Medicines, p. 614-615

		ON LINE QUIZ #3 **(week 6-7 content, quiz open Oct. 7-13)**	**Must complete no later than 11:59 pm on Oct. 13**
8	Oct 7	Dermatology: • Scope of practice of a dermatologist • Philosophy of dermatological patient care • Overview of dermatology • Dermatological pathology pertaining to Prosthetics and Orthotics • Principles of dermatology • Structure and function of skin • Pathogenic mechanisms of skin disease • Dermatologic therapy • Ulcers • Clinical patient case study – individual with neuropathic skin ulcer (orthosis wearer), individual with folliculitis (prosthesis wearer)	Laura Delong, MD 1.) *Pathology: Implications for the Physical Therapist* Ch 10: The Integumentary System, p. 392-452 2.) (PDF) *Atlas of Amputations and Limb Deficiencies*. 2004; Ch 55: Skin Problems of the Amputee, p. 701-710 3.) (Word document) Dermatology recommendations for dry skin 4.) (Word document) Skin remedies for amputees
9	Oct 14	**FALL BREAK – NO CLASS**	
10	Oct 21	Endocrinology – Focus on Diagnosis & Management of Diabetes • Overview of diabetes mellitus • Pathophysiology of disease of diabetes mellitus • General overview of how to assess the clinical pathology of diabetes mellitus • Overview of treatments for diabetes mellitus	Janine Freeman, RDN, LD, CDE, CDTP 1.) *Pathology: Implications for the Physical Therapist*, Ch. 11: The Endocrine and Metabolic Systems, p. 487-515 (focus on section regarding Diabetes Mellitus) 2.) (PDF) *Pharmacology in Rehabilitation* Special Concerns for Rehab Populations and Case Study: Diabetes Mellitus, p. 490-4923 3.) (PDF) Inzucchi S – Position paper on diabetes care 4.) (PDF) Diabetes overview
		ON LINE QUIZ #4 **(week 8&10 content, quiz open Oct. 28-Nov. 3)**	**Must complete no later than 11:59 pm on Nov. 3**

11	Oct 28	Podiatry: • History of podiatry and its evidence base as a profession • Scope of practice of the podiatrist • Podiatrist's view of subtalar joint biomechanics • subtalar "neutral" (is it valid and reliable?) • role of joint structure and function in sports performance and arthritis • Overview of arthritis (types, signs and symptoms) • Podiatrist's view of orthoses as part of a treatment plan • Clinical examination of foot and ankle function • Subtalar neutral, limb length, affects of various foot orthoses on alignment and joint function • Suggestions for research in lower limb structure and function	Nathan Swartz, DPM 1.) (PDF) *Naele's Disorders of the Foot. 7th ed.; 2006* Ch 4: General Foot Disorders, p. 89-163 2.) (PDF) *O'Sullivan SB, Schmitz TJ. Physical Rehabilitation. 5th ed.; 2007* Ch 26: Arthritis, p. 1058-1089
12	Nov 4	Adjustment to Disability • Understanding grief and loss and its effects on limb loss • Signs and symptoms of depression and anxiety • Post-traumatic stress disorder • How/when to refer patients for mental health treatment • Clinician/patient relationship • Managing the whole family as a patient • Understanding displaced anger and aggression • Coping strategies and developmental stages	Wells Petras, MA, LPC 1.) (PDF) *Psychoprosthetics* Ch 1: Introduction, p. 1-10 Ch 2: Coping and Psychological Adjustment to Amputation, p. 11-22 Ch 6 Psychological Adjustment to LLA, Evaluation of Outcomes, p. 67-90 2.) (PDF) *Physical Rehabilitation* Ch. 2: Influence of Psychosocial Factors on Rehabilitation, p. 27-59 Appendix A, B and C, p. 60-64
		ON LINE QUIZ #5 **(week 11-12 content, quiz open Nov. 11-17)**	**Must complete no later than 11:59 pm on Nov. 17**
13	Nov 11	Physiatry – Focus on Neuromuscular Rehabilitation • Overview of upper motor neuron system • Overview of upper motor neuron system disorders • Stroke • Traumatic Brain Injury • Traumatic Spinal Cord Injury • Other Neuromuscular Disorders • Flaccid and spastic paralysis • Treatment of joint disorders as a result of upper	Laura Lee, MD 1.) *Pathology Implications for the Physical Therapist* Ch 28: Introduction to Central Nervous System Disorders, p. 1319-1342 Ch 32: Stroke, p. 1449-1476 Ch 33: Traumatic Brain Injury, p. 1477-1495 Ch 34: Traumatic Spinal Cord

		motor neuron disorders (muscle imbalance, contractures, spasticity)	Injury, p. 1496-1516 2.) (PDF) Optional Reading – helpful information when attending PM&R Clinical Rotations at the VAMC *Physical Rehabilitation* Ch 9: Electromyography and Nerve Conduction Velocity Tests, p. 273-316
14	Nov 18	Diagnostic Imaging • Overview of CT, MRI, ultrasonography, nuclear imaging, x-ray • Differences between each of these diagnostic imaging instruments • Conditions in which these diagnostic imaging instruments are used • How does the clinician orient and interpret the various images produced from these instruments?	Michael Terk, MD 1.) (PDF) *Radiology 101 The Basics and Fundamentals of Imaging* Ch 1: Radiology, CT, MRI, Ultrasonography, Principles and Indications, p. 3-15 Ch 2: Chest, p. 19-27 Ch 3: Abdomen, p. 77-88 Ch 5: Musculoskeletal Imaging, p. 175-188 Ch 6: Spine and Pelvis, p. 265-289 Ch 7: Brain, p. 319-321 Ch 9: Nuclear Imaging, p. 347-354
		ON LINE QUIZ #6 **(week 13-14 content, quiz open Nov. 25-Dec. 1)**	**Must complete no later than 11:59 pm on Dec. 1**
15	Nov 25 ***This lecture will be at VAMC***	Vascular Medicine • Review of peripheral vascular system (arteries, venous, lymphatic) • Review of vasculature to the brain • TIA, Stroke, RIND, stroke syndromes, extracranial cerebrovascular disease • Mechanisms and manifestation of cerebral ischemia • Peripheral vascular disorders • Lower extremity arterial disease • Mechanisms of arterial disease • Arteriosclerosis obliterans • Throembolism, DVT, post-thrombotic syndrome • Aneurismal disease • Microvascular techniques to restore circulation in the extremities	Atef Salam, MD 1.) *Pathology Implications for the Physical Therapist* Ch 12:The Cardiovascular System, p. 588-641 2.) (PDF) *Atlas of Amputations and Limb Deficiencies* Ch 3: Vascular Disease Limb Salvage vs. Amputation, p. 31-45 3.) *Pathology Implications for the Physical Therapist* Ch 13: The Lymphatic System, p. 642-677

		• Angioplasty • Non-invasive testing – Ankle Brachial Index (ABI), treadmill walking test • Arteriography • Lower extremity venous disease • Lower extremity amputation	
		ON LINE QUIZ #7 **(week 15 content, quiz open Dec. 2-8)**	**Must complete no later than 11:59 pm on Dec. 8**
16	Dec 2	Student Presentations of Clinical Pathology (each student submits written Presentation Handout before presentation)	Moderators: Christopher Hovorka Robert Kistenberg
17	Dec 9	Student Presentations of Clinical Pathology (each student submits written Presentation Handout before presentation) Course Wrap Up	Moderators: Christopher Hovorka Robert Kistenberg

Directions to Off Campus Class Locations:

Veteran's Administration Medical Center (VAMC)
1670 Clairmont Road
Decatur, GA 30033
11th floor
Education Conference Room

- Take I-85 North to the Clairmont Exit, exit 91
- Turn right onto Clairmont Road (heading east)
- Continue on Clairmont Road for approximately 3.5 miles
- The VAMC is located on the right
- Turn right at the main entrance
- Turn left at the stop sign and follow the road to the parking garage
- Enter the main hospital building at the 2nd floor entrance from parking garage
- Go to the information desk and ask for directions to 11th floor Education Conference Room