PT 6816: NEUROANATOMY

COURSE SYLLABUS

Winter 2018

Course Days/Time/Location:

LECTURE: Thursday 8-9:47 am, MSC130

LAB: Thursday, 9:50-11:50 am, Anatomy Lab, 302 Hannah Hall

Credit Hours: 4

Instructors:

M.T. Bee, Ph.D.
163A Dodge Hall, Oakland University
bee@oakland.edu (best way to contact me, include course name in subject line: PT 6816)

Deb Doherty, PT, PhD
3154 HHB, Oakland University
doherty@oakland.edu
Contact me via email or cell phone at 989-529-4808

Office Hours:

- Dr. Mary Bee: Tuesday 10am-11am
- Dr. Deb Doherty: Thursday 12pm-1pm
- Or by Appointment.
- Concerns can also be handled immediately before/after lecture, during lab, and/or by email.

Required Text:

- Bee, Anwar and Metti. 2018. Synapse: A Workbook Approach to Neuroanatomy. First Edition. Kendall-Hunt Publishers, Dubuque, Iowa. ISBN: 978-1-5249-1174-4.
- Additional handouts will be posted on moodle or handed out in class, most students will prefer to have a 1 or 1.5 inch binder to compile all materials together.
- Color markers/pencils/highlighters (at least 6 different colors).
- Some lab procedures found in: Bee M, Tracy E. 2016. Bare Bones: Advanced Human Anatomy. 4th edition. Kendall-Hunt Publishers, Dubuque, Iowa. ISBN: 978-1-5249-3984-7.

Recommended Text:

(1) Clinical Neuroscience and Rehabilitation by Schenkman, Bowman, Gisbert and Butler, 2013
(2) Basic Clinical Neuroanatomy, P. Young and P. Young, 2007, 2nd edition, Lippincott Williams and Wilkins.
(3) *Neuroscience*, Krebs, 2011 edition, ISBN: 9781605473178
(4) Student's Gray Anatomy with online passcode, Drake et al., newest edition, Churchill-Livingstone, a subsidiary of Elsevier Science Publishing. London, England, Philadelphia, Pennsylvania and St. Louis, Missouri.
(5) Netter, Frank H. Atlas of Human Anatomy, 5th edition, Novartis, Summit, NJ. ISBN: 1-4160-3385-8
(6) Online texts in library. Here are a few highly utilized resources:

The following are linked directly from the Medical Library Homepage:

- Acland's Video Anatomy
- IMAIOS (eAnatomy)
- NetterPresenter includes Netter's Atlas of Human Anatomy and Netter's Concise Radiologic Anatomy

The following eBooks are also available (most are linked from Misa's Neuroscience Guide):

- Gray's Anatomy for Students by Drake
- Clinical Neuroanatomy and Neuroscience by Fitzgerald
- Clinical Neuroanatomy by Waxman
- Clinical Neuroanatomy Brain Circuitry and Its Disorders by Donkelaar
- Clinical Neuroanatomy: a Neurobehavioral Approach by Mendoza, et al.
- Fundamental Neuroscience for Basic and Clinical Applications by Haines
- Neurology and Clinical Neuroscience by Schapira

Misa's guide also includes links to several websites that might be useful!

Course Objectives:
Upon completion of this course the student will be able to:

- Integrate basic knowledge of structure and function of neuroanatomical structures to determine secondary or cascading stresses given a certain trauma or pathology.
- Use basic knowledge to anticipate and compare probable surgical and therapeutic approaches to treatment.
- Predict future effects of treatment on related structures exhibiting neurological deficiencies.
- Demonstrate synthesis of material organized by continually integrating the information of the central nervous system, peripheral nervous system, and the autonomic nervous systems.
- Perform dissection of neuroanatomical structures on cadavers including a laminectomy and craniotomy.
- Anticipate the effect of localized trauma or pathology on the nervous system and how it might be locally related.
- Assimilate and construct the basic material by practicing higher order metacognitive activities such as questioning, discussion, and reciprocal teaching in neuroanatomy.

Course Method: Lectures are supplemented by power point slides, computer assisted instruction and audiovisuals where pertinent. The course contains a laboratory wherein the student will do cadaver dissection to observe human structure that is relevant to the practice of physical therapists and biologists. Some lecture(s) and lab(s) may be held on-line, where mentioned in the schedule or as announced by the instructor. All students should ensure their access to moodle.oakland.edu. This course is a hybrid online course, by staying in the class you are accepting to work towards completing this advanced format of learning. You will need to use a computer with speakers and Powerpoint. This is available at computer centers on campus.

Grading Policy: The grading system will be based on point system shown below. Points are earned as follows. There are no extra credit opportunities. Cheating will result in the dismissal of the student from the university and such activities will be noted on that student's transcripts.

GRADES DETERMINED BY	
Unit 1 Exam	50 points
Midterm Comprehensive Lecture Exam	50 points
Midterm Comprehensive Lab Exam	100 points
Unit 2 Exam	50 points
Comprehensive Final Lecture Exam	50 points
Comprehensive Final Lab Exam	100 points
Advanced Cranial Dissection	10 points
Attend Anatomy Memorial Ceremony	10 points
Homework	72 points
Engagement in the Learning Process	10 points
TBL	5 points
Peer teaching to PTA required	10 points
TOTAL	**517 points**

Evaluation Criteria: There are NO make-up exams. If a test is missed, it must be under extreme circumstances and accompanied by an Emergency Room note or a letter from a funeral home for the day that you miss class only. The professor will never change the date of an exam. Students may not leave the room during an exam without permission. Cell phones nor hats are allowed during examinations. Clipboards may be inspected before each lab exam. No curve, remediation or extra credit. It is the student's responsibility to accurately transfer his or her correct option to the scantron. Students who fail to correctly transfer the answer, even though the correct option is written on his or her paper exam will not receive credit.

STUDENTS NEED AN 80% OVERALL GRADE TO PASS THIS CLASS.

GP Numerical	Letter	Percent		GP Numerical	Letter	Percent		GP Numerical	Letter	Percent
4.0	A	100 - 96		2.9	C	79		1.9	D	69
3.9	A	95		2.8	C	78		1.8	D	68
3.8	A	94		2.7	C	77		1.7	D	67
3.7	A	93 - 92		2.6	C	76		1.6	D	66
3.6	A	91 - 90		2.5	C	75		1.5	D	65
3.5	B	89		2.4	C	74		1.4	D	64
3.4	B	88		2.3	C	73		1.3	D	63
3.3	B	87 - 86		2.2	C	72		1.2	D	62
3.2	B	85 - 84		2.1	C	71		1.1	D	61
3.1	B	83 - 82		2.0	C	70		1.0	D	60
3.0	B	80-81						0.0	E	59 and below

COURSE OBJECTIVES

Incomplete Grade: A student may request an incomplete grade from the faculty if there is an extremely vital, legitimate reason acceptable to the instructor and the student is progressing satisfactorily with at least a 2.5 in the course. The faculty and student must agree on the time limit for completion of the course and sign the appropriate form in the Dean's office. Requirements must be completed no later than the sixth week of the following semester. Failure to meet the stated requirements will result in an automatic grade of "F".

STUDENT RESPONSIBILIITES

Class Clean Up:

Each student is responsible for cleanup of his or her work area following each class. Covering bodies in the cadaver lab as instructed is essential to prevent drying of the bodies.

Academic conduct statement: Students are expected to adhere to the procedures for Academic Conduct described in the University Graduate Catalog. Please read and refer to the University Graduate Catalog, Policy on Academic Conduct. This policy states that "All members of the academic community . . . are expected to practice and uphold standards of academic integrity and honesty. Academic integrity means representing oneself and ones work honestly. Misrepresentation is cheating since it means students are claiming credit for ideas or work not actually theirs and are thereby seeking a grade that is not actually earned." Examples of cheating include "cheating on exams, using books and/or notes when not authorized to do so, copying from someone else's work or ideas without giving that person credit. Both direct quotations and paraphrases must be documented. Even if students rephrase, condense, or select from another person's

work, the ideas are still the other person's and failure to give credit constitutes plagiarism of another's idea." This policy will be applied in this and all courses in the Program in Physical Therapy. Students found guilty of academic misconduct by the university will be subject to university sanctions and to sanctions from the program by the Physical Therapy Promotion and Honors Committee including probation, suspension or dismissal.

Veteran Support Services: The office of Veteran Support Services (VSS) is responsible for giving support services to more than 300 veterans, service members, and dependents of veterans. VSS is staffed with personnel who are veterans and current or former students. Any student veteran or dependent of a veteran requiring assistance with navigating the Veterans Administration, understanding service-related benefits, or requires referrals to campus and community resources should contact one of the Veterans Liaisons by visiting 116 North Foundation Hall, or phoning 248-370-2010.

Accommodations /Disability support services statement: Any student with a documented disability needing academic accommodations is required to speak with the Office of Disability Support Services to make arrangements. The office is located in room 106 North Foundation Hall. For information or to make an appointment call 370-3266.

Emergency Preparedness Statement: All students are encouraged to become familiar with the Oakland University Emergency Preparedness Website, Policies and Procedures.
See: http://www4.oakland.edu/?id=5410&sid=188 In particular, students are strongly encouraged to:
1) Take the 15-minute *Violence Prevention Training Course* available on the site
2) Sign up to receive text message alerts in the event of a major campus emergency by visiting the **Emergency Notification** Web site (Grizz ID and valid OU e-mail address required)
3) Know how to contact the OUPD in the event of an emergency:

- Call **911** from any campus phone
- Call (248) 370-3333 from a cell phone
- Text the dispatch office at **911@oakland.edu**
- E-mail the dispatch office at **911@oakland.edu**

4) Know how to **submit anonymous tips** online in non-emergency situations.

Respect for others: OU is committed to fostering a safe, productive learning environment. OU's Title IX policy prohibits sex and gender-based discrimination including sexual or gender-based harassment, sexual exploitation, sexual assault, intimate partner violence/dating violence, stalking, cyberstalking, and retaliation. If you have encountered any form of sexual misconduct (e.g. sexual assault, sexual harassment, stalking, domestic or dating violence), you are encouraged to report this to the Dean of Students. As a community committed to accepting and supporting both our differences and commonalities – whether they be in terms of race; sex; gender identity or expression; sexual orientation; age; physical characteristics; beliefs; national origin or ancestry; marital, familial or veteran status; class; geography; language; socioeconomic status or other aspects of the human condition – we are reminded of how crucial it is to remain vigilant in efforts to circumvent agendas of hatred.

Professionalism/Participation is composed of behaviors presented in lecture, lab and during class discussions (either in class or on-line). It is important for the student to attend class, read assignments prior to class, contribute to class and web-based discussions, be prepared for and participate in class discussions.

1. It is mandatory that all students will ***wear closed toed shoes*** during all labs to prevent injury using instruments. Failure to wear closed toed shoes will result in student not being able to work in the lab. This reflects dress codes that are required by all clinics for safety during patient care. Failure to comply with this dress code will result in 10 points deducted from the final grade for each infraction as well as not being able to work in the lab that day which will result in another 20 points deducted for each infraction.
2. It is expected that you will attend all lectures and labs. This reflects the expectations of the clinic when if you are unable to come to work, you call in and let your employer know. It is mandatory to

email the professor(s) prior to the class start if you are unable to attend. Failure to notify the professor will result in 10 points deducted from the total grade for each infraction.

3. In the lab you will be part of a dissection team. As in the clinic when you work on team, you will take a turn at doing each activity in sequence with the others members of your team (dissection, retraction or positioning the cadaver, reading the lab guide, acquiring support materials such as bones, atlases and models).
4. Lab policies and procedures are to be strictly adhered to. Inappropriate conduct will result in dismissal of the student from this course. Students are expected to help with lab clean-up just like cleanup of the clinic is handled by all employees regardless of who made the mess. ***Failure to clean up the lab where the DPT cadaver bodies are including if any are moved from another room will result in 5 points per class taken away from all students regardless of which area is not cleaned up.***
5. *****PROFESSIONALISM AND PARTICIPATION ARE EXPECTED IN ALL CLASSES. FAILURE TO BE PROFESSIONAL AND PARTICIPATORY WILL RESULT IN POINTS TAKEN AWAY FROM THE FINAL GRADE. INSTRUCTOR HAS THE RIGHT TO DETERMINE THE NUMBER OF POINTS THAT CAN BE TAKEN AWAY FOR EACH INCIDENT.
6. It is the discretion of the instructor/facilitator to determine when breaks will occur during the class. It is expected that students needing to leave the room at a different time other than the instructor determined breaks will professionally and quietly leave the classroom as needed without disrupting any other student learning or interrupting the instructor. It will be considered unprofessional behavior to interrupt the instructor and ask for a break. This behavior may result in points taken away from a student's final grade. This type of professional behavior reflects the professional behavior expected and demonstrated at all professional conferences and work place meetings.
7. It is considered professional behavior to listen to the professor and not spend time talking to fellow students or colleagues in the room while the presentation is occurring. Talking to a fellow student or colleague during a presentation that prevents other students or colleagues in the room from hearing the professor or disrupts another students learning is considered unprofessional behavior. If it is necessary to have a conversation with a fellow student or colleague during the presentation, it is expected that the students will professionally and quietly leave the room without disrupting any other participants learning. This type of professional behavior reflects the professional behavior expected and demonstrated at all professional conferences as well as work place meetings. This behavior may result in points taken away from the student's final grade.
8. It is expected that you will attend all lectures and labs. In the lab you will be part of a dissection team and will take a turn at doing each activity in sequence with the others members of your team (dissection, retraction or positioning the cadaver, reading the lab guide, acquiring support materials such as bones, atlases and models). Cell phones and pagers must be in the silence mode or off during lecture and lab. All students are expected to aid in the cleanup at the end of the semester, failure to do so will result in the loss of 30 points.
9. Points may be removed from final grade if student does not participate in the following manner:
10. Be prepared for class by having read assigned reading and reviewing course notes as appropriate.
11. Actively participating during lecture classes and discussions
12. Demonstrating professional, "clinic-like" behavior as outlined below (based on the Generic Abilities, UWM, 1996):
    a. Identify/locate appropriate resources to complete course assignments
    b. Demonstrate a positive attitude toward learning
    c. Offer thoughts and ideas in class
    d. Prioritize information needs
    e. Accept that there may be more than one answer to any problem or case study
    f. Maintain a professional demeanor in all classes
    g. Respect cultural and personal differences of others
    h. Communicate with others in a respectful manner
    i. Respect the personal space of others
    j. Maintain confidentiality in all classroom interactions
    k. Assume responsibilities for one's own actions
    l. Use existing resources and unscheduled time effectively
    m. Complete assignments in a timely fashion

n. Actively seek feedback and help when necessary in a timely manner
o. Demonstrate a positive attitude toward feedback
p. Develop a plan of action in response to feedback
q. Assess one's own performance accurately
r. Abide by the APTA Code of Ethics
s. Demonstrate dependability and punctuality
t. Accept constructive feedback in an appropriate manner
u. Provide constructive feedback to classmates in a diplomatic manner
v. Participate actively in group projects
w. Prompt attendance in class
x. Prepared for class discussions and activities

PT 516 COURSE SCHEDULE

Date	In class Lecture	Lab	Hybrid On-Line Lecture (Source of notes is in brackets)
			❑ **LAB PREPARATION:** ❑ Read: Neck Dissection *(BB 159)* ❑ Watch: Neck Dissection Video
1/4	❑ Course Introduction ❑ Ch. 25: Neck ❑ Ch. 1: Nervous System in General	❑ Lab Team Assignments ❑ Neck Dissection	❑ Ch. 17: Introduction to Plexuses ❑ Ch. 18: Brachial Plexus ❑ Ch. 19: Nerves of the Upper Limb ❑ Ch. 20: Cutaneous Nerve Supply of the Upper Limb ❑ **LAB PREPARATION:** ❑ Read: Skull Lab List *(BB 147)*, Cranial Cavity Dissection *(BB 148-153)* ❑ Watch: Craniotomy Dissection Video, Skull Video
1/11	❑ **Homework due: CH 1, 25, 17, 18, 19, 20** ❑ Ch. 2: Neuroembryology and CNS Orientation ❑ Ch. 21: Brachial Plexus Entrapments Part 1	❑ Complete Neck Dissection ❑ Brachial Plexus Lab ❑ Craniotomies ❑ Cranial Cavity Dissection 1	❑ Ch. 22: Lumbosacral Plexus ❑ Ch. 23: Nerves of the Lower Limb ❑ Ch. 24: Cutaneous Nerve Supply of the Lower Limb ❑ **LAB PREPARATION:** ❑ Read: Brain Dissection *(BB 154-156)*
1/18	❑ **Homework due: CH 2, 22, 23, 24** ❑ Ch. 21: Brachial Plexus Entrapments Part 2 ❑ Group 1 present UL cutaneous nerve supply ❑ Group 2 present LL cutaneous nerve supply	❑ Brachial Plexus Lab ❑ Lumbosacral Plexus Lab ❑ Cranial Cavity Dissection 2	❑ Ch. 3: Skull ❑ Ch. 4: Joints of the Skull ❑ Ch. 5: Scalp and Cranial Cavity ❑ Ch. 6: Gross Brain Structure ❑ Ch. 7: CSF Flow Pattern
1/25	❑ **Homework due: CH 21, 3, 4, 5, 6, 7** ❑ **UNIT 1 EXAM** ❑ Ch. 8: Gross Brain Function	❑ Brain Dissection ❑ Brain Slices ❑ Submit advanced dissection requests	❑ Ch. 9: Internal Brain Structures
2/1	❑ **Homework due: CH 9** ❑ Ch. 8: Gross Brain Function ❑ Group 3 presents cranial bones of skull and joints of skull ❑ Group 4 presents facial bones of skull and fetal skull	❑ Skull peer demonstrations ❑ Brain Dissection ❑ Brain Slices	❑ Ch. 10: Reticular System

2/8	❑ **Homework due: CH 8, 10** ❑ Ch. 14: Basal Nuclei ❑ Group 5 presents Scalp and Cranial Cavity ❑ Group 6 presents CSF Flow Pattern	❑ Advanced Dissection preparation (but not dissection) ❑ Reading MRIs ❑ Brain slice structure and function charts and demos	❑ Ch. 11: Limbic System ❑ Ch. 15: Introduction to Cranial Nerves
2/15	❑ **Homework due: CH 14, 11, 15** ❑ Ch. 12: Brainstem	❑ Review for Midterm	❑ Ch. 13: Cerebellum
2/22	**SPRING BREAK**	**SPRING BREAK**	
3/1	❑ **Homework due: CH 12, 13** ❑ **LECTURE MIDTERM EXAM**	❑ **LAB MIDTERM EXAM**	❑ Ch. 28: Deep Musculature of the Back ❑ Ch. 16: Cranial Nerves Part 1
3/8	❑ **Homework due: CH 28** ❑ Ch. 16: Cranial Nerves Part 2	❑ Advanced Dissections	❑ Ch. 30: Spinal Cord and Meninges ❑ Ch. 31: Surface and Cross-Sectional Spinal Cord Anatomy
3/15	❑ **Homework due: CH 30, 31** ❑ Ch. 16: Cranial Nerves Part 3 ❑ Ch. 32: Spinal Cord Fiber Tracts	❑ Advanced Dissection Presentations ❑ Testing Cranial Nerve Function (Handout, BB 92-93)	❑ Ch. 35: Introduction to Special Senses ❑ Ch. 36: Vision ❑ **LAB PREPARATION:** ❑ Read: Deep Back Muscle Dissection *(BB 68-69)*, Laminectomy Dissection *(BB 69-71)* ❑ Watch: Deep Back Muscle Dissection Video
3/22	❑ **Homework due: CH 16, 32, 35, 36** ❑ **UNIT EXAM 3** ❑ Ch. 33: Sensory Systems Part 1 ❑ Group 7 presents deep back muscles	❑ Cranial Nerve Lab Synopsis: Skull, Cranial Cavity, Brain ❑ Deep Back Muscles, Articulations, Laminectomy and Models Part 1	❑ Ch. 37: Hearing ❑ Ch. 38: Vestibular System
3/29	❑ **Homework due: CH 37, 38** ❑ Ch. 33: Sensory Systems Part 2 ❑ Ch. 34: Motor Systems Part 1	❑ Deep Back Muscles, Articulations, Laminectomy and Models Part 2 ❑ Spinal Cord Dissection, Spinal Cord Models ❑ Create Models of Spinal Cord Tracts Part 1	❑ Spinal cord injury (Handout) ❑ Spinal Cord Injury Forum - see moodle for instructions
4/5	❑ **Homework due: CH 33** ❑ Ch. 34: Motor Systems Part 2 ❑ Alzheimer's Disease Lecture by Dr. Doherty	❑ Create Models of Spinal Cord Tracts Part 2	❑ Ch. 39: Autonomic Nervous System
4/12	❑ **Homework due: CH 30, 39** ❑ TBL	❑ Demos of Motor Tract Models ❑ Review for Final Exam	
4/19 8am-11am	❑ **FINAL LECTURE EXAM**	❑ **FINAL LAB EXAM**	

Any material that is not fully covered in class may be provided as an online lecture for the students to complete that same week.