Syllabus PNB 510- Alternative summer 2015

Course Title: Fundamentals of Intraoperative Neuromonitoring (PNB 510)
Program/Department: Physiology and Neurobiology

Program Information

The purpose of this course is to provide students with information about Intraoperative Neuromonitoring (IONM) and electrophysiology. The first part of this course will focus on an introduction of IONM, professional organizations in IONM, basics underlying electrophysiology and obtaining neural signals, describing different modalities that are commonly tested, and describing operating room environment and working conditions. The second part of the course will provide an in-depth look at each of the common modalities described in the first portion of the course. This part of the course will conclude by introducing students to neurological exams, common neurosurgical and orthopedic surgeries that employ IONM, and definition of the role of an individual working in the field of IONM.

Course and Instructor Information

Course Title: Fundamentals of Intraoperative Neuromonitoring
Credits: 3
Format: Blended
Prerequisites: Bachelor in Science, biology background
Professor: Payam Andalib

Email: payam.andalib@safepassagenm.com
Telephone: 1-860-486-5970
Other: 1-860-933-4011
Office Hours/Availability: Tuesday and Thursday 1:45pm-2:45 pm: TLS 19

Course Materials

Required course materials should be obtained before the first day of class.

Recommended Books:

Textbooks:

Required Software:
Course Description
Overview of intraoperative neuromonitoring. Basics underlying recording of signals and discussion of main neuromonitoring modalities, common surgeries employing neuromonitoring, operating room protocols and procedures.

Course Objectives
By the end of the semester, students should be able to:

1. Describe the purpose of IONM and common IONM tests that are performed in the operating room.
2. Describe the 10-20 international system and list all the important landmarks in this system.
3. Identify important components of an electrical circuit and describe Ohm’s law.
4. List common modalities employed by IONM; describe basics of recording the evoked potential responses and other IONM modalities.
5. List different components of anesthesia and describe the effects of anesthesia regimen on obtained IONM responses.
6. List important milestones for documentation in the operating room; identify significant changes in signals and how to report them.
7. Describe the operating rooms rules and regulations, list expectations from a neuromonitoring technologist in the operating room setting, and demonstrate proper practices in the operation room.

Course Outline

Module 1: Week 1- IONM Basics and Common Modalities
6/19/15 – 6/25/15 (Friday – Thursday, 9:30 am- 1:30 pm)
Day 1: Introduction to IONM and Basics of Recording
Day 2: Somatosensory Evoked Potentials (SSEPs)
Day 3: Electromyograms (EMGs) and Transcranial Electrical Motor Evoked Potentials (TcMEPs)
Day 4: Brainstem Auditory Evoked Responses (BAERs)
Day 5: Electroencephalograms (EEGs) and Other IONM Modalities – Exam 1

Module 2: Week 2 – Factors Affecting Daily Job Performance of IONM Personnel
6/26/15 – 7/2/15 (Monday – Thursday, 9:30 am- 1:30 pm)
Day 6: Anesthesia and Optimizing Signals
Day 7: Neurological Exam and Common Surgeries and Appropriate Modalities
Day 8: Common rules of the operating room (OR)
Day 9: OR documentation
Day 10: Dos and don’ts in the operative room setting – Exam 2
Course Requirements and Grading

Summary of Course Grading:

<table>
<thead>
<tr>
<th>Course Components</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Module 1</td>
<td>50%</td>
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<tr>
<td>Module 2</td>
<td>50%</td>
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Module 1: Week 1 – In class and on-line quizzes (10%), Exam 1 (40%)

Module 2: Week 2 – In class and on-line quizzes (10%), Exam 2 (40%)

Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Letter Grade</th>
<th>GPA</th>
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<tbody>
<tr>
<td>97-100</td>
<td>A+</td>
<td>4.3</td>
</tr>
<tr>
<td>93-96</td>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>90-92</td>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>87-89</td>
<td>B+</td>
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<tr>
<td>83-86</td>
<td>B</td>
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<tr>
<td>80-82</td>
<td>B-</td>
<td>2.7</td>
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<tr>
<td>77-79</td>
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<td>&lt;60</td>
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</table>

Due Dates and Late Policy

All course due dates are identified in the Husky CT. Deadlines are based on Eastern Standard Time; if you are in a different time zone, please adjust your submittal times accordingly. The instructor reserves the right to change dates accordingly as the semester progresses. All changes will be communicated in an appropriate manner.

Late Policy - if you pass due date for quizzes you will receive 0 points for that quiz.

Feedback and Grades

I will make every effort to provide feedback on your email within 24h and exam grades in 48 h. To keep track of your performance in the course, refer to My Grades in HuskyCT.

Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain
standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. This section provides a brief overview to important standards, policies and resources.

**Student Code**

You are responsible for acting in accordance with the University of Connecticut’s Student Code Review and become familiar with these expectations. In particular, make sure you have read the section that applies to you on Academic Integrity:

- **Academic Integrity in Undergraduate Education and Research**
- **Academic Integrity in Graduate Education and Research**

Cheating and plagiarism are taken very seriously at the University of Connecticut. As a student, it is your responsibility to avoid plagiarism. If you need more information about the subject of plagiarism, use the following resources:

- **Plagiarism: How to Recognize it and How to Avoid It**
- **University of Connecticut Libraries’ Student Instruction** (includes research, citing and writing resources)

**Copyright**

Copyrighted materials within the course are only for the use of students enrolled in the course for purposes associated with this course and may not be retained or further disseminated.

**Netiquette and Communication**

At all times, course communication with fellow students and the instructor are to be professional and courteous. It is expected that you proofread all your written communication, including discussion posts, assignment submissions, and mail messages. If you are new to online learning or need a netiquette refresher, please look at this guide titled, **The Core Rules of Netiquette**.

**Adding or Dropping a Course**

If you should decide to add or drop a course, there are official procedures to follow:

- Matriculated students should add or drop a course through the **Student Administration System**.
- Non-degree students should refer to **Non-Degree Add/Drop Information** located on the registrar’s website.

You must officially drop a course to avoid receiving an "F" on your permanent transcript. Simply discontinuing class or informing the instructor you want to drop does not constitute an official drop of the course. For more information, refer to the:

- **Graduate Catalog**
Academic Support Resources

Technology and Academic Help provides a guide to technical and academic assistance.

Students with Disabilities

Students needing special accommodations should work with the University’s Center for Students with Disabilities (CSD). You may contact CSD by calling (860) 486-2020 or by emailing csd@uconn.edu. If your request for accommodation is approved, CSD will send an accommodation letter directly to your instructor(s) so that special arrangements can be made. (Note: Student requests for accommodation must be filed each semester.)

Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government.” (Retrieved March 24, 2013 from Blackboard's website)

Policy against Discrimination, Harassment and Inappropriate Romantic Relationships

The University is committed to maintaining an environment free of discrimination or discriminatory harassment directed toward any person or group within its community – students, employees, or visitors. Academic and professional excellence can flourish only when each member of our community is assured an atmosphere of mutual respect. All members of the University community are responsible for the maintenance of an academic and work environment in which people are free to learn and work without fear of discrimination or discriminatory harassment. In addition, inappropriate Romantic relationships can undermine the University’s mission when those in positions of authority abuse or appear to abuse their authority. To that end, and in accordance with federal and state law, the University prohibits discrimination and discriminatory harassment, as well as inappropriate Romantic relationships, and such behavior will be met with appropriate disciplinary action, up to and including dismissal from the University. Refer to the Policy against Discrimination, Harassment and Inappropriate Romantic Relationships for more information.

Sexual Assault Reporting Policy

To protect the campus community, all non-confidential University employees (including faculty) are required to report assaults they witness or are told about to the Office of Diversity & Equity under the Sexual Assault Response Policy. The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with University officials who can help. Refer to the Sexual Assault Reporting Policy for more information.

Software Requirements and Technical Help

- Word processing software
- Adobe Acrobat Reader
- Internet access

This course is completely facilitated online using the learning management platform, HuskyCT. If you have difficulty accessing HuskyCT, online students have access to the in person/live
person support options available during regular business hours in the Digital Learning Center. Students also have 24x7 Support with access to live chat, phone and support documents.

**Minimum Technical Skills**

To be successful in this course, you will need the following technical skills:

- Use electronic mail with attachments.
- Save files in commonly used word processing program formats.
- Copy and paste text, graphics or hyperlinks.
- Work within two or more browser windows simultaneously.
- Open and access PDF files.

University students are expected to demonstrate competency in Computer Technology. Explore the [Computer Technology Competencies](#) page for more information.

**Evaluation of the Course**

Students will be provided an opportunity to evaluate instruction in this course using the University’s standard procedures, which are administered by the [Office of Institutional Research and Effectiveness](#) (OIRE).

Additional informal formative surveys may also be administered within the course as an optional evaluation tool.