

POSM 101 – 001 & 101L:

23545            4 credits

Lecture: Monday 4:00-6:55  
HS229

Lab: Monday 7:30-9:00  
23546            0.0 credits  
HS231

Lecture/Lab Instructor:

Cell phone:

Office phone:

Email:

**Syllabus**

Fall: 2018

**Following Lab on Mondays**  
HS 229

Subject: Anatomy and  
Physiology for PSG

### **Course Description:**

This course is designed to provide didactic training in sleep medicine as it relates to the anatomy and the physiology monitored to aid in the diagnosis and treatment of sleep disorders. This is a basic level Polysomnographic Technology course building on concepts learned in CMAP 120 - Introduction to Computer Applications, HINM 116 - Medical Terminology II & PSYC 102 - General Psychology 02 and requires the consent of the department. The data acquisition for polysomnography will be covered in-depth as will concepts necessary to understand why these electrophysiological signals are necessary for diagnosis. A knowledge base in medical terminology, instrumentation, setup and calibration, sensor application, recording and monitoring techniques, documentation, professional issues and basic patient-technologist interactions are taught in this course. There will be workbook assignments in addition to chapter reviews as notated below. The lectures will generally follow the assigned reading but are used to support that reading and may introduce concepts not directly found in the assigned reading. A concentration on the structural and physiologic control of breathing and associated respiratory disorders seen during sleep will be discussed in-depth.

There is one written paper but two submissions – a thesis statement with your outline and the final paper. Record samples may be reviewed and concepts learned during those sessions may be included in the mid-term and final examinations.

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**Required Course Materials:**

*Fundamentals of sleep technology*, 2<sup>nd</sup> ed. Mattice, C, Brooks, R. & Lee-Chiong, T. eds. Lippincott, Williams & Wilkins, 2012.

*Essentials of Polysomnography*, 2<sup>nd</sup> ed. Spriggs, Wm.,  
*Rapid interpretation of EKG's* 6<sup>th</sup> Ed., Dale Dubin, MD, 2000

Subscription to Sleep Review Magazine (free) log onto <http://www.sleepreviewmag.com/> click onto free subscription link. Please list yourself as the MCCC Lab.

Subscription to Focus Magazine (free) log onto <http://www.foocus.com/subscriptions.php> and click on the subscription link. List yourself as the MCCC Lab.

### **Books from other courses that will be referenced:**

- Carney, P., Berry, R., Geyer, J.: *Clinical sleep disorders*. Lippincott, Williams & Wilkins, 2005
- *Cardiopulmonary Anatomy and Physiology* by DesJardins
- *Sleep Medicine Pearls*, 2<sup>nd</sup> ed., Berry, Mosby (an affiliate of Elsevier), 2003

**Teaching Format:** Instruction will consist of didactic lecture with PowerPoint presentations, question and answer periods and some in-class discussion on assigned readings, assigned class discussions, real life experiences in the sleep lab or current topics in the field. Open discussion on clinical experience is encouraged as long as the discussion is pertinent to the topics being discussed. Under no circumstances should the instructor be expected to diagnose those patients seen by students in clinical rotations or the friends, family members or hypothetical-other persons as presented by students no matter how thorough the presentation. In this regard, the instructor may open up the discussion on a hypothetical level to discuss the prevailing theoretical basis for the sleep disorder(s).

Instruction can and will focus on interesting findings you encounter in your reading. Test materials will come from lectures, assigned readings and class discussions.

**Attendance Policy:**

Attendance and classroom participation are mandatory. The student should call or text the instructor prior to the start of the class where late attendance is expected. A student can be dropped from the course in accordance with college policy for non-participation if in the opinion of the instructor:

- a. The student has withdrawn from the course without notice
- b. The student has fallen too far behind due to absenteeism defined as three or more unexcused absences
- c. For inappropriate classroom behavior

**Make-Ups:** Make up exams are given at instructors discretion depending on the *reason* for the absence. In order to be afforded the opportunity for a make up, a student must notify the instructor in writing prior to the test date and state the reason for missing the exam. **The final exam cannot be made up. Make up exams will be in essay format and graded for accuracy and clarity.**

**Confidentiality:** Discussions from the associated reading is encouraged and will become part of your attendance grade. Conversations about specific patients do fall into HIPPA regulations and are to be considered confidential. Under no circumstances should the student or the instructor use identifying data in public. Presentations should not include the name of any patient.

**Lecture Outline**

<b>DATE:</b>	<b>Reading/Assignment</b>	<b>TOPIC</b>
August 28		Review course syllabus -Course Intro
September 3		Labor Day – No Class
September 10	Fundamentals of Sleep Technology (FST) Ch. 1 & 2 (Spriggs) Ch. 1	A history of polysomnography Normal sleep – Sleep architecture
September 17	FST Ch. 3 & 4	Sleep across the lifespan Shift work ( <b>WB</b> )
September 24	FST Ch. 9 Spriggs Ch. 6 <b>Quiz#1</b>	Anatomical locations for polysomnography The EEG of sleep Professor conflict?
October 1	FST Ch. 5 & 8	Anatomic and Physiologic aspects of bio-potential acquisition (epidermis, eye, cardiac and skeletal)
October 8	FST Ch. 6 & 7	<b>Midterm 60→90 minutes</b> <b>Lit review thesis statement due – email to <a href="mailto:psorenso@cnmc.org">psorenso@cnmc.org</a></b>
October 15	FST Ch. 31 Spriggs, Ch. 8	Artifact recognition and troubleshooting
October 22	Dubin, Ch.1-4	The EKG and cardiac manifestations during PSG ( <b>WB</b> )
October 29	Dubin Ch. 5 <b>Quiz#2</b>	Respiratory physiology pertaining to polysomnography Cardiac Arrhythmias (Cont.)
November 5	Dubin, Ch. 6	Cardiac Arrhythmias (Cont.)
November 12	Spriggs Ch. 4	What you need to know about neurotransmitters and sleep <b>Lit Review paper due</b>
November 19	Study guide Handout(s)	Record review – time permitting. ( <b>WB</b> )
November 26	Presentations	In-class presentations of chosen topics
December 3		Course overview – Question & Answer (Makeup Lectures?)
December 10		Final Exam <b>PER MCCC SCHEDULE</b>

**Grading:**

<b>A</b>	<b>93- 100%</b>
<b>B</b>	<b>86- 92%</b>
<b>C</b>	<b>78- 85%</b>
<b>F</b>	<b>77% and below</b>

**COURSE EVALUATION:**

	<b>Date</b>	<b>% Final Grade</b>
<b>Midterm Exam</b> – 90 minutes long Multiple choice, True and False, matching, short essay, etc.	Oct. 8	15%
<b>Final Exam</b> – 90 minutes long Multiple choice, True and False, Matching, Fill in answers etc.	Dec. 10	15%
<b>2 Quizzes</b> (5% each)		10%
<b>Workbook</b>		15%
<b>Literature review paper</b>	Nov. 12	15%
<b>Presentation</b>	Nov. 26	15%
<b>Lecture Participation &amp; Attendance</b>	-----	15%
	<b>Total:</b>	<b>100%</b>

**The Literature Review Paper**

The research paper is a maximum 1,000-word double-spaced examination of a topic covered within the syllabus that interests you. It should contain one each of the 3 following types of relevant references: a **reliable** internet source, a journal article and a section in a book chapter. Each of these references will be cited according to the APA style as explained in class. The **thesis statement** should be an originally derived sentence or two that describes the topic of your paper and the overall point that you want to convey on that topic to the reader of your paper. The thesis statement is to be submitted on or before the date listed on your schedule with the 3 reference materials submitted with the pertinent items highlighted. Late submissions for either the thesis statement or the final paper will cost 5 points each on your final literature review paper grade. Your audience is the public in general that may or may not know anything about your topic where your goal is to educate them on your specific topic. Class discussions regarding issues involved in the writing of your paper are encouraged.

[psorenso@cmmc.org](mailto:psorenso@cmmc.org) – email at Children’s. The classroom presentation is your topic presented to the class on 11/26.

The completed paper is due on or before midnight on November 12th and both the thesis statement (due on or before midnight on October 8<sup>th</sup>) and final paper are to be **submitted by email** to the instructor.

**Workbook**

The workbook assignments will be taken mainly from the Essentials of Polysomnography and the Fundamentals of Sleep Technology. They will consist of 10 questions and will be turned in on the date listed in the syllabus on or before the end of the lab section.

**Laboratory**

By the end of the semester you will know how to properly set up a patient and run a study. We will start with the measurement of the head and will work our way to cover the entire set up. We will be using the Somnostar data acquisition system and the other facilities in the laboratory. We will be setting each other up and will run short study segments. Passing the laboratory portion will require your ability to run a study on someone on your own and leave the laboratory as clean as or cleaner than when you found it.

**Prior to setting up a classmate and in the following order to pass the lab section 101-1:**

You must know how to accurately measure a head according to the International 10-20 electrode placement system in less than 5 minutes without the guidance of the instructor or classmates. You must be able to identify the application location of each sensor used in PSG’s. You must set up a classmate and run the start of a PSG on your own in under 45 minutes with impedances of less than 5kΩ.

**Academic Ethics and Plagiarism:** The College expects all students to maintain high standards of academic honesty and integrity. Plagiarism is clearly an example of a violation of academic ethics and is a major offense and will not be tolerated.

Plagiarism is defined by the college to be the use of any other person's work or ideas as though the work or ideas were your own, without giving the appropriate credit. No work presenting verbatim writing will be accepted whether it is cited or not unless it is used to support the ideas of the student and is written in quotes.

Instances of plagiarism will be dealt with first by the instructor who discovers or is made aware of the incident. There shall be a range of penalties at the discretion of the instructor, which may extend to a recommendation to the Dean of Students for expulsion from the college.

Students are expected to maintain the integrity of the test taking environment by doing their own work and not allowing others to copy one's work. This means that during all quizzes and exams, at least one seat separates each student and all cell phones are turned to off and placed out of sight from the student. Talking and referring to phone texts is strictly prohibited during an exam. If cell phones are used in any way during an exam, you will be asked to turn your phone into the proctor until the exam is turned in. If you need to use the restroom during an exam, you must turn in your phone(s) to the exam proctor before you leave the room. Non-compliance to these standards may result in a failing grade on the exam. Cell phones should be off or on vibrate if and only if the student or teacher is expecting to be contacted regarding family or work-related situations. I may be required to be available by phone during the lab portion of our class but all efforts to minimize the conversation will be made.

#### **Student e-mail**

MC e-mail is an official means of communication for the college. Students are expected to check their e-mail regularly and frequently and are responsible for the information and announcements that will be sent from the college. For this class, e-mail/blackboard is the preferred method of contact for any questions or issues that may arise, outside of set office hours. My job responsibilities may prohibit me from checking MCCC e-mail daily so if you do not get a response on the day of your e-mail, please send me a text to check my MC e-mail.

#### **Students with Disabilities**

*Any student who may need an accommodation due to a disability, please make an appointment to see Cathy Wilson (240-567-1475) during her office hours. A letter from Disability Support Services authorizing your accommodations will be needed. Any student who may need assistance in the event of an emergency evacuation must identify to the Disability Support Services Office; guidelines for emergency evacuations for individuals with disabilities can be found at: [www.montgomerycollege.edu/dss/evacprocedures.htm](http://www.montgomerycollege.edu/dss/evacprocedures.htm)*

*Should any student require learning skills support, there are to contact Deborah Johnson in room HC 129, suite 126.*

#### **Clinical Controversy**

At times throughout the certificate program at Montgomery County Community College (MCCC) there will be differences in how sleep centers operate. Being a student this is a great opportunity to learn different techniques and ways to perform diagnostic testing. It is best to ask questions directed to the instructor in class during this first semester. Please do not discuss how other labs may perform testing in front of patients or their families. Do feel free to ask the MCCC instructors why an approach to a situation was used. Any outstanding issues or discrepancies within class theory versus clinical sites can and should be discussed in class only. While the student is in the MCCC polysomnographic technology program, they are expected to adhere to the standards of the instructors. How labs approach testing should be kept confidential from the patients being tested. All patients are to be informed that the student is in a polysomnographic technology program with the MCCC and is present for observation purposes only. Though unlikely, patients do have the right to refuse this observation.

#### **Classroom discussion parameters**

**The instructor gets breaks too. Be able to tell the difference between classroom and office hour discussion. Texting is forbidden – emergencies are announced to the instructor and calls can then be taken outside.**