

FAU COLLEGE OF MEDICINE

Syllabus

1. **Course title** : CMC Neuroscience and Behavior

Course number: BMS 6020

Number of credit hours: 10

2. **Course prerequisites:**

Accepted for matriculation in the FAU College of Medicine.

3. **Course logistics:**

a. term: Spring 2012

b. not an online course

c. Biomedical Science Building room BC-126, anatomy lab, small group PBL rooms.

4. **Instructor information:**

Course Director: Rainald Schmidt-Kastner, M.D.
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Course support: Ms Mavis Brown
Curriculum Coordinator
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Please note: Any official student communication from the director or curriculum coordinator will be sent via e-mail to students at their FAU e-mail addresses. If students would like to meet with the course director, they must call or e-mail the course director to schedule an appointment.

5. **TA contact information:**

N/A

6. **Course description:**

The Neuroscience and Behavior Course provides the basic concepts and vocabulary in the areas of neuroanatomy, neurophysiology, sensory systems, neurochemistry, neuropharmacology, neuropathology, neurology and psychiatry. The course uses an integrated approach by combining lectures, problem-based learning (PBL) and anatomy laboratory instruction. The PBL sessions in small groups will provide the fundamental knowledge of common neurological and psychiatric disorders that will be complemented by lectures for specific diseases. The presentation of the neuroanatomy component will emphasize correlations with clinical cases and lead to the

localization of brain lesions. The instruction in gross of anatomy of the head and neck will be integrated with clinical correlates.

7. Course objectives/student learning outcomes:

During this course the student will:

- Acquire the basic vocabulary of the basic and clinical neurosciences as related to structures, processes and diseases of the brain, spinal cord, peripheral nerves and muscles.
- Appreciate the concept of genetic predisposition and gene-environment interaction and how it affects the practice of neurology and psychiatry
- Outline the fundamental aspects of electrical function of nerve cells
- Describe the roles of various transmitter pathways in the brain
- Synthesize structure and function for the retina and cochlea
- Correlate basic normal human anatomy with images generated by CT and MRI scanning procedures
- Relate the gross anatomy components of the head and neck to the physical exam
- List the basic pathologic processes of the nervous system
- Determine the localization of lesions or sites of injury when presented with neurologic symptoms and provide suggestions for the pathophysiological mechanisms
- Recognize the abnormal findings on a neurologic and psychiatric exam of a patient with a cerebral disorder
- Synthesize the principles and practice of pharmacological therapy for neurological and psychiatric diseases
- Utilize a variety of resources (faculty, textbooks, computers, internet, etc.) to find information about anatomical, histological and developmental issues related to normal structure and clinical problems of the nervous system

8. Course evaluation method:

Examination Policy:

Exam Composition: All examination questions will be multiple-choice. Clinical vignettes will be used for many questions, and images will be incorporated as appropriate.

Approximately 1-2 questions per lecture hour, 1-2 questions per PBL case hour and 1-2 questions per laboratory hour will be used.

Exams will be delivered electronically via student laptops. Laboratory Practical Exams will be pen and paper exams.

During the exams, students are required to follow the examination protocol presented by the proctors. No specific questions regarding an exam item will be answered during any exam.

Examination Scoring: Scoring will be based solely on the answers recorded by the student on their laptop computer. Miskeying of answers will not be considered in grading a student's examination. Accuracy is the sole responsibility of the student.

Grades will be available via Blackboard in a timely fashion.

Viewing the Examination: All exams will be secure. Students can access a copy of the exam for review in the Office of Medical Education, Room BC-136

Grading Policy:

The course grade is made up of three components (exams, Anatomy exams & quizzes, and PBL). An unsatisfactory grade for any of the three components will result in an unsatisfactory grade for the course

Component 1

Exam 1 40 points
Exam 2 40 points

Component 2

Anatomy Exams & Quizzes 20 points

Component 3

PBL facilitators will provide narrative evaluation which will contain notations as to whether the student's academic and professional performance is on the level of "honors" (H), "high satisfactory" (HS), "satisfactory" (S), "marginally satisfactory" (MS), and "unsatisfactory" U. This will be based on the student's performance the following areas:

- Use of student's own knowledge base
- Knowledge acquisition/active learning
- Critical thinking/reasoning/problem-solving
- Teamwork/group communication and assessment

When a student obtains a "MS" or "U" on any examination, a letter is sent to the student asking them to contact the course director for assistance. The letter is copied to the student's file.

9. Course grading scale:

The grading scale for the course is as follows:

(H) Honors	= or >93% and (H) in PBL
(HS) High Satisfactory	85% - 92.99% (H) or (S) in PBL
(S) Satisfactory	= or >75% and (S) or (H) in PBL
(MS) Marginal Satisfactory	= or >75% and (MS) in PBL 70%-74.99% and (H), (S) or (MS) in PBL
(U) Unsatisfactory	= or >70% and (U) in PBL <70% and (H), (S), (MS), or (U) in PBL

10. Policy on makeup tests, etc.

Exam Administration: All examinations will be administered in the Biomedical Sciences building on the dates and times documented in the examination schedule. A student must sit for all examinations as scheduled. A student must obtain permission for an excused absence from the course director and notify the Senior Associate Dean for Student Affairs prior to the time for sitting for a scheduled examination. In the event of a personal emergency, the course director and the Senior Associate Dean for Student Affairs must be notified of the absence as soon as possible. Missed examinations will be rescheduled at the discretion of the course director, at a time that does not interfere with other course work. Unexcused absences will result in a grade of zero (0) for the missed examination.

All absences from examinations should be documented by a PIR from the course director and will be communicated to the Office of Student Affairs. A record of excused and unexcused absences from examinations will be maintained by the Office of Student Affairs. A pattern of recurrent absences from examinations, whether excused or unexcused, will be reviewed by the MSPPSC and may result in a recommendation up to and including dismissal from the FAU medical Education Program. (See Student Rights and Responsibilities Handbook)

11. Special course requirements:

Attendance Policy:

The FAU faculty and administration agree that student attendance and participation in all scheduled learning sessions are important to students' academic and professional progress, and ultimate success as physicians.

Attendance at the Monday/Wednesday/Friday small-group sessions and wrap-up is mandatory.

For an absence to be excused, a request must be made to the Course Director. Only a Course Director can excuse an absence. No missed work associated with a specific session can be made up without loss of credit for satisfactory completion unless an excused absence has been granted.

An excused absence from a small-group PBL session will be made up by the assignment of an additional learning issue to the student. An unexcused absence will result in the assignment of an additional learning objective for each absence, and a two point deduction from the PBL small group performance component of the final grade.

Attendance at the Tuesday morning anatomy sessions is expected for all scheduled activities. Students are expected to be on time: in that each session will start with a short written quiz, being on time is defined as being ready to start at the assigned time so as to not be pressured to finish the web-based quiz within its assigned time.

Repeated unexcused absences from required curricular activities may result in disciplinary action, up to and including dismissal from the FAU Medical Education Program.

12. Classroom etiquette policy:

Students should be considerate of each other by switching his/her cell phone to vibrate during all teaching activities.

If a telephone call is of an emergency nature and must be answered during class, the student should excuse him/herself from the lecture hall before conversing.

Laptop computer use should be limited to viewing and recording lecture notes rather than checking e-mail, playing or viewing other distracting websites. Students may be asked by faculty to turn off laptops during any session where group participation is required (such as PBL and wrap-up sessions).

13. Disability policy statement:

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) –in Boca Raton, SU 133 (561-297-3880)—and follow all OSD procedures.

14. Honor code policy:

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility.

The FAU Honor Code requires a faculty member, student, or staff member to notify an instructor when there is reason to believe an academic irregularity is occurring in a course. The instructor must pursue any reasonable allegation, taking action where appropriate. The following constitute academic irregularities:

1. The use of notes, books or assistance from or to other students while taking an examination or working on other assignments, unless specifically authorized by the instructor, are defined as acts of cheating.
2. The presentation of words or ideas from any other source as one's own is an act defined as plagiarism.
3. Other activities that interfere with the educational mission of the University.

For full details of the FAU Honor Code, see University Regulation 4.001 at www.fau.edu/regulations/chapter4/4.001_Honor_Code.pdf.

In addition to the FAU Honor Code, the FAU College of Medicine has adopted specific academic, professional and behavioral standards governing medical student conduct which the FAU COM faculty and administration believe are essential components of

medical education and the development of medical students. The FAU COM academic, professional and behavioral standards are included in the COM Student Handbook

15. Required/suggested texts/readings:

The following are textbooks that students are expected to purchase for use in the. All the textbooks listed below will be available at the FAU Bookstore at the beginning of the academic year.

Title	Author(s)	Publisher
Neuroscience, 4 th Edition	Purves, Augustine, Fitzpatrick, Hall, LaMantia, McNamara, White	Sinauer, 2008
Neuroanatomy through Clinical Cases	Blumenfeld	Sinauer, 2002

Suggested Textbooks

Title	Author(s)	Publisher
Cell Physiology 1 st edition	Landowne	McGraw-Hill
Behavioral Science in Medicine	Fadem	Lippincott, Williams & Wilkins

The following texts from the Fundamentals of Biomedical Science sequence remain of interest:

Title	Author(s)	Publisher
Medical Physiology 1 st Edition	Boron and Boulpaep	Elsevier
The Immune System 3 rd Edition	Parham	Garland Science
Medical Microbiology 5 th Edition	Murray, Rosenthal, Kobayashi & Pfaller	Elsevier
Robbins and Cotran's Pathologic Basis of Disease 8 th Edition	Kumar, Cotran, Robbins	Saunders
Basic and Clinical Pharmacology 10 th Edition	Katzung	McGraw-Hill
Genetics in Medicine 7 th Edition	Thompson and Thompson	Saunders
Biochemistry: Lippincott's	Champe, Harvey and	Lippincott, Williams and

Illustrated Reviews 4th Edition	Ferrier	Wilkins
Langman's Medical Embryology 11 th Edition	Sadler	Lippincott, Williams and Wilkins
Histology: a Text and Atlas 6 th Edition	Ross and Pawlina	Lippincott, Williams and Wilkins
Essential Clinical Anatomy 3 rd Edition	Moore and Agur	Lippincott, Williams and Wilkins
Frank Netter Anatomy Atlas 4 th Edition	Netter	Elsevier

16. Supplementary resources:

Web Resources:

(These resources and others may be accessed via the “*Handouts and links*” of the student e-Dossier on Blackboard)

Integrated Medical Curriculum <http://imc.meded.com/>

The site provides materials related to the gross anatomy component of the FBS sequence. The username and password given to each student at the beginning of the FBS1 course will continue to be valid.

Medline Dictionary, an online dictionary provided by the US National Library of Medicine and the National Institutes of Health is a potentially useful resource during the PBL small group sessions. The website of the National Institute for Neurological Disorders and Stroke (NINDS) at <http://www.ninds.nih.gov/> provides basic information for all major neurological disorders.

Aperio Microscope Images: These virtual microscope images, which can be accessed through the One45 site, via the “Handouts and Links” tab, can be found at: <http://med.fau.edu/aperio>.

The Internet Pathology Laboratory for Medical Education, which can also be accessed through the One45 site via the “Handouts and Links” tab, is a comprehensive learning tool, encompassing the latest edition of the world-famous WebPath© software. Individual PBL-based exercises will utilize this resource. In addition, the application contains useful anatomy, radiology, histology, and microbiology images and tutorials, in addition to thousands of general and systemic pathology images. Students and faculty alike may wish to utilize this resource for learning and teaching purposes. In addition, WebPath contains a section of case-based laboratory exercises and examination questions (with fully-explained answers) that are very helpful resources for learning and review.

The website of the National Institute for Neurological Disorders and Stroke (NINDS) at <http://www.ninds.nih.gov/> provides basic information for all major neurological disorders.

17. Web postings:

Students are encouraged to carry their laptop with them as much as possible in order to access resources, patient log and other resources.

Please refrain from checking personal e-mails during teaching periods. Please put your cell phone or pager on "vibrate" to minimize disruption.

Please be punctual as a courtesy to your colleagues and faculty.

Session handouts	Yes	Session Objectives	Yes	Quizzes	Delivered via laptop
Required Activities	Yes	Grades	Yes	Exams	Delivered via laptop (except practicals)

18. Course topical outline:

Content outline:

Please refer to Blackboard for up-to-date information and session-related objectives and handouts.

Session Topic
Introduction to Neurohistology
Cell Physiology Membrane and Resting Potential
Cell Physiology Passive Propagation
Cell Physiology Action Potential I and II
Cell Physiology Generator Potential
Neurodevelopment
Synaptic Chemistry I and II
Cranium and Face
Brain and Vessels
Gross Anatomy Laboratory 24a
Synaptic Transmission
Ion and Cell-Cell Channels
Gyri and Sulci
3-D Brain
Gross Anatomy Laboratory 24b
Skeletal Muscle
Sensory System Nociception
Sensory System Somatosensory
Cranial Nerves
Clinical Cases

Gross Anatomy Laboratory 25a
Vision-Retina
Anatomy of the Visual System
Pathways
Gross Anatomy Laboratory 25b
Neck
Case Correlation
Gross Anatomy Laboratory 26
Motor System I
Nervous System Reaction to Injury
Plasticity and Growth Factors
Neurodegeneration and Cell Death
Central Pathways of Vision

Orbit
Clinical Cases
Gross Anatomy Laboratory 27
Aphasias
Hydrocephalus and Perinatal Disorders of CNS
Disease of CNS Blood Vessels
CNS Trauma
Brain Rhythms, EEG, Physiology of Sleep, Clinical Sleep
Hypothalamus and Stress
Infratemporal Area and Ear
Case Correlations
Gross Anatomy Laboratory 28
Limbic System and Emotions
Pharmacology of CNS Stimulants
Drugs of Addiction
Normal Development
Motor System 2
Epilepsy
Oral, Nasal and Pharyngeal Cavities
Case Correlations
Gross Anatomy Laboratory 29
CNS and PNS Tumors
Autism
Physiology of Hearing and Vestibular
Clinical Hearing
Metabolic Disorders
Psycho-Pharmacology I
Psychotic Disorders I
Larynx
Case Correlations
Psychotic Disorders II
Anxiety Disorders
Psycho-Pharmacology II
Personality Disorders and Eating Disorders
Pharmacology of General Anesthetics
Pharmacology of Local Anesthetics
Coma
Small Cases I and II
CNS Infections I
CNS Infections II

19. Study habits:

A major contribution to your learning is active engagement, which includes participation in the learning of other students and interaction with the instructors. Students are expected to be proactive and to access the Blackboard system to review items associated to individual sessions.

Learning in the field of medicine is a life-long endeavor that is not only necessary, but can and should be fun. One of the most important factors for learning is curiosity and sometimes, the best way to keep this curiosity stimulated is through our interaction with colleagues and peers. When learning in small groups, we have a chance to try to explain topics to each other, brainstorm solutions together, give each other constructive feedback, and support and validate each other. We encourage balancing studying alone with learning in small groups. It is important to develop a study routine to avoid “putting things off” and “cramming” and to minimize the stress we may add to our lives in that way.

20. Independent study time:

Independent Study Time allocated within the day time schedule is provided for students, on average about 9 hours per week.

Students are expected to use this time to further their learning. The time should be used for independent study or with peers. It is an opportunity to seek out faculty to interact with them outside the formal teaching setting. Since the PBL small-group format requires that students research learning objectives, the time may be used to prepare for the subsequent sessions. Finally, the time may be used to work on assignments, problem-solving cases, off-campus visits or other tasks that are required by the courses.

Occasionally, some Independent Study Time sessions may be used for curriculum-related activities (e.g. standardized examinations): notice will be given as early as possible for these occasions.

21. Course and faculty evaluation:

FAU highly values the process of formal program evaluation and feedback. FAU students are required to complete all course evaluations and program evaluation surveys which are the Students Perception of Teaching (SPOT).

Grades and transcripts may be held for failure to submit required surveys. Evaluations should be constructive, to help improve individual faculty's teaching, and the content and format of the courses.

Moreover, the timely completion of evaluations at the level of undergraduate medical education assists students in developing the administrative and organizational skills required throughout their academic and professional career. We appreciate your completing evaluations to help continue with improvement of the learning experiences and environment for all students.

22. Faculty: Lecturers (in alphabetical order):

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