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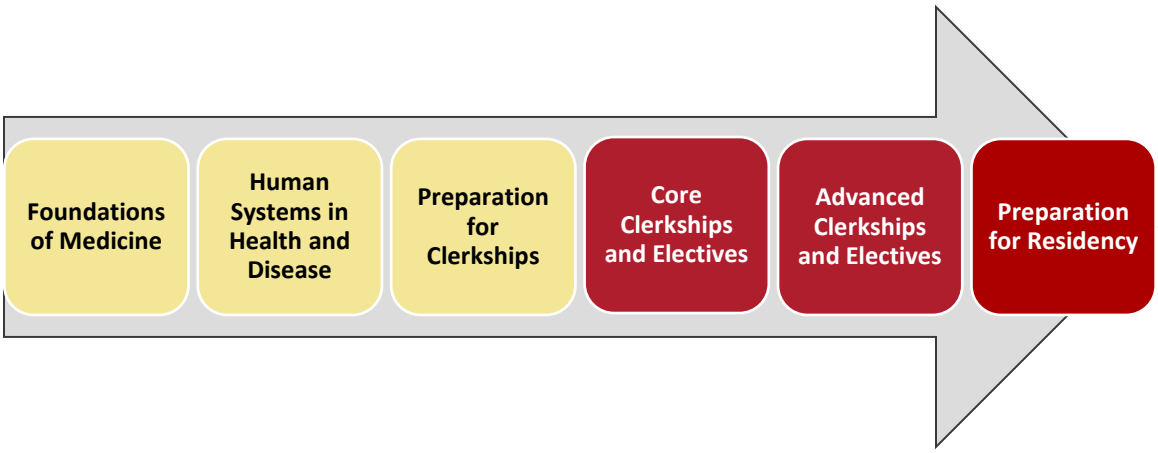

Human Systems in Health and Disease
BMS 6046C
Neuroscience: CNS and Behavior

Florida State University
College of Medicine

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Overview

Course Goals

In Neuroscience: CNS and Behavior students acquire a fundamental knowledge of the structure and function of the human central nervous system and behavior in the context of caring for patients. Through active exploration of case-driven problems, students discover how the foundational sciences (neuroscience, behavioral science, and the traditional domains of pharmacology, pathology, and microbiology) explain the signs and symptoms of common neurological and psychiatric problems, the processes of development, learning and memory, and the complexities of human behavior. In a similar way, they learn to perform, assess and report the results of the basic neurological exam through an "evidence-based" approach. Attention is given to integrating concepts and knowledge from all disciplines and domains of the biopsychosocial approach. Students will have the opportunity to study the human brain in 3 dimensions in brain dissection lab sessions. COM mission-based domains are underscored in specific objectives that address important issues in geriatric, rural, minority, and other underserved populations, such as distinguishing between delirium and dementia in elderly patients, increased risks of polypharmacy in geriatrics, and disparities in diagnosis, treatment options, and outcomes. Curricular themes such as cultural issues, ethics, and public health are developed as essential components in clinical encounters with standardized patients and in literature and case studies, for example, cultural attitudes to mental disorders and disparities in neurologic and mental health care based on race and socioeconomic status. Students who complete the Neuroscience block will not only understand the anatomy and physiology of the central nervous system in health and disease but will also have a strong appreciation of how the brain determines *what we do, why we do it*, and *who we are*. Mastery of these concepts will enable students to localize pathology in the central nervous system based on observed signs, to predict the neurological deficits associated with pathology, to predict the consequences of non-biological factors on the structure and function of the nervous system, and evaluate the results of clinical trials. Our goal is to help our learners acquire a mastery of neuroscience concepts that will allow them to perform as exemplary clinicians in any area of practice, long after the course has been completed.

Learning Objectives

Detailed learning objectives are provided for each session in the course.

The global course objectives are:

1. Describe the normal structure and function of the brain and spinal cord in the context of how these structure/function relationships result in observable behaviors across the lifespan.
2. Predict the location, etiology and disease course of pathologies in the CNS based on clinical signs and symptoms.
3. Anticipate the mechanisms, deficits, and consequences expected to result from injury, disease, central effects of medical and other drugs, and environmental and social conditions that impact the nervous system, and identify opportunities for treatment, mitigation and prevention.
4. Discuss the biological and non-biological factors that contribute to mental illness and mental health across the lifespan, including neurodevelopmental disorders, mood disorders, psychotic disorders, substance abuse and addiction, the disparities in occurrence, recognition and treatment of these disorders, and their impact on individuals, families, society and the health care system.
5. Demonstrate the ability to perform, interpret, and report the results of the neurological exam, identify and interpret the results of appropriate diagnostic testing, and select and provide rationales for treatment and management options, including the mechanisms of pharmacological and non-pharmacological therapies.
6. Demonstrate the habits of life-long learning – the identification of knowledge gaps and application of strategies to find and interpret information to address those gaps.
7. Demonstrate professional behavior in interactions with peers, with guest patients, and with faculty.

Course Format

Neuroscience: CNS and Behavior is organized and structured based on our understanding of how the brain learns best, applying paradigms demonstrated to result in better, more efficient learning, and increased retention:

- *Active learning* is essential because – despite what you may think – you learn best from effortful retrieval of information and from your mistakes.
- *Collaborative (group) learning* is essential because that's where you make or recognize your mistakes (and gaps) and receive real time correction in a context that supports retention

- *Spaced learning* is essential because the brain actively forgets things, and synaptic networks tire. Again – despite what you think – you will learn and retain something better by studying it for 10 minutes on 3 separate days instead of 30 minutes at one time.
- *Ownership and accountability* – are pretty self-explanatory.

The course emphasizes engaged and active learning through a variety of individual, interactive large group, and case-based small group learning activities as well as standardized patient encounters in the Clinical Learning Center and a Preceptorship experience in the office of a primary care physician in the community. The purpose of the preceptorship is to provide the student with the opportunity to practice history taking, physical examination skills, clinical reasoning skills, documentation skills and to observe patient care being delivered in a community-based setting. Students will be scheduled to spend a minimum of 3 hours with the preceptor every other week. Weekly formative on-line assessment materials include significant experience with NBME/USMLE-type questions. Students are expected to self-assess their learning needs and set goals to address them with the aid of faculty and their learning groups. The emphasis is on developing integrated basic and behavioral science concepts in a clinical context.

Large Group Sessions

Formal lectures are limited in favor of interactive large group sessions. This learner-centered model uses the principles of active learning, where students consolidate their understanding and identify gaps in understanding as a session evolves, by answering questions and solving problems individually and through peer discussion, with immediate input of faculty expertise. Pre-class preparation recommendations prime students for learning with basic didactic material presented through a variety of materials including interactive modules, self-assessment exercises, video and PowerPoint presentations, textbook and journal readings, and structured vertical reading exercises. Advanced preparation and trust in the safe environment we maintain to encourage students to be curious and even to take intellectual risks allows students to be active participants in large group sessions. Clinical Skills activities each week include a 50 minute lecture or large group session before the Clinical Reasoning small group session. Each Friday is comprised of Capstone sessions that apply and extend content from the week. The *Neuroanatomy Breakfast Club* will review the neuroanatomy underlying the topics of the week, including imaging, case analysis, and practice questions. One or more relevant journal articles will be analyzed in a session on critical reading of the literature and evidence-based medicine. Whenever possible, real patients will be present on Fridays to share their stories and demonstrate signs of their disease, following a lecture that provides additional content related to the neurological condition. Whenever patients are present, we ask that students wear their white coats and close their computers and other mobile devices as demonstration of respect for these wonderful patients who are willing to help us learn.

Collaborative Learning (Small Group) Sessions (attendance required)

Small group exercises are case- and/or problem-oriented. Some sessions pattern thinking through progressive disclosure, others focus on concept development through guided engagement with data, while others employ the Jigsaw paradigm to focus on discovering similarities and differences of presentations or aspects of disease – the basis of differential diagnosis. Small group exercises are designed for engaged and active learning and emphasize reasoning, hypothesis formation, and hypothesis testing. The groups evaluate cases in terms of stated objectives and define additional learning objectives they will need to resolve. For Jigsaw exercises each small group (5-6) of students will master one topic, subtopic, or case and teach that information to others in re-mixed groups. In all small group exercises, all members of the group share responsibility for analyzing and explaining the clinical presentations. The value of small group exercises is not always the "answer," but the reasoning behind it. Basic and clinical science faculty will be present to ask helpful questions if your group is "stuck" and to encourage curiosity. During small group exercises, students are free to use any resources (unless otherwise instructed), including high yield point of care informatics resources. Summarizing and paraphrasing in your own words is a powerful learning tool, and students are encouraged to summarize the small group learning, and submit the "muddiest points" to faculty for clarification. A post-small group session will provide "take home points" from the small group. Morning small groups will be comprised of 6-7 students, with 1-2 faculty available in each LC.. Clinical reasoning (afternoon) small groups will be comprised of 10 students working with the same clinical faculty throughout the course.

Brain dissection laboratory

Whole and half brains and prepared slabs in 3 planes of section will be available for study. The purpose of the lab is to help students develop a 3-dimensional appreciation of the central nervous system and of the "neighbor" relations between structures that are needed to facilitate clinical problem solving. Links to excellent videos from outside sources are provided as a supplement to learn the material outside of lab.

PICO Assignment

PICO is a format physicians can use for converting clinical scenarios to researchable and answerable questions to provide evidence-based care of patients. This format can be used to answer questions about treatment, diagnosis, risk factors, etiology, statistics and phenomena.

- P = Patient, Population and/or Problem
- I = Intervention, treatment, Prognostic factor, and/or Exposure (Which specific are you considering?)
- C = Comparison and/or Control (What is the main alternative to the above?)
- O = Outcome (What are you trying to accomplish, improve, or effect?)

During the Gastrointestinal System block each student will develop a clinically relevant question, framed using the PICO format. Students will independently research the answer to their question, evaluate, and report the results of their search. The completed assignment is to be submitted *via* Canvas no later than 5:00 pm, Friday, October 12th. Supporting materials and suggestions about PICO questions and EBM resources for answering these questions are available with the assignment on Canvas.

Preceptorship (attendance required)

Approximately every other week each student will spend a half day in the office of a community physician assigned as their Preceptor. These sessions and documentation of patient encounters in e*Value no later than midnight of the day of each preceptor visit are required.

Interprofessional learning activity (Required)
On Friday, October 6th, all students will participate in an interprofessional simulation activity, working with students from nursing and social work. These activities will be scheduled from 10 AM to 7 PM, and students are advised to keep this day free until the special schedule is published.

Clinical Learning Sessions (CLC) (attendance required)

Throughout the block learners will continue to develop their clinical skills and clinical reasoning during individual SP encounters in the CLC. These encounters will not be restricted to the neurological exam or problems associated with the nervous system. They will often include reviews of organ systems studied previously, demonstrations of how the central nervous system intersects with other systems, and how behavior both impacts and is impacted by medical conditions.

Professionalism

Medicine is a Profession, which means it entails unique responsibilities and obligations as well as unique privileges. "Professional identity formation" is an objective as important as learning the sounds and anatomy of the heart, but requires a different set of learning skills. Important among those are reflection, self- and peer assessment, deliberate practice, and learning for mastery (not grades).

Two essential Professional behaviors that will become a part of your everyday life are founded on respect for patients:

Confidentiality: Patients — including Standardized Patients — deserve to be treated with respect. Respect for patients includes keeping all patient information confidential. Patient information may be shared with other health care professionals that have a legitimate, professional "need to know," or with specific family members, friends, or others that have permission from the patient for access to the information.

Be especially conscious about discussions of patients in public places. Even when patient names are not used, the discussion may reveal the patient's identity to others who overhear the discussion. Rather than risk a violation of patient confidentiality, discuss patients only in a private setting and only with individuals who have a legitimate need to know.

Be careful to keep all patient notes, reports and materials confidential. Patient records, should be returned to faculty, destroyed, or kept in a secure place.

Similarly, your classmates deserve to be treated with respect. Information learned about your classmates and their families while in class is considered confidential. You are not free to disclose this material to others without the specific consent of the person.

Violation of confidentiality may result in a Report of Concern for Unprofessional Behavior and may be referred to the Student Evaluation and Promotion Committee (SEPC). Egregious unprofessional behavior of any variety may result in suspension of the student, a failing grade for the course, and/or referral to SEPC.

Professional Attire: Medical students, faculty and staff are all ambassadors and representatives of the College of Medicine and of the medical profession. Appearance and behavior should at all times demonstrate respect for the profession and for our patients. The needs of patients must always come first, and any barriers to meeting those needs (including attire, appearance and grooming) must be removed.

Professional attire should be worn in settings where students interact with people from outside the COM, and particularly when interacting with Standardized Patients (SPs) in the CLC, on a "house visit," or when in a preceptor's office or clinic, a hospital or nursing facility. Professional attire should also be worn when patients, guests, or visitors are present in large or small group sessions.

Specific standards for professional attire for men and for women are detailed at the end of this document and can always be found on the course Canvas site (the University Learning Management System).

Course Objectives and Educational Program Objectives

	Education Program Objectives	Course Objectives	Means of Assessment
1	**PATIENT CARE: Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health**		
1.2	Gather essential and accurate information about patients and their condition through history-taking, physical examination, and the use of laboratory data, imaging and other tests	Perform, interpret and report the results of a neurological screening exam.	Observation by faculty, preceptor, staff, and standardized patients
1.4	Interpret laboratory data, imaging studies, and other tests required for the area of practice	Predict the functional consequence(s) of lesions and diseases affecting the nervous system based on identification of pathology in images or other laboratory tests	Quizzes and Exams, Faculty observation in small group activities
1.5	Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment	Apply behavioral, psychological, social and developmental concepts in the description and analysis of patient behaviors and in patient care.	Observation by faculty, preceptor, staff, and standardized patients
2	**KNOWLEDGE FOR PRACTICE: Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care**		
2.1	Demonstrate an investigatory and analytic approach to clinical situations	Predict the functional consequence(s) of lesions and diseases affecting the nervous system based on identification of pathology in images or other laboratory tests	Quizzes and Exams, Faculty observation in large group and small group activities
2.2	Apply established and emerging bio-physical scientific principles fundamental to health care for patients and populations	Anticipate and recognize the central effects of drugs in motor, sensory and cognitive domains Explain the underlying neuroscience principles of evaluative tests of nervous system function. Explain the signs and symptoms of common neurological problems based on underlying neuroscience concepts and details. Predict the functional consequence(s) of lesions and diseases affecting the nervous system based on identification of pathology in images or other laboratory tests Predict the potential consequences of environmental and social factors on the structures and function of the nervous system and on behavior. Explain the changes in the nervous system associated with normal and pathological development across the lifespan. Describe the mechanisms of drugs used in the treatment of pain (e.g. opioids), headache, neurodegenerative disorders, disorders of mood, psychotic disorders, substance abuse disorders, seizure disorders, and disorders of sleep.	Quizzes and Exams, Faculty observation in large group and small group activities
2.3	Apply established and emerging principles of clinical sciences to diagnostic and therapeutic decision-making, clinical	Distinguish delirium from dementia.	Quizzes, Exams, Faculty observation in

	problem-solving, and other aspects of evidence-based health care	Hypothesize the location of lesions in the nervous system or disease mechanism based on clinical signs and symptomsc Explain the changes in the nervous system associated with normal and pathological development across the lifespan. Describe the clinical effects of drugs used in the treatment of pain (e.g. opioids), headache, neurodegenerative disorders, disorders of mood, psychotic disorders, substance abuse disorders, seizure disorders, and disorders of sleep. Identify psychopathological diagnosis in children, adolescents, young adults, and adults according to DSM V and describe appropriate treatment modalities.	large group and small group activities
2.4	Apply principles of epidemiological sciences to the identification of health problems, risk factors, treatment strategies, resources, and disease prevention/health promotion efforts for patients and populations	Interpret and evaluate the literature on disease mechanisms and emerging therapeutic strategies based on principles of biostatistics, study design, and evidence based medicine.	Quizzes, Exams, Faculty observation in large group and small group activities; Journal Club
2.5	Apply principles of social-behavioral sciences to provision of patient care, including assessment of the impact of psychosocial-cultural influences on health, disease, care-seeking, care-compliance, barriers to and attitudes toward care	Predict the potential consequences of environmental and social factors on the structures and function of the nervous system and on behavior. Apply behavioral, psychological, social and developmental concepts in the description and analysis of patient behaviors and in patient care. Discuss community/societal challenges to psychological health. Discuss the neuroscience concepts underlying the methods of motivational interviewing.	Quizzes, Exams, Faculty observation in large group and small group activities
3	**PRACTICE-BASED LEARNING AND IMPROVEMENT: Demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning**		
3.1	Identify strengths, deficiencies, and limits in one's knowledge and expertise	Demonstrate the habits of life-long learning – the identification of personal knowledge gaps and application of strategies to find and interpret information to address those gaps.	Faculty observation in large group and small group activities
3.3	Identify and perform learning activities that address one's gaps in knowledge, skills or attitudes	Apply the principles and methods of Evidence-Based Medicine to acquire, appraise, and assimilate new clinical information to improve patient care.	PICO assignment
3.6	Locate, appraise, and assimilate evidence from scientific studies related to patients' health problems	Interpret and evaluate the literature on disease mechanisms and emerging therapeutic strategies based on principles of biostatistics, study design, and evidence based medicine. Demonstrate the application of strategies to find and interpret information to address knowledge gaps.	Small group exercises; PICO assignment
3.9	Use information technology to obtain and utilize information about individual patients, populations of patients being served or communities from which patients are drawn to improve care	Apply the principles and methods of Evidence-Based Medicine to acquire, appraise, and assimilate new clinical information to improve patient care.	Small group exercises; PICO assignment
4	**Interpersonal and Communication Skills: Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals**		

4.1	Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds	Use accurate and appropriate vocabulary and concepts to communicate effectively with patients about neurological and psychiatric disease. Demonstrate the ability to communicate effectively with a patient and his/her family using culturally appropriate verbal and non-verbal skills to build trust and rapport between the student and patient.	Observation by faculty, preceptor, staff, and standardized patients
4.2	Communicate effectively with colleagues within one's profession or specialty, other health professionals, and health related agencies	Use accurate and appropriate vocabulary and concepts to communicate effectively with peers and faculty about neurological and psychiatric disease.	Observation by faculty, preceptor, staff, and standardized patients
4.6	Demonstrate sensitivity, honesty, and compassion in difficult conversations about issues such as death, end-of-life issues, adverse events, bad news, disclosure of errors, and other sensitive topics	Communicate diagnostic information and reasoning, intervention options, and a suggested plan of care with truthfulness, sensitivity and empathy	Observation by faculty, preceptor, staff, and standardized patients
4.7	Demonstrate insight and understanding about emotions and human responses to emotions that allow one to develop and manage interpersonal interactions	Discuss the neuroscience concepts underlying the methods of motivational interviewing. Demonstrate the ability to communicate effectively with a patient and his/her family using culturally appropriate verbal and non-verbal skills to build trust and rapport between the student and patient.	Observation by faculty, preceptor, staff, and standardized patients
5	**PROFESSIONALISM: Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles**		
5.1	Demonstrate compassion, integrity, and respect for others	Demonstrate patient-centered and respectful behaviors to patients who participate in the course Demonstrate respect, empathy, compassion, responsiveness and concern regardless of the patient's problems, personal characteristics.	Faculty observation in SP encounters, Preceptor evaluation, Capstone sessions, and small group work
5.4	Demonstrate accountability to patients, society and the profession	Complete all required activities in a timely fashion.	Attendance and assignment tracking
5.5	Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation	Demonstrate respect, empathy, compassion, responsiveness and concern regardless of the patient's problems, personal characteristics.	Observation by faculty, preceptor, staff, and standardized patients
5.6	Demonstrate a commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including compliance with relevant laws, policies, and regulations	Demonstrate patient-centered and respectful behaviors to patients who participate in the course Maintain confidentiality for patients who participate in the course. Demonstrate professional behavior in all interactions with peers, patients, and faculty.	Observation by faculty, preceptor, staff, and standardized patients
7	**INTERPROFESSIONAL COLLABORATION**		
7.1	Work in cooperation with other professionals to establish and maintain a climate of respect, dignity, diversity, ethical integrity, and trust in order to enhance team functioning and serve the needs of patients, families, and populations	Work in cooperation with other professionals to establish and maintain a climate of respect, dignity, diversity, ethical integrity, and trust	Faculty and peer evaluation during Interprofessional immersion experience
7.2	Utilize and enhance one's own expertise by understanding and engaging the unique and diverse knowledge, skills, and abilities of other professionals to enhance team performance and maximize the quality of patient care	Discuss transformative trends that have led to a paradigm shift in interprofessional education and collaborative practice Differentiate between the professional preparation of physicians, nurses, pharmacists, and social workers	Interprofessional modules

9	FSU COM MISSION: Demonstrate responsiveness to community needs – especially elder, rural, minority and underserved populations		
9.1	Describe the social determinants of health, and identify how they create opportunities for and barriers to wellness for underserved populations.	Discuss community/societal challenges to psychological health.	Quizzes and exams; Faculty observation, small groups

Content

The course purposefully integrates and further develops content introduced throughout the Year 1 curriculum, including major topics from *Foundations of Medicine 1: Organization and Structure*, *Foundations of Medicine 2: Molecules to Mechanisms*, *Host-Defense*, *ANS, Endocrine and Reproductive Systems*, and *Cardiovascular and Pulmonary Systems* while retaining a focus on the central nervous system (CNS) and human behavior. Content clusters in several domains:

What makes the nervous system

- Neurons, glia and neural networks
- Basic neuroanatomy & development
- Injury and repair
- Clinical impact and manifestations of the above

What we do

- Motor systems and central regulation
- Sensory systems and the conversion of sensation to action/behavior
- Basic and higher cognitive function
- Clinical impact and manifestations of the above

Why we do it

- Learning and memory
- Emotion and drive
- Homeostasis
- Consciousness
- Clinical impact and manifestations of the above

Who we are

- Higher cognitive function
- Neurodegenerative disease and dementia, delirium
- Executive function
- Personality and social cognition
- Mood, psychosis, and psychopathology
- Clinical impact and manifestations of the above

Throughout the block, continued development of clinical reasoning and clinical skills focuses on advanced history taking, advanced physical exam maneuvers, and the interpretation of common diagnostic tests relevant to these systems. Standardized patient interactions continue with emphasis on clinical reasoning skills using problem oriented and chronic disease encounters that are not limited to block-specific content.

*Required Materials (All required texts are available as ebooks through COM library with exceptions as noted *)*

Basic and Clinical Pharmacology (Katzung)
Bates Guide to Physical Examination and History Taking
Behavioral Science in Medicine (Fadem)
Clinical Neuroanatomy (Waxman)
Diagnostic and Statistical Manual of Mental Disorders: DSM-5
Disorders of the Nervous System: A Primer (Reeves and Swenson – *Dartmouth website)
Histology: A Text and Atlas With Correlated Cell and Molecular Biology (Ross)

Neuroanatomy, An Atlas of Structures, Sections and Systems (Haines)
Neuroanatomy Through Clinical Cases (Blumenfeld, either edition 1 or 2; not available as an institutional ebook).
Review of Clinical and Functional Neuroscience (Swenson – *Dartmouth website)
Robbins and Cotran Pathologic Basis of Disease (Kumar)
Sherris Medical Microbiology (Ryan)
Smith's Patient-Centered Interviewing: An Evidence-Based Method (Fortin)
Understanding Health Policy: A Clinical Approach (Bodenheimer)

Additional required readings will be assigned from a variety of sources and will be provided through links on Canvas.

1. Other materials required for clinical sessions
   a. Clinical examination equipment: Each student must purchase and/or have available the following clinical examination equipment: stethoscope with diaphragm, bell and pediatric option, oto/ophthalmoscope, #128 and #512 tuning forks, penlight, reflex hammer, Rosenbaum eye chart and a sphygmomanometer with pediatric, adult, and large adult sized cuffs. Opportunities to purchase this equipment at a discount will be provided prior to orientation. Bring your examination equipment with you to each CLC session.
   b. Also bring the following to each session in the CLC:
      - A watch capable of measuring seconds
      - A pen for writing (blue or black ink)
      - The student's personal mobile device loaded with the appropriate medical software/applications.

2. Other materials for optional dissection laboratory sessions
   a. Lab coat or scrubs
   b. Dissection gloves (provided)
   c. Eye protection – this can be glasses or safety glasses (required)

Grading System

Description of Student Assessment Methods and Grading

Examinations

There will be a mid-block assessment and a final assessment. The midblock assessment contributes 40% and the final assessment 60% to the final average. A portion of each assessment will be comprised of questions from the NBME (National Board of Medical Examiners) question bank. The questions on this customized NBME exam will be selected by course faculty as appropriate assessment of course objectives. Formative quizzes and/or other assessment exercises will be required throughout the block.

Written exams

Multiple choice and other question formats are used to assess both content knowledge and application skill (ability to solve problems, demonstration of clinical reasoning, interpretation of images and laboratory results, etc.) on written exams. Exam questions may be drawn from material presented in any activity or assignment, from assigned readings, and from CLC session, in addition to questions from the NBME question bank. Exams are cumulative across the curriculum, i.e., main concepts, content and skills from material presented in prior courses may be included in questions. Written questions may also be presented in context with standardized patient encounters during the examination.

Students must score a cumulative average of ≥70% on all written exams to pass the written examination component of the course. Students with a written exam average below 70% risk failing Neuroscience: CNS and Behavior, and being referred to the Student Evaluation and Promotions Committee.

Clinical skills exams / Objective Structured Clinical Examination (OSCE)

Formative and summative assessment of clinical skills occurs periodically throughout the preclerkship phase. OSCEs are skills-based examinations conducted in the CLC to assess the student's ability to demonstrate clinical skills and behaviors. OSCEs typically consist of several "stations." Each station will require the student to demonstrate one or more clinical skills/behaviors that will be assessed by a trained observer using established performance criteria for that assessment. A formative OSCE will occur at the beginning of Neuroscience: CNS and Behavior. This FOSCE will provide students with feedback on their ability to perform both a problem oriented patient encounter and a chronic illness patient encounter.

The grading criteria for the FOSCE will be the same as for a summative OCSE, however the score will not impact the final pass/fail grade for Neuroscience: CNS and Behavior. The passing score for an OSCE is ≥80%. Students who do not achieve a score of 80% or higher on the formative OSCE must develop a plan to remediate these clinical skills. The FOSCE remediation plan must be determined during the first week of the block.

Quizzes

Throughout the course there will be weekly Firecracker quizzes and faculty-written on-line quizzes. These formative tools are "assessments for learning" that allow students to self-assess mastery of the material and learning needs. **Firecracker quizzes are required and must be completed each weekend prior to 8 AM the following Monday**. You will receive an email reminder and link to the quiz directly from Firecracker. All quizzes are mandatory and must be completed without collaboration or consulting resources (e.g., textbooks, peers, notes, websites, etc.). Although they are formative, quizzes should be taken seriously; **a quiz average ≥70% will contribute 2 points to the course exam average**. Any quiz not completed within the designated time will receive a score of 0. Quizzes are important opportunities for students to practice the self-assessment and responsibility for their own learning that are part of Professionalism and Practice Based Learning and Improvement. The results of the quizzes will be tracked as a measure of your progress and to help faculty connect students with resources that will help them succeed in the curriculum.

Additional formative assessments may include:

- Pre-class preparation / readiness quizzes
- Post-small group quizzes
- *Optional post lab quizzes*
- End of course practice cumulative test, provided through Firecracker

Grading

The FSU COM has adopted a pass/fail grading system which is used in the curriculum for the first and second years (See Student Handbook). To achieve a grade of Pass in BMS 6046C (**Neuroscience: CNS and Behavior**) a student must meet all of the following requirements:

1. A final average ≥ 70% on all examination questions. The mid-block assessment contributes 40% and the final assessment 60% to the final average. A quiz average ≥70% will contribute 2 points to the written exam score. If the course average is <70%, the final course grade will be
   - Fail when both of 2 written exams are <70%
   - IR when one of the written exams is <70% and one is ≥70%

   A grade of Fail or IR will require remediation or repetition of the course, as proposed by the course directors and determined by decision of the Student Evaluation and Promotion Committee.
2. A student whose performance is <70% (below passing) on any individual exam during the course is required to
   a. Attend the exam review,
   b. Contact the block directors within 24 hours of that exam review, and
   c. Meet with the block directors.
3. Timely completion of all quizzes. Any quiz not completed within the designated time will receive a score of 0. A quiz average ≥70% will contribute 2 points to the course exam average.
4. A student who achieves an overall passing score (≥ 70%) but has demonstrated a significant deficit in one or more content areas will be required to develop and complete a Performance Improvement Plan in consultation with the block directors. The purpose of the Plan is to assure the student has the requisite knowledge base to succeed in subsequent courses in the curriculum.
5. Attendance and satisfactory participation in all required sessions, all activities scheduled in the CLC, and other activities as determined by the block directors and clinical skills director. Unexcused absence from an activity for which attendance is required may require remediation as determined by the block directors. Multiple unexcused absences from required activities will be considered a Professionalism concern and may result in a Report of Concern for Unprofessional Behavior and referral of the student to the Student Evaluation and Promotions Committee.
6. Demonstration of the attitudes and behaviors of Medical Professionalism in all aspects of the course, including adherence to the Honor Code when taking unproctored, on-line quizzes. Professionalism concerns may generate a Report of Concern for Unprofessional Behavior (see Student Handbook) and may result in receiving a grade of fail in the course.
7. Satisfactory completion of all assignments, including Preceptorship, as determined by the block directors.

Preclerkship course grading policy

In a course with 2 written exams:

- Failure (< 70%) of 2 written exams = **Fail**

- Course written exam score < 70%, including 1 exam failure (< 70%) = IR

In a course with only 1 written exam:

- Course written exam score < 70% = IR

In courses that include an OSCE:

- OSCE score < 80%, if the course written exam score is Pass OR IR (see above) = IR

In courses that include Preceptorship (M1 Spring, M2 Fall)

- Unsatisfactory performance in Preceptorship, if the course written exam score is Pass OR IR = IR

Unsatisfactory Professionalism, if the course written exam score is Pass OR IR = IR or Fail depending on the nature of the Professionalism concern, as determined by the Student Evaluation and Promotions Committee (SEPC).

In any course in which the student's performance merits a grade of IR in 2 or more of the above categories (written exam score, OSCE, Preceptorship, Professionalism), the student will be referred to the SEPC, and a grade of Fail may be awarded, as determined by the SEPC.

Pre-clerkship course remediation policy:

A student who has completed all the assessments and activities of a course and has not achieved a passing score (see above), will be required to repeat the entire content of the course and demonstrate competence through an assessment which is consistent with the original course. Remediation activities, including final testing, may involve other students.

Remediation should be comprised of a specific plan for learning and assessment such as the following:

- Review of course content available on Canvas
- Review of content through modified Firecracker tree identifying topics to be covered each week
- Completion of Firecracker weekly quizzes and practice test
- When a specific deficit is identified (e.g., pharmacology), completion of assignments determined by relevant content experts (e.g., paraphrasing, problem sets, case application, etc.)
- Weekly meetings with course directors and other faculty content experts as determined by the course directors to verify active engagement with content that is resulting in improved learning.
- A passing score (> 70%) on a customized NBME exam (questions selected by the course directors and with a difficulty approximately equivalent to final exam average of the course) and additional faculty-written questions, if determined to be necessary by the course directors.

A student who scores <70% on the final assessment or does not adequately engage in the remediation process (as monitored by the course directors) will receive a grade of Fail for the course.

Course Evaluation

Students will have the opportunity to provide constructive feedback through an "On the Fly" survey throughout the semester as well as through a post-course evaluation through e*Value. Feedback is encouraged and welcomed at all times on all components of the course and will assist the block directors in providing timely,continuous quality improvement.

Policies

Americans with Disabilities Act

Candidates for the M.D. degree must be able to fully and promptly perform the essential functions in each of the following categories: Observation, Communication, Motor, Intellectual, and Behavioral/Social. However, it is recognized that degrees of ability vary widely between individuals. Individuals are encouraged to discuss their disabilities with the College of Medicine's Director of Student Counseling Services and the FSU Student Disability Resource Center to determine whether they might be eligible to receive accommodations needed in order to train and function effectively as a physician. The Florida State University College of Medicine is committed to enabling its students by any reasonable means or accommodations to complete the course of study leading to the medical degree.

The Office of Student Counseling Services
Medical Science Research Building, 2301
Phone: (850) 645-8256Fax: (850) 645-9452

Students with disabilities needing academic accommodation should:
(1) register with and provide documentation to the Student Disability Resource Center; and
(2) bring a letter to the instructor indicating the need for accommodation and what type.

Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Student Disability Resource Center has been provided.

This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center
874 Traditions Way
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167
Voice: (850) 644-9566
TDD: (850) 644-8504
sdrc@admin.fsu.edu

Academic Honor Code

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "...be honest and truthful and...[to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at http://fda.fsu.edu/Academics/Academic-Honor-Policy)

Attendance Policy

University Attendance Policy:
Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

The College of Medicine has detailed attendance policies as they relate to each cohort and events that conflict with course schedules. See FSUCOM Student Handbook for details of attendance policy, notice of absences and remediation.

Unexcused absence from a scheduled examination or quiz may result in a score of zero (0 %) being assigned for that assessment. Unexcused absence from an activity for which attendance is required (for example, Small Group session) may be considered as an issue of Professionalism. Any unexcused absence may require completion of the Performance Improvement Plan (see Grading section, above).

Clinical Learning Center (CLC) Specific Absence Policy

CLC scheduled activities

Students with a legitimate reason to miss a scheduled session in the CLC must request an approved absence through Student Affairs through the online link. Students with approved absences will be allowed to reschedule or participate in a make-up session. **Unapproved absences may not be rescheduled or made up**. Repeated unapproved absences may result in a failing grade for the course and a **Report of Concern for Unprofessional Behavior**.

If you know you will be absent from a scheduled CLC session, please complete the absence approval request at least two weeks in advance. For absences that are approved at least two weeks in advance, a change in CLC schedule assignment will be arranged.

One method for addressing a planned and approved absence is to identify a classmate willing to exchange scheduled sessions with you. In this situation, both students (the student with the approved absence and the willing classmate) should send a request via email to Ms. Danforth at least two weeks in advance. Students will be notified re: approval of these requests. Please note: Sending a request is NOT equivalent to receiving approval.

Unplanned but excusable absences from CLC sessions are absences due to circumstances *beyond the student's control*. Examples include student illness and/or family death. When such a situation occurs, please contact Ms. Danforth **as soon as possible**, to inform her that you will not be present. Then, submit an absence request to Student Affairs through the online link. Student Affairs will classify the absence as excused or unexcused.

If the absence qualifies as an "excused" absence, the student must contact Ms. Danforth to develop a plan to make up the missed session. These sessions may require the presence of an SP and / or CLC faculty member. Any excused absence will not impact the student's grade.

Unexcused absences generally involve circumstances *within the student's control*. Examples of unexcused absences include the student who forgets about a scheduled CLC session, the student who skips the session to study, and/or any absence where an able student fails to contact Student Affairs and Ms. Danforth to inform them that the student will not be present for the session.

If the absence is unexcused, the clinical skills director will discuss the situation with the student. Any further unexcused absences will result in the notification of Student Affairs, a **Report of Concern for Unprofessional Behavior**, and referral of the student to the Student Evaluation and Promotions Committee. Students with unexcused absence(s) will still be responsible for the missed material in future OSCE's and written examinations.

Objective Structured Clinical Examination (OSCE)

If a student knows he/she will not be able to participate in the formative OSCE, he/she should complete and submit the appropriate forms to Student Affairs, and, if within 24 hours of the time he/she is scheduled for the OSCE, contact Ms. Danforth. If the absence is excused by Student Affairs, the student will receive an "I" (incomplete) grade and be required to complete a make-up OSCE at a designated time after the course has ended.

Any excused absence—whether planned or unplanned—will not impact the student's grade.

Any absence that does not qualify as an excused absence per Student Affairs is an unexcused absence. These generally are due to circumstances within the student's control. Examples of unexcused absences include the student who forgets about an OSCE session, the student who skips an OSCE to study for an exam and/or any absence where an able student fails to follow the procedures above if they are not able to participate in the OSCE. An unexcused absence from the formative OSCE will result in a **Report of Concern for Unprofessional Behavior**.

Preceptorship

Planned preceptorship absences require students to complete the proper forms and obtain the required permissions prior to the absence. **In addition to the request through Student Affairs the student must also complete a survey via the intranet (SharePoint) to inform the Preceptor Director, Ms. Karen Myers, of the session to be missed and the rescheduled date.**

Survey link: https://intranet.med.fsu.edu/sites/academicaffairs/ome/student/Lists/2014 D201 Preceptorship/overview.aspx

Schedule changes or session remediation for planned preceptorship absences are negotiated in advance. It is the student's responsibility to arrange for a make-up session within one week of the missed session. The student will not incur a grading penalty for an approved absence, providing the session is completed by a schedule change or via remediation session.

Unplanned, but excused, preceptorship absences: In addition to requesting approval of an unplanned absence from Student Affairs, students are expected to contact the Preceptor Director, Ms. Myers, **and** the preceptor as soon as possible, with the goal of alerting the preceptor in

advance that the student will not be coming. This must be completed as soon as possible to avoid impacting successful completion of the preceptorship component of the course.

Impact of excused absence on the student's grade: Absence with a preceptor must be rescheduled as quickly as possible and notification of the rescheduled date completed via the intranet survey. The student will not incur a grading penalty for an excused absence, provided it is rescheduled or remediated.

Unexcused preceptorship absences: In addition to absences not approved by Student Affairs, an absence will be considered to be unexcused if an able student fails to contact the preceptor directly and in advance of the expected time of arrival to inform him/her that the student will not be at the preceptor's site that day.

Impact of unexcused absence on the student's grade: The student may not be allowed to reschedule the missed session and could receive a grade of fail for the course.

Professional Attire

Professional attire consists of clothes consistent with community norms for physicians. Examples of these norms in Tallahassee are: no jeans, seductive, revealing or tight-fitting clothes, sheer or see-through fabrics, strapless, low-necked or midriff-baring clothes, shorts, sweats, hats, or open-toed shoes.

> *For men,* professional attire consists of slacks, a collared shirt and dress or casual shoes (no sport shoes or sandals). Ties may be either required or forbidden in some clinical situations.
>
> *For women,* professional attire consists of slacks or a conservative length dress or skirt with a blouse or sweater. Skirt edge should rise no higher than 2" above the top of the knee during all clinical care and training maneuvers and should not be tight-fitting. Heels more than 3" in height are never appropriate in clinical settings.
>
> *For both men and women,* a white lab coat is required. On those occasions when students are examining each other, you will be informed of the appropriate apparel for that session.
>
> *Professional appearance:* Long hair must be pulled back and secured. Facial hair must be neatly groomed. If possible, all tattoos should be covered by clothing. No visible body piercing except a single piercing in each ear. No large earrings or loose jewelry. Fingernails must be trimmed. If nail polish is worn, it should not be a distracting color. No strong perfume or other scented products. In compliance with OSHA regulations, closed-toed shoes are required in all clinical settings—including the CLC.

The established "norms" of certain clinical settings may modify these standards for professional attire, but any variations in professional attire must be approved by the student's supervisor. Consult your supervisor to clarify expectations for student attire in any ambiguous or new situations.