

PART B. REQUIRED COURSE FORM

Course title:	NEUROSCIENCE
Sponsoring department or unit:	Neuroscience Biomedical Engineering
Name of course director:	Jay Baraban, PhD

List all organizational units (e.g., physiology department, nursing school, library), including the lead department, with ongoing involvement in the course, and the number of instructional staff from each such unit:

Organizational Unit	Number of Teaching Staff Involved
Department of Neuroscience	16
Biomedical Engineering	4
Department of Neurology	11
Department of Biologic Chemistry	1
Department of Neurosurgery	1
Department of Otolaryngology	2

Course Objectives

Are there written objectives for the course? (check)

Yes	X	No	
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Briefly summarize the objectives/content areas covered in the course.

1. Be able to describe how neurons receive, process and transmit information. 2. Be able to identify key features of neurons and glial cells and describe their function. 3. Be able to describe the life cycles of the major neurotransmitter classes and how they are affected by commonly used drugs. 4. Be able to describe the developmental processes that guide formation of the nervous system. 5. Be able to describe key processes underlying neuronal plasticity and their role in development and learning. 6. Be able to describe the anatomy and physiology of the autonomic, somatosensory, auditory, vestibular, visual, olfactory and gustatory systems. 7. Be able to describe the anatomy and function of the major components of the motor system. 8. Be able to describe the role of the limbic system in memory, emotion and motivation. 9. Be able to identify the major components of the sensory, motor and limbic systems. 10. Be able to describe the common symptoms and signs associated with nervous system dysfunction.

Preparation for Teaching

If graduate students, postdoctoral fellows in the biomedical sciences, or residents teach in the course (as lecturers, small group facilitators, laboratory instructors), describe how they are informed about the course objectives and prepared for their teaching role.

Graduate students and residents who serve as teaching assistants in the neuroanatomy laboratory sessions attend pre-lab reviews conducted by one of the senior lab instructors.

If the entire course is taught at more than one site (e.g., at geographically separate campuses), describe how faculty members at all sites are oriented to the objectives and grading system.

➤ *Not applicable.*

Student Evaluation

If NBME subject (shelf) examinations are used, give the mean scores for the last three classes:

- *Not applicable.*

Year:			
Score:			

Check all the formats that are used in examinations or other evaluations that students must take in order to pass the course:

<input checked="" type="checkbox"/>	Multiple-choice, true/false, matching questions	<input type="checkbox"/>	Laboratory practical items
<input checked="" type="checkbox"/>	Fill-in, short answer questions	<input type="checkbox"/>	Problem-solving exercises
<input type="checkbox"/>	Essay questions or papers	<input type="checkbox"/>	Presentations
<input type="checkbox"/>	Oral exams	<input type="checkbox"/>	Other (describe)

Briefly describe any formative assessment activities (practice exams, quizzes, etc.)

- *Small group discussions*
- *Neuroanatomy lab sessions*
- *Quizzes*
- *Mid-term exam*

Is there a narrative evaluation submitted in addition to the course grade? (check)

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
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Course Outcomes/Evaluation

Comment on the adequacy of faculty and other resources to teach the course (e.g., educational space, computer hardware and software, support personnel).

Adequate

Provide a summary of student feedback on the course (and any other available evaluation data) for the past two years. If the course is new or significantly revised, provide evaluation data for the new version of the course only. If problems have been identified by student evaluations or other data, describe how they are being addressed.

In response to overwhelming student feedback, we have instituted weekly problem set/discussion groups during the course. The other major problem identified by students is the need for including images in the lab manual which is now distributed as a hard copy with references to images in the required lab text. In response to this request and to take advantage of the advent of digital technology, we are in the process of developing a digital version of the lab manual that would include key images. In addition, we are enthusiastic about efforts led by Dr. Harry Goldberg to introduce virtual microscopy into the neuroanatomy lab course in the near future. This new capability would make digital images readily accessible to students on line and obviate concerns about the technology would greatly facilitate our ability to update the slide collection to highlight recent advances in neurobiology.

Identify major successes in the course and problems to be overcome.

The major success of the course is integrating faculty from multiple departments to introduce key concepts in neuroscience, such as pain, papillary and spinal reflexes, autonomic nervous system, memory, etc., and illustrate their direct relevance not only to neurology, neurosurgery and psychiatry but also to virtually all aspects of medicine.