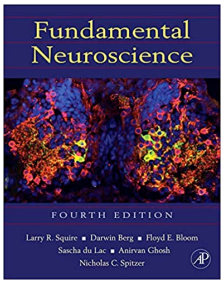
**NEUR 602, Cellular Neuroscience, FALL 2020**

Meets: Weds 10:30AM-1PM via Zoom/Synchronous Online

Instructor: Nadine Kabbani, nkabbani@gmu.edu




**Overview**: This is a core graduate neuroscience course that presents key concepts in cellular neuroscience and provides a survey of neuronal function, which includes recent topics in cell structure, membrane function, electrical properties of neurons, and intracellular signaling. The course also enables an introduction to research trends in neuroscience building on a study of the primary literature.

**Textbook**: FUNDAMENTAL NEUROSCIENCE (Squire et al., 4th edition)

**Class structure and grading:** The class will be divided into 2 parts: A 1.5 hour lecture followed by a 1 hour student led presentation and discussion on a research article. There will be 2 exams, and each will count for 40% of the final grade. The remaining 20% is based on participation and presentation of the research articles.

**Exam Format**: Exams will be administered online via Blackboard. Each Exam will be a combination of multiple choice and true/false questions. Exams will be available between 9am and 5pm on the scheduled day and you will have up to 2 hours to complete the exam.

**Article Selection and Presentation:** We will explore some of the primary literature cited in the chapter. Each student will choose an article from the Reference section of the chapter and provide a 40 min presentation on that article. The articles will be posted on Blackboard during the first week of class.

| **Date** | **Topic** | **Presenter** | **Book Chapters** |
|---|---|---|---|
| 8/26 | Course Introduction/Fundamentals of Neuroscience | ------ | Ch. 1 |
| 9/2 | ---------- | ------ | Ch. 2,3 |
| 9/9 | Basic Plan and Cellular Components of Nervous Tissue Subcellular Organization | Richard O.<br>Dylan S. | Ch.2-4 |
| 9/16 | Membrane and Action Potential | Liza V.<br>Apoorva | Ch. 5 |
| 9/23 | Neurotransmitters | Jeffrey K.<br>Brandon L. | Ch. 6 |
| 9/30 | Neurotransmitter Release | Rafael HJ.<br>Yasmeen | Ch. 7 |
| 10/7 | Neurotransmitter Receptors | Sreehari G.<br>Zara. A. | Ch. 8 |
| **10/14** | **EXAM 1 (online)** | | |
| 10/21 | Intracellular Signaling | Diego | Ch. 9 |
| 10/28 | Intracellular Signaling 2: lipids/calcium | Angie C. | Ch. 9 |

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|---|---|---|---|
| 11/4 | Brain Energy Metabolism | Bailey<br>Nooshin | Ch. 12 |
| 11/11 | Protein Synthesis, Degradation | Jeremy L. | ----- |
| 11/18 | Neuroimmune Interaction | Aya A.<br>Kayleen H. | ----- |
| 11/25 | No class- Thanksgiving | | |
| **12/2** | **EXAM 2 (online)** | | |