**SYLLABUS Course Title:** Cellular Neuroscience and Disease

**Term: Summer 2016**

**Class room location & Time:** TBA

**Course and call number & credit hours:** PCB 4842, XXX, 3 credits

**Course type:** Lecture, in class

**Course Prerequisites:** PCB 3063, minimum grade of 8, Prerequisite or Co-requisite: BCH 3033

**Instructor:** Tanja A. Godenschwege, Ph.D.

**Office:** SC209, MC19 **e-mail:** [godensch@fau.edu](mailto:godensch@fau.edu) **Phone:** 561-799-8055

**Office Hours:** TBA

**Course description:** The course focusses on the cellular aspects of human neurological diseases and disorders. Lectures provide the basic knowledge about common cellular and molecular mechanisms, principles and pathways that are relevant to neuronal processes and neurological diseases.

**Course Objectives:** The objective it for the students to know and understand common cellular and molecular mechanisms, principles and pathways that are relevant to neuronal processes and neurological diseases. Discussions and presentations are aimed to stimulate independent thinking about neuroscience research topics

**Course format:** Method of instruction: Lectures, classroom discussion and exercises, single or group assignments/presentations.

**Course topical outline: Preliminary Schedule.** This schedule applies to all sections taught by this instructor and *is subject to change at any time by the instructor, depending on the needs of the class. Changes may be announced online via blackboard or verbally in class.*

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| **Schedule** | **Topics** | **Assignment/ homework** |
| Week 1 | Neuronal model systems, the neuron doctrine and glia | **Read hand outs, Chapter 1** |
| Week 2 | Action potential & Synaptic transmission | **Read hand outs, Chapter 11** |
| Week3 | **Quiz** Cellular signaling & Axon  guidance | **Read hand outs, Chapter 10, 15,**  **16, 21** |
| Week4 | Dendrite development & Down syndrome | **Read hand outs, Chapter 10, 15,**  **21** |
| Week5 | **Quiz** Control of Gene Expression &  Fragile-X syndrome | **Read hand outs, Chapter 7** |
| Week6 | Control of Gene Expression & Rett syndrome | **Read hand outs, Chapter 7** |
| Week7 | Mitochondria & Apoptosis -  Parkinson's | **Read hand outs, Chapter 7, 13,**  **14, 18** |
| WeekS | **Quiz** Ubiquitination & autophagy -  Parkinson's | **Read hand outs, Chapter 7, 13,**  **14, 18** |
| Week9 | Oxidative stress & Amyotrophic  lateral sclerosis, Topic assignment | **Read hand outs, Chapter 7, 13,**  **14, 18** |
| Week 10 | Plasma membrane, Lipid rafts and  Alzheimer's | **Read hand outs, Chapter 10, Presentations preparation** |
| Week 11 | **Quiz** Cytoskeleton, axonal transport- Alzheimer's | **Read hand outs, Chapter 15, 16, Presentations preparation** |
| Week 12 | Injury signaling & Presentation  preparation | **Read hand outs, Chapter 18, Presentations preparation** |

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| Week 13 | **Quiz,** Regeneration & presentation  Preparation | **Read hand outs, Chapter 18,**  **Presentations preparation** |
| Week 14 | **Presentations** |  |
| Week 15 | **Review & Finals** |  |

**Course evaluation method:**

Five quizzes throughout the course period, which will count for a total of 50% of the finale grade, mini presentations at the end of the semester will count for 20% of the grade and a final cumulative exam, which will count for 30% of the final grade.

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| **Grade** | **Perce** | **tage** | **Grade** | **Percentage** |
| A | 93 | | c | 69-72 |
| A | 89-92 | | c· | 65-68 |
| B. | 85-88 | | D. | 61-64 |
| B | 81-84 | | D | 57-60 |
| B- | 77-80 | | D- | 53-56 |
| c· | 73-76 | | F | 52 |

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**Policy on makeup tests, late work, and incompletes:**

Only one make up exam/quiz per student will be offered.

***Incomplete Grade:*** Consistent with FAU policy, an incomplete grade will only be given to a student who fulfills **a//** of the following criteria:

1. Misses the 2 of the 6 offered exams/quizzes, both due to an FAU approved emergency

2. Has a grade of C or better

3. Submits evidence of the emergency and signs an incomplete agreement.

**Required texts/readings:**

**Required Textbook: Molecular Biology of the Cell, Fifth Edition** Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., and Walter, P. Garland Publishing, Inc. New York & London

**Alternative textbook:** Essential Cell Biology, Alberts et al, Publisher: Garland Science

**Research and review articles** will be posted on Blackboard.

**Classroom etiquette policy:** University policy on the use of electronic devices states: "In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions."

**Disability policy statement:** *In compliance with the Americans with Disabilities Act (ADA), students who require reasonable accommodations due to a disability to properly execute coursework must register with the Office of Student Accessibility Services (SAS) and follow* all *SAS procedures. SAS has offices across three of FAU's campuses- Boca Raton, Davie, and Jupiter, however, disability services are* *available for students on* all *campuses.*

**Religious Accommodations:** Reasonable accommodation will be made for students participating in a religious observance but students must notify the instructor in advance of their intention to participate in religious observation and request an excused absence.

**Honor Code policy statement:** Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, 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. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001 at <http://www.fau.edu/cti/4.001_Code_of_Academic_lntegrity.pdf>