

 FLORIDA ATLANTIC UNIVERSITY	COURSE CHANGE REQUEST Graduate Programs		UGPC Approval _____ UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	Department Biological Sciences College Charles E. Schmidt College of Science		
Current Course Prefix and Number BSC 5417C		Current Course Title Practical Cell Neuroscience	
<i>Syllabus must be attached for ANY changes to current course details. See guidelines. Please consult and list departments that may be affected by the changes; attach documentation.</i>			
Change title to: Change prefix From: To: Change course number From: 5417C To: 6417C Change credits* From: To: Change grading From: To:		Change description to: Change prerequisites/minimum grades to: Change corequisites to: Change registration controls to:	
*Review Provost Memorandum		Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade.	
Effective Term/Year for Changes: Spring 2020		Terminate course? Effective Term/Year for Termination:	
Faculty Contact/Email/Phone Ken Dawson-Scully-kdawsons@fau.edu 561-297-0337			
Approved by Department Chair <u>Sarah L. Nethen</u> College Curriculum Chair <u>Christopher Beecher</u> 2020.02.10 09:32:54 -05'00' College Dean <u>Wendy Dil Kalies</u> UGPC Chair _____ UGC Chair _____ Graduate College Dean _____ UFS President _____ Provost _____		Date <u>11-18-19</u> <u>2/10/2020</u> _____ _____ _____	

Email this form and syllabus to [UGPC@fau.edu](#) one week before the UGPC meeting.

GRADUATE COLLEGE
FEB 10 2020



Charles E. Schmidt College of Science
Department of Biological Sciences
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November 14th, 2019

Re: BSC5417C to BSC 6417C course change request

Dear Dr. Brooks,

I am requesting an official change of the course BSC 5417C, Practical Cell Neuroscience to be changed to a BSC 6417CC course. This course is already taught at the 6xxx level since it is one of the core elective courses for the IB-NS PhD program. The reason for this change is to insure it can count as one of the core 12 credits in our MS Biology program. This course was created in Biology, and is taught by Biology faculty too. Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ken Dawson-Scully', written over a horizontal line.

Ken Dawson-Scully MSc, PhD.
Associate Professor

Course Title: **PRACTICAL CELL NEUROSCIENCE** Spring Semester 2020-credits 3

Course Number:

BSC 6417C Section XX- (CRN)

Logistics: *Lecture:* every Monday 11:00pm – 12:50pm
Location: PS 112 (Boca)
Lab: every M/T 1:00pm-3:50pm
Location: SC 176

Pre-requisites: Genetics PCB 3063 or equivalent

Instructors: Dr. Ken Dawson-Scully (Boca)
Office Number: SC-1 Room 214
Office hours: Monday 8:30am-9:45am
Telephone: 561-297-0337
E-mail: ken.dawson-scully@fau.edu

TAs: Juan Lopez (juanlopez2016@fau.edu)
Cici Nicholas (cnicholas2013@fau.edu)
Office Hours: Monday, 9:00am-11:00am SC 176

Help with downloading NIA: Alec Simonson (asimonson2014@fau.edu)

Required textbooks:

- 1) From Neuron to Brain: A Cellular and Molecular Approach to the Function of the Nervous System, 2001, Fourth Edition by A. Robert Martin, Bruce G. Wallace, Paul A. Fuchs, and John G. Nicholls (Sinauer Associates ISBN-10:0878934391 ISBN-13: 978-0878934393)
- 2) Neurons in Action V2. Tutorials and Simulations Using NEURON, 2007 by John W. Moore and Anne E. Stuart (Sinauer Associates ISBN-978-0-87893-548-2)

Course description, purpose, and objectives: This course will bring the students closer to understanding neurophysiological signaling at the cellular level, where only a few cells communicate in close proximity. We will look at signaling from the perspective of single ion channels to cellular synaptic transmission. The electrical properties of neurons and their signaling are the basis for all neuronal function. The students will learn through both theory and practical laboratory these principles and apply them in an experimental proposal, which they will present and then execute resulting in a final report.

Method of instruction: Lectures, classroom exercises, lab exercises, proposal writing, and formal manuscript writing.

Practical Cell Neuroscience Lecture Topics:

- 1) The cell membrane
- 2) Equilibrium potentials
- 3) The Na Action Potential
- 4) Threshold

- 5) Voltage Clamp and Current Clamp
- 6) Ion Channels
- 7) The Ca Action Potential
- 8) The Neuromuscular Junction
- 9) Postsynaptic Inhibition
- 10) Interaction of Synaptic Potentials
- 11) Myelination
- 12) Axon Diameter
- 13) Temperature and Cell Signaling

Practical Cell Neuroscience weekly assignments for lecture and lab Syllabus Spring 2020

Jan 7/8	A#1: Introduction/Membrane/Equilibrium/Sample quiz (Quiz #1: Jan 7/8)
Jan 14/15	A#2: The Na AP/Threshold/Ca Sensitivity of Na Channel/Quiz #2: Jan 14/15
Jan 21/22	HOLIDAY—NO CLASS/LAB
Jan 28/29	A#3: Non-Uniform Density/Voltage Clamping/Chattering Channels/Quiz #3: Jan 28/29
Feb 4/5	A#4: The Ca AP/The NMJ/Postsynaptic Inhibition/Quiz #4: Feb 4/5
Feb 11/12	Sample Presentation/Proposal Write Up & A#5: Interactions of Synaptic Potentials/Passive Axon/Axon Diameter/Quiz #5: Feb 11/12
Feb 18/19	A#6: Unmyelinated Axon/Myelinated Axon/Partial Demyelination/Quiz #6: Feb 18/19
Feb 25/26	A#7: Impulse Initiation/Synaptic Integration/Impulse Invasion/Quiz #7: Feb 25/26
Mar 4th - 10th	SPRING BREAK – NO CLASS/LAB
Mar 11/12	PRESENTATIONS DUE/ Grad Assignment: Na & K Channel Kinetics/Voltage Clamping Intact Cells/Grad Quiz: Mar 11/12
Mar 18/19	WORK ON PROJECT – data graphs
Mar 25/26	WORK ON PROJECT – data graphs
Apr 1/2	WORK ON PROJECT – data graphs
Apr 8/9	WORK ON PROJECT – data graphs
Apr 15/16	WORK ON PROJECT – data graphs DUE
Apr 22	PROJECT DUE by 1pm (hand in, email, & Turnitin)
Apr 29	FINAL EXAM 10:30am

Assessment Procedures, Grading Criteria, Class Policies:

- 10% Quizzes (Quiz every class to show you read the lab beforehand)
- 10% Participation (Attendance + TA meeting)
- 20% Assignment Sheets (These will be done during lab)
- 20% Proposal of Formal Lab Report (a one-page report and 3-slide PowerPoint presentation on your proposed experiment for your Formal Lab Report both emailed and hard copy)
- 20% Formal Lab Report (both emailed and hard copy)
- 20% Exam (Comprehensive Exam)

A	94-100%	B-	78-82%
A-	90-94%	C+	74-78%
B+	86-90%	C	70-74%
B	82-86%	C-	66-70%

D+ 62-66%
D 58-62%

D- 54-58%
F <54%

It is the responsibility of the student to withdraw from this class, should that status be desired - the instructor cannot withdraw students from the course. The instructor will not give the grade of "I" in lieu of a grade of "D" or "F". The grade of "I" will be considered only in exceptional cases (such as serious illness) for students who are presently performing at a "C" or higher level in the course.

Attendance: Students are expected to attend all scheduled classes. If you miss a class you are responsible for ALL the material covered during that class, including lecture material and rules and regulations about the course (such as penalties for late assignments, etc.).

FAU Attendance Policy Statement:

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and with a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

Reasonable accommodation for makeups: Reasonable accommodation will be made for students participating in a religious observance or in University-approved activities, including athletic or scholastics teams, musical and theatrical performances, and debate activities. Unjustifiable reasons for missing an exam will result in zero points for the exam missed. Appropriate documentation must be presented for justifiable absence from an exam.

Homework assignments and papers: The papers and homework are due on the dates assigned. These will be accepted up to 1 week late, but they will be penalized 10%/day. None will be accepted over 1 week late.

Final exam: The final exam will be a comprehensive exam on all material covered in this course.

Accommodations for students with disabilities: In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with 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. For more information, please visit the SAS website at www.fau.edu/sas/

Honor Code: 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 [https://www.fau.edu/ctl/4.001/Code of Academic Integrity.pdf](https://www.fau.edu/ctl/4.001/Code%20of%20Academic%20Integrity.pdf)

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Credit hour definition: This course involves 50 minutes of in-class instruction for each credit hour per week, and a minimum of two hours of out of class assignments each week for 15 weeks.

Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>