

SYLLABUS

BIO 334 AND NEU 534

PRINCIPLES OF NEUROBIOLOGY

SUMMER 2018

COURSE DIRECTOR:

ROBERT T. WATSON, PH.D.

NEUROBIOLOGY & BEHAVIOR, COLLEGE OF ARTS AND SCIENCES

STONY BROOK UNIVERSITY

COURSE SCHEDULE

BIO 334/NEU 534 Summer 2018			
Mon-Wed 1:30-4:50pm			
Social & Behavioral Sciences S328			
Week 01	Time	Date	Description
Mon	10:00pm	9-Jul	Study day: ≥4 questions from lectures 1-4 due by 10pm
Wed	1:30pm	11-Jul	Class Meeting: Course Intro & Discussion of Lectures 1-4
Fri	10:00pm	13-Jul	≥4 questions from lectures 5-8 due by 10pm
Week 02	Time	Date	Description
Mon	1:30pm	16-Jul	Class Meeting: Discussion of Lectures 5-8
Wed	3:30-4:50pm	18-Jul	EXAM 1 Lectures 1-8
Week 03	Time	Date	Description
Mon	10:00pm	23-Jul	Study day: ≥4 questions from lectures 9-12 due by 10pm
Wed	1:30pm	25-Jul	Class Meeting: Discussion of Lectures 9-12
Fri	10:00pm	27-Jul	≥4 questions from lectures 13-17 due by 10pm
Week 04	Time	Date	Description
Mon	1:30pm	30-Jul	Class meeting: Discussion of Lectures 13-17
Wed	3:30-4:50pm	1-Aug	EXAM 2 Lectures 9-17
Week 05	Time	Date	Description
Mon	10:00pm	6-Aug	Study day: ≥4 questions from lectures 18-21 due by 10pm
Wed	1:30pm	8-Aug	Class Meeting: Discussion of Lectures 18-21
Fri	10:00pm	10-Aug	≥4 questions from lectures 22-25 due by 10pm
Week 06	Time	Date	Description
Mon	1:30pm	13-Aug	Class Meeting: Discussion of Lectures 22-25
Wed	3:30-4:50pm	15-Aug	EXAM 3 Lectures 18-25

COURSE DESCRIPTION

BIO 334/NEU 534 is an introductory course that explores the diverse field of neuroscience research. The course begins with an overview of nervous system anatomy and physiology, with an emphasis on cellular and molecular mechanisms of brain function. Brain systems for motor control and sensory processing are also explored. The course finishes with a discussion of the cellular and molecular basis for higher-order brain functions such as learning, emotion, and cognition.

COURSE LEARNING GOALS

Upon completion of the course students will be able to:

1. Describe the anatomical and cellular organization of the adult brain, how it develops into that state, and how brains arose during evolution (lectures 1-4).
2. Explain how electrical and chemical signals are generated, transmitted, propagated, and interpreted by neurons (lectures 5-7).
3. Describe how specific brain and spinal cord systems are organized to control motor behavior and how motor system dysfunction arises in disease states such as Parkinson's and Huntington's (lectures 8-11).
4. Explain how the somatic senses, chemical senses, vestibular senses, audition, and vision are organized to gather and transduce information about the environment; and describe how sensory and motor information are integrated by the brain (lectures 12-19).
5. Describe the brain regions involved in emotion, cognitive function, and language, and explain how damage or neurochemical imbalances can lead to disorders of thinking and mental illness (lectures 20-25).

GENERAL INFORMATION

Director: Dr. Robert Watson (robert.watson@stonybrook.edu)

Course Administrators:

- **Ms. Diane Pauciullo: Exam Grades, Excused Absences**
diane.pauciullo@stonybrook.edu G108 CMM/BLL, (631) 632-8171
- **Ms. Lynette Giordano: Course Registration**
lynette.giordano@stonybrook.edu G110 CMM/BLL, (631) 632-8530

COURSE FORMAT

The summer section of BIO 334/NEU 534 is offered in a **hybrid** format. In the hybrid format, **students view recorded lectures on their own time before class**. During the **required** class meetings, students interact with instructors for discussion and review of the content. The hybrid course has the equivalent content, goals, and standards as the traditional lecture version of BIO 334 currently offered during Spring semesters.

The recordings of lectures by Professors Evinger and Xiong were prepared during traditional BIO 334 lectures at Stony Brook University. The lectures are provided as ECHO recordings and as PDF versions of the Power Point slides.

COURSE BLACKBOARD SITE

The BIO 334/NEU534 Blackboard site can be accessed at blackboard.stonybrook.edu. Students are expected to check Blackboard every day. Important materials such as announcements, lecture slides/handouts, exam answers, and grades will be posted exclusively on the site.

TEXTBOOK

There is no required or recommended textbook for the course. The following book could be considered for supplemental reading: *Cellular Physiology of Nerve and Muscle*, Mathews; *Neuroscience: Exploring the Brain*, 3rd Ed, Bear et al.; *From Neuron to Brain*, 5th Ed, Nicholl's et al.; *Principles of Neural Science*, 5th Ed, Kandel et al.

There are many open-access neuroscience websites available, including online textbooks. Links to some of these websites can be found in the Documents section of Blackboard.

ECHO RECORDINGS

Lecture recordings are available through Blackboard. Technical problems may arise that may prevent or hinder your ability to view or hear the recordings. Please contact the appropriate technical specialists if problems arise:

tit@stonybrook.edu; helpme@stonybrook.edu;

<https://it.stonybrook.edu/help/kb/where-to-get-help>

The course director cannot address technical issues with Blackboard or the Echo recordings. In the event that the Echo recording are unavailable, students should focus on the lecture slides posted on Blackboard.

GRADING FOR BIO 334

- There will be 3 exams. The format may include some combination of multiple choice, true/false, fill-in-the-blank, and short answer questions.
- Your two highest exam scores will each count 40%; your lowest exam score will count 10%.
- The submitted questions are worth 10%. Students are required to write and submit thoughtful questions based on the Echo recorded lectures.
- Letter grades will be assigned as follows: A: $\geq 90\%$; A-: 88-89%; B+: 86-87%; B: 81-85%; B-: 78-80%; C+: 75-77%; C: 50-74%; D: 42-49%; F: $\leq 42\%$.

GRADING FOR NEU 534

- There will be 3 exams. The format may include some combination of multiple choice, true/false, fill-in-the-blank, and short answer questions.
- Your two highest exam scores will each count 35%; your lowest exam score will count 10%.
- The submitted questions will count 10%. Students are required to write and submit thoughtful questions based on the Echo recorded lectures.
- In-class presentations will count 10%. Students enrolled in NEU 534 will be assigned topics for weekly discussions. Students will prepare a short Power Point presentation (15 min) on the assigned topics.
- Letter grades will be assigned as follows: A: $\geq 90\%$; A-: 88-89%; B+: 86-87%; B: 81-85%; B-: 78-80%; C+: 75-77%; C: 50-74%; D: 42-49%; F: $\leq 42\%$.

Any student who misses more than one exam for any reason will receive a Final Grade of F for the course.

Stony Brook Picture ID Card: Every student must present a **valid Stony Brook ID card** when handing in an exam. Other forms of identification (e.g., driver license) will not be accepted. Students who are unable to present a Stony Brook ID at an exam must bring it to Ms. Pauciuolo within 48 hours following the exam. Failure to do so will result in the assignment of a grade of zero (0) for the exam.

No one will be admitted to an exam later than 30 minutes after the posted start time. Any student who arrives later than 30 minutes after the posted start time will not be allowed to take the exam and will receive a grade of zero (0) for the exam.

EXCUSED ABSENCE FROM AN EXAM

In case of injury or illness, you may be excused from an exam provided that you contact the course director (robert.watson@stonybrook.edu) within 24 hours of the exam **AND** you submit a doctor's note within one week of the exam. A makeup exam will be arranged after the third midterm exam.

DISABILITY SUPPORT SERVICES (DSS)

If you have a physical, psychological, medical, or learning disability that may impact your course work,

please contact Disability Support Services (631) 632-6748 or <http://studentaffairs.stonybrook.edu/dss/>. They will determine with you what accommodations are necessary and appropriate. All information and documentation are confidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their Professors and Disability Support Services.

ACADEMIC INTEGRITY

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at:

<http://www.stonybrook.edu/uaa/academicjudiciary/>

Academic dishonesty includes any act that is designed to obtain fraudulently, either for oneself or for someone else, academic credit, grades, or other recognition that is not properly earned or that adversely affects another's grade. The following represents examples of this and does not constitute an exhaustive list:

- Cheating on exams or assignments by the use of books, electronic devices, notes, or other aids when these are not permitted, or by copying from another student.
- Collusion: two or more students helping one another on an exam or assignment when it is not permitted.
- Ringers: taking an exam for someone else, or permitting someone else to take one's exam.
- Submitting the same paper in more than one course without permission of the instructors.
- Plagiarizing: copying someone else's writing or paraphrasing it too closely, even if it constitutes only some of your written assignment, without proper citation, even instructor notes & presentation slides.
- Falsifying documents or records related to credit, grades, status (e.g., adds and drops, P/NC grading, transcripts), or other academic matters.
- Altering an exam or paper after it has been graded in order to request a grade change.
- Stealing, concealing, destroying, or inappropriately modifying classroom or other instructional material, such as posted exams, library materials, laboratory supplies, or computer programs.
- Preventing relevant material from being subjected to academic evaluation.
- Presenting fabricated excuses for missed assignments or tests.
- Unauthorized clicker use: using someone else's clicker, falsifying attendance roster, signing in for someone
- Electronic communication devices, including cellular phones, beepers, speakers, calculators and headphones must be secured in a closed container (and not, for example, worn on a belt or around the neck) and must be turned off (and not, for example, simply set on vibration mode) during any examination. This policy shall be announced before each examination. Note: even if a student does not answer a ringing cell phone during an exam, it can be considered academic dishonesty for not having it turned off.

All students who are found to engage in Academic Dishonesty will receive a grade of F for the entire course. All written assignments submitted through Blackboard will be submitted for evaluation by the SafeAssign Plagiarism detection tool. SafeAssign checks all student work against an extensive database of published works, web pages, and assignments from all other previous and current students. **Plagiarism of any of these sources is considered Academic Dishonesty.**

CRITICAL INCIDENT MANAGEMENT Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, and/or inhibits students' ability to learn.

EMAIL POLICIES

Email sent via Blackboard (<http://blackboard.stonybrook.edu>) is the principal way we will officially communicate with you for this course. It is your responsibility to make sure that you read your email in your official University email account. For most students that is Google Apps for Education (<http://www.stonybrook.edu/mycloud>) but you may verify your official Electronic Post Office (EPO) address at:

<http://it.stonybrook.edu/help/kb/checking-or-changing-your-mail-forwarding-address-in-the-epo>

If you choose to forward your official University email to another off campus account, we are not responsible for any undeliverable messages to your alternative personal accounts. You can set up email forwarding using these DoIT-provided instructions found at:

<http://it.stonybrook.edu/help/kb/setting-up-mail-forwarding-in-google-mail>

TECHNICAL REQUIREMENTS

This course requires that you have access to the internet. You are responsible for having a reliable computer and internet connection throughout the course.

STUDENT TECHNOLOGY SERVICES

Course instructors are not available to answer all technical questions you may have. It may also take them a while to respond to your technology-related questions. **The fastest and most effective way to get answers to questions or to resolve technical issues you may have is to contact the TLT Student Support Desk.** Please contact the Support Desk *before emailing the course instructors* about technology issues. Student Support Consultants who work for the TLT Support Desk are available to offer support in person at the all of the SINC sites, via email at helpme@stonybrook.edu, via phone at 631-632-9602, or through a live chat feature. If a consultant is unable to help with a problem, they will create and submit a trouble ticket which will be forwarded to the appropriate DoIT staff member for review. To access the live chat feature, and for more information on the services available through the TLT Student Support Desk, visit: <https://it.stonybrook.edu/services/tilt-student-help-desk>