

Course Syllabus

NSC 4353: Neuroscience Laboratory Methods — Fall 2016

Green Hall 4.708 Fridays 2:30–6:45 PM

Instructor Contact Information

Supervising Professor

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Teaching Assistants

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Course Pre-requisites, Co-requisites, and/or Other Restrictions

NSC 3361 (Behavioral Neuroscience)

Course Description

This laboratory course is designed to expose neuroscience students to the methods used in the field. Students will research existing literature, develop hypotheses, design and carry out experiments, and analyze and report results. The course fulfills the advanced writing requirement for Neuroscience majors, and 3 hours of the Communication component of the Core Curriculum.

Student Learning Objectives/Outcomes

After completing the course, students should be able to:

- Apply scientific methods to design, conduct and analyze studies using available research methods.
- Locate, concisely summarize, and compare findings from sources in peer-reviewed literature.
- Demonstrate proficiency in writing research reports, in a manner suitable for publication, that include an abstract, introduction, methods, results and discussion sections.
- Demonstrate competence in effectively collaborating with others.
- Students will be able to write using effective technical requirements, including organization, mechanics, and thesis development.
- Students will be able to demonstrate an ability to conduct research, apply source material, discuss general information, and apply logical process when writing.

Required Textbooks and Materials

- Day and Gastel, How to Write and Publish a Scientific Paper, 6th or 7th edition.
- Cargill and O'Connor, Writing Scientific Research Articles.
- Other readings on: **eLearning**

Assignments & Academic Calendar

Exams: The first practical exam will test your knowledge of neuroanatomy, the second exam will test your knowledge of neurophysiology, and the third exam will test your understanding of behavioral pharmacology as well as arousal and memory systems.

Lab Reports: Students must complete three typed publication- style lab reports, which include a title, abstract, introductory, background, methods, results, summary discussion, and published references. **Students should expect to write a minimum of 15 pages cumulative for the three lab reports with a minimum of 5 pages of revision. However, students will usually end up writing more than 15 pages by the end of the course.**

ALL LAB REPORTS MUST BE SUBMITTED BY THE DUE DATE. You must also bring a hard (print) copy to lab on the date due.

Grading Policy

Exams (30% of grade): Each of the three exams is worth 10% of your final course grade.

Lab Reports (60% of grade):

Lab report #1 Draft = 5%
Lab report #1 Final = 25%
Lab report #2 Draft = 5%
Lab report #2 Final = 25%

The grading rubric details all aspects of the paper as well as possible point deductions. Papers are graded for formatting, grammar, comprehension,
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and content. Papers MUST be typed- papers that are not typed will not be accepted or graded. Students must complete publication - style lab reports, which include a title, abstract, introductory, background, methods, results, summary discussion, and published references. **Students should expect to write a minimum of 15 pages cumulative for these lab reports with a minimum of 5 pages of revision. However, students will usually end up writing more than 15 pages by the end of the course.**

Participation/Attendance (10% of grade): Two or more unexcused absences will result in a reduction of the final grade by one letter grade! Coming to lab late or leaving lab early will also count as an absence.

All lab reports must be submitted by due date.

Lab reports are due on the dates listed below, unless pre-approved by the instructors. **All lab reports must be typed** and submitted as stated in course syllabus. One letter grade will be dropped for every day a lab report is late (meaning the best you can hope for is a B if the report is submitted one day late). To meet the advanced writing requirement, students are expected to write a minimum of 15 pages and 5 pages of revision. Make-up exams are at the discretion of the professor. However, exam one covering neuroanatomy cannot be made up.

Final Grades:

Letter Grade	Numerical Range
A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D	60-69
F	0-59

Course Policies

Make-up exams

Make-up exams are at the discretion of the professor. However, exam one covering neuroanatomy cannot be rescheduled. If you miss a lab, you are encouraged to attend another lab after obtaining permission from the professor of that lab.

Late Work

One letter grade will be dropped for every day a lab report is late (meaning the best you can hope for is a B if the report is submitted one day late).

Class Attendance

Attendance and Participation grades will be based on the following criteria.

- **Students are responsible for completing all assigned readings BEFORE coming to class.** Prior to the start of each lab session, questions included at the end of the chapter should be answered and in the lab notebook.
- **Students must attend class on time (attendance will be taken at the first of every lab period), complete all assigned experiments, and check out with their instructors prior to leaving the lab.** All equipment and experimental areas must be clean before leaving.

Students must rotate through all aspects of lab activity (i.e. not depend on the other members of their lab team to carry out procedures while passively watching).

Attendance Policy: DON'T BE LATE! The lab doors close promptly at 2:30 pm.

Excused absences will be given only if: you were seriously ill and have verifiable documentation from a physician, or you made arrangements prior to the class to attend a professional, religious, or family event (e.g., a family funeral). In any of these cases, you must notify the instructors in advance of the scheduled class (email, or call and leave a voice-mail message if you can do nothing else). Otherwise, you will receive a zero (0) for that day's participation grade. **Two or more unexcused absences will result in a reduction of the final grade by one letter grade! Coming to lab late or leaving lab early will also count as an absence.**

STUDENTS SHOULD PRINT OUT "LAB HANDOUTS" AND BRING TO CLASS ON THE DAYS THEY ARE TO BE USED (these are posted on the course eLearning web site and will NOT be provided by the instructor)

Lab Schedule and Due Dates

Week of	Class Topic	Reading	Due
Aug 22	Orientation/Course Introduction What is plagiarism?	Syllabus (posted online) Handouts	
Aug 29	Introduction to Neuroanatomy/ Sheep Brain Dissections	PPTs Posted Lab Handout	
Sep 5	Sheep Brain Dissections	Lab Handout	
Sep 12	Exam 1 Neuroanatomy Human Brain Viewing (Instructor) Experimental design Scientific Writing	Power Point	Online Training
Sep 19	Scientific Writing Animal Handling Introduction to Behavioral Pharmacology	Discuss Assigned papers Lab Handout Lab Handout	Immunization and OHP
Sep 26	Experiment 1: Behavioral Pharmacology- Open-Field (OF)		
Oct 3	Scientific Writing- Use and Misuse of English, and Avoiding Jargon In-Class Discussion Q&A over OF Experiment/Draft Issues		Exp. 1 (OF) Draft Due (by midnight)
Oct 10	In-Class Discussion Q&A over Drafts Introduction to Arousal Systems and Memory Experiment	Lab Handout	(drafts returned)
Oct 17	Experiment II: part 1 Behavioral Pharmacology- Arousal Systems and Memory/Inhibitory Avoidance (Training Latencies)	Lab Handout	Exp. 1 (OF) Final Paper Due (by midnight)
Oct 24	Experiment II: part 2 Arousal Systems and Memory/Inhibitory Avoidance (Retention Latencies)	Lab Handout	
Oct 31	Exam II Open-Field and Inhibitory Avoidance Experiments Introduction to Neurophysiology		Exp. 2 (IA) Draft Due (by midnight)
Nov 7	Sciatic Nerve Recording	Lab Handout	(drafts returned)
Nov 14	PhysioEx 8.0(CD) (SFN Meeting Nov 12-16)	Lab Handout	
Nov 21	No labs (Thanksgiving)		
Nov 28	Exam 3 Sciatic Nerve Recording/PhysioEx		Exp. 2 IA Final Paper Due (by midnight)
Dec 5	No Classes (Wed. Dec 7 Last Day of School)		
Dec 12	Finals (Fri 9th - Thu 15th)		

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.

UT Dallas Syllabus Policies and Procedures

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

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