

# Course Syllabus

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## Course Information

<i>Course Number/Section</i>	NSC 4353 Sections .002 (Wed), .003 (Thu), .005 (Fri)
<i>Course Title</i>	Neuroscience Laboratory Methods
<i>Term</i>	Spring 2013
<i>Days &amp; Times</i>	Green Hall 4.708 2:30–6:45 PM

## Professor Contact Information

<i>Professor</i>	Dr. Steve McWilliams
<i>Office Phone</i>	972-883-6785
<i>Email Address</i>	<b>course-related communication, email must be sent through elearning. I am the 'section instructor'</b>
<i>Office Location</i>	GR 4.304
<i>Office Hours</i>	Wednesdays and Thursdays 1:00-2:00
<i>Other Information</i>	Course Web Site: UTD eLearning

## Teaching Assistants

### Wednesday Lab Section 002

Erica Underwood	Office: GR 4.708
1:30-2:30 -or- by appointment	E-mail: elu081000@utdallas.edu

### Thursday Lab Section 003

Roopa Holenhonnor Sudarshan	Office: GR 4.708
1:30-2:30 -or- by appointment	E-mail: rxh109120@utdallas.edu

### Friday Lab Section 005

Michael Borland	Office: GR 4.708
1:30-2:30 -or- by appointment	E-mail: msb083000@utdallas.edu

## 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, 6<sup>th</sup> or 7<sup>th</sup> 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 USING TURNITIN VIA THE COURSE WEBSITE (eLearning). You must also bring a hard (print) copy to lab on the date due.**

## Grading Policy

**Exams (30% of grade):** neuroanatomy (10%), the second exam neurophysiology (10%), and the third exam (10%).

**Lab Reports (60% of grade):** 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 due date using turnitin via the course website (eLearning)**

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.

**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.**

Final Grades: A (90–100), B (80–89), C (70–79), D (50–69), F ( $\leq 49$ ).

## 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)

Week	Class Topic	Reading	Due
Jan 14	Orientation (online certification and tetanus shot) / Writing requirements of the course / What is Scientific Writing / What is Plagiarism and Collusion	Handout on Plagiarism Day&Gastel Ch. 1 Day&Gastel Ch. 4	
Jan 21	<b>No class on Monday</b> Introduction to Neuroanatomy / Human brain dissection / Sheep brain dissections	Lab Handout	
Jan 28	Introduction to Neuroanatomy / Sheep brain dissections	Lab Handout	<b>Online certification</b>
Feb 4	<b>Exam 1 Neuroanatomy</b> (human & sheep brain) <b>Article Introduction</b> How to Write the Materials and Methods/ How to Write the Results	Journal article- posted on eLearning Day&Gastel Ch. 11 Day&Gastel Ch. 12	
Feb 11	Introduction to electrophysiology / PhysioEx 8.0(CD)	Lab Handout I PhysioEx 8.0 Handout	
Feb 18	<b>Experiment 1: Sciatic Nerve Recording</b>	Lab Handout II	<b>Tetanus shot record</b>
Feb 25	<b>Exam 2 Physiology</b> (over experiment 1) <b>Article Discussion</b> How to Write the Abstract How to Write the Introduction How to Write the Discussion	Day&Gastel Ch. 9 Day&Gastel Ch. 10 Day&Gastel Ch. 13	<b>Exp. 1 Lab Report Draft</b> ( <i>Methods and Results only</i> )- <b>In class feedback of draft</b>
Mar 4	Animal handling and ethics in animal research <b>Experiment 2: Behavioral Pharmacology</b>	Lab Handout	<b>Exp. 1 Lab Report Due</b> ( <i>Methods and Results</i> )
Mar 11	<b>No class (Spring Break)</b>		
Mar 18	Experimental Design/Hypothesis testing/ t-Test/ Creating a bar graph in Excel/ Error bars	Lab Handout	<b>Exp. 2 Lab Report Draft- In class feedback of draft</b>
Mar 25	Follow-up discussion on Behavioral Pharmacology/ Animal handling/ Introduction to Arousal Systems and Memory	Lab Handout	
Apr 1	<b>Experiment 3.A: Arousal Systems and Memory</b> -- Training	Lab Handout	<b>Exp. 2 Lab Report Due</b>
Apr 8	<b>Experiment 3.B: Arousal Systems and Memory</b> – Retention test	Lab Handout	
Apr 15	<b>Exam 3 Behavioral</b> (over experiments 2 & 3)		
Apr 22	-Open lab-		<b>Exp 3 Lab Report Due</b>
Apr 29	<b>Last week of school</b>		

## 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.

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