

## Course Syllabus

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### Course Information

<i>Course Number/Section</i>	NSC 4353 Sections .004 (Mon), .003 (Tue), .001 (Wed)
<i>Course Title</i>	Neuroscience Laboratory Methods
<i>Term</i>	fall 2012
<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>	972-883-2355
<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>	TBA
<i>Other Information</i>	Course Web Site: UTD eLearning

### Teaching Assistants

#### Monday Lab Section 004

Erica Underwood	Office: GR 4.708
By appointment	E-mail: elu081000@utdallas.edu
Amanda Alvarez Dieppa	Office: GR 4.708
By appointment	E-mail: axa123630@utdallas.edu

#### Tuesday Lab Section 003

Vivek Jeevakumar	Office: GR 4.708
1:30-2:30 -or- by appointment	E-mail: vxj090020@utdallas.edu

#### Wednesday Lab Section 001

Wei Hu	Office: GR 4.708
1:30-2:30 -or- by appointment	E-mail: wxh090020@utdallas.edu
Roopa Holenhonor Sudarshan	Office: GR 4.708
1:30-2:30 -or- by appointment	E-mail: rxh109120@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, 6th edition.
- Stanton Glantz, A Primer of Biostatistics, sixth edition.
- 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 experiments 2 and 3.

**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)**

**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	
Aug 27	Orientation (online certification and tetanus shot)/ Writing requirements of the course/ What is Scientific Writing/ Article Introduction/ What is Plagiarism and Collusion	Handout on Plagiarism Journal article- posted on eLearning Day&Gastel Ch. 1 Day&Gastel Ch. 4	
Sep 3	<b>No class on Monday (Labor Day)</b> Introduction to Neuroanatomy/ Sheep brain dissections	Lab Handout	
Sep 10	Sheep brain dissections	Lab Handout	<b>Online certification</b>
Sep 17	<b>Exam 1 Neuroanatomy</b> (sheep brain) How to Write the Materials and Methods/ How to Write the Results	Day&Gastel Ch. 11 Day&Gastel Ch. 12	
Sep 24	PhysioEx 8.0(CD) / Introduction to electrophysiology/ DEMO recording	PhysioEx 8.0 Handout Lab Handout I	
Oct 1	<b>Experiment 1:</b> Sciatic Nerve Recording	Lab Handout II	<b>Tetanus shot record</b>
Oct 8	<b>Exam 2</b> (Sciatic Nerve Recording) Animal handling and Ethics in animal research		<b>Exp. 1 Lab Report 1<sup>st</sup> draft (Methods and Results only)</b>
Oct 15	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	
Oct 22	<b>Experiment 2:</b> Behavioral Pharmacology	Lab Handout	<b>Exp. 1 Lab Report Due (Methods and Results)</b>
Oct 29	<b>Experiment 3.A:</b> Arousal Systems and Memory -- Training	Lab Handout	<b>Exp. 2 Lab Report 1<sup>st</sup> draft</b>
Nov 5	<b>Experiment 3.B:</b> Arousal Systems and Memory – Retention test	Lab Handout	
Nov 12	<b>Exam 3</b> (experiments 2 & 3)		<b>Exp. 2 Lab Report Due</b>
Nov 19	<b>No class (Thanksgiving)</b>		
Nov 26	PhysioEx 9.0(CD)		
Dec 3	How to Present a Paper Orally	Day&Gastel Ch. 27	
Dec 10	<b>-TBA-</b>		<b>Exp 3 Lab Report Due</b>

## 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 state 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!**

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!**

## 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.***