

## Course Syllabus

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### Course Information

<i>Course Number/Section</i>	NSC 4353 Sections Mon (104), Tue (103), Wed (101), Thr (102)
<i>Course Title</i>	Neuroscience Laboratory Methods
<i>Term</i>	Fall 2016
<i>Days &amp; Times</i>	Green Hall 4.708 2:30–5:30 PM

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### Professor Contact Information

<i>Professor</i>	Dr. Steve McWilliams
<i>Office Phone</i>	972-883-6785 (do <b>NOT</b> leave messages)
<i>Email Address</i>	<b>ALL course-related communication via email must be sent through eLearning/official UTD email- I am the 'section instructor'</b>
<i>Office Location</i>	GR 4.714
<i>Office Hours</i>	MTWR 12:30-1:30 or by appointment
<i>Other Information</i>	Course Web Site: UTD eLearning

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### Teaching Assistants

#### Monday Lab Section 104

Stephanie Shiers	Office: GR 4.708
1:30-2:30 -or- by appointment	E-mail: sis150030@utdallas.edu

Natalia Lucia dos Santos	Office: GR 4.708
1:30-2:30 -or- by appointment	E-mail: nxd160630@utdallas.edu

#### Tuesday Lab Section 103

Jacob Lackovic	Office: GR 4.708
1:30-2:30 -or- by appointment	E-mail: jxl152930@utdallas.edu

#### Wednesday Lab Section 101

Jamie Moy	Office: GR 4.708
1:30-2:30 -or- by appointment	E-mail: jkm140330@utdallas.edu

#### Thursday Lab Section 102

Carolina Burgos Vega	Office: GR 4.708
1:30-2:30 -or- by appointment	E-mail: ccb140530@utdallas.edu

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

NSC 3361 (Behavioral Neuroscience) and either NSC 4352 (Cellular Neuroscience) or NSC 4356 (Neurophysiology). College level writing skills are strongly recommended.

### Course Description

This laboratory course is designed to introduce students to scientific writing as used in many scientific

journal publications and to expose students to some of the various methods used in the field of neuroscience research. Students will carry out experiments, research existing literature related to such experiments, and write up their data in a scientific journal-style paper, similar to that found in a scientific journal. The course fulfills the advanced writing requirement for Neuroscience majors.

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### **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.
- Other readings on **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.

### **Suggested Textbooks (But not required!)**

- Cargill and O'Connor, *Writing Scientific Research Articles*, 2<sup>nd</sup> edition.
  - Hofmann, *Writing in the Biological Sciences, A Comprehensive Resource for Scientific Communication*
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### **Assignments**

**Exams:** Students will complete three exams- The first exam covers neuroanatomy and includes fill-in-the-blank, multiple-choice, and true/false questions. The second exam is an essay- type short-answer exam covering both the open-field experiment and the inhibitory avoidance experiment. The third exam is an essay-type short-answer exam covering neurophysiology.

**Papers:** Students will complete four scientific publication- style journal papers. This will include a draft and a final revised version of the draft for each of the two experiments. Since revision is such a critical part of writing, students will submit an initial draft for each paper as a way of getting feedback on their writing. This is designed to help students in the writing process. Each paper should include a title, abstract, introduction, materials and methods, results, discussion, and published references. Students should expect to write a minimum of 15 pages cumulative for the two papers with a minimum of 5 pages of revision. However, students often end up writing more than 15 pages by the end of the course.

Students will submit a typed copy of every assigned paper electronically via email directly to the TA for grading and revision on the day due. Once papers are revised, graded, and grades are posted, they will be returned via email. In addition to submitting papers electronically via email, both final/revised versions **MUST** be submitted to Turnitin.

**ALL PAPERS MUST BE TYPED AND TURNED IN BY THE DUE DATE. FINAL VERSIONS MUST ALSO BE SUBMITTED USING TURNITIN VIA THE COURSE WEBSITE (eLearning) BY THE DATE DUE.**

SEE BELOW REGARDING POLICY ON GRADING.

SEE BELOW REGARDING POLICY ON LATE WORK.

SEE BELOW REGARDING POLICY ON TURNITIN SUBMISSION.

SEE BELOW REGARDING UTD POLICY ON PLAGIARISM.

SEE BELOW FOR LAB SCHEDULE AND DUE DATES.

NO EXTRA CREDIT WORK OF ANY KIND WILL BE GIVEN.

*Students should expect to spend a good amount of time with the writing process of the course as this type of writing is typically time consuming for most individuals. As such, students should allow themselves enough time to complete and correct their papers prior to the due dates!*

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## **Grading Policy**

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

**Lab Reports (60% of grade):** The first draft (covering the open-field experiment) is worth 5% and the second draft (covering the inhibitory-avoidance experiment) is worth 10% of your final course grade. The final revised OF paper is worth 20% and the final revised IA paper is worth 25% of your final course grade. Scientific writing is an acquired skill that is learned through much writing and revision. Therefore, as students progress along the writing process, grades based on writing become increasingly weighted. Student papers are assigned a grade based on a grading rubric posted on eLearning and available to students. The grading rubric details all aspects of the paper as well as possible point deductions. Papers are graded for formatting, grammar, comprehension, and content. **Papers MUST be typed- papers that are not typed will not be accepted or graded.**

SEE BELOW FOR POLICIES CONCERNING LATE WORK.

SEE BELOW REGARDING POLICY ON TURNITIN SUBMISSION.

**Participation/Attendance (10% of grade):** Attendance and class participation is worth 10% of your final course grade.

SEE BELOW FOR POLICIES CONCERNING ATTENDANCE.

**Final Grades:** The plus/minus grading system is used in this course. A+ (97–100), A (94<97), A- (90<94), B+ (87<90), B (84<87), B- (80<84), C+ (77<80), C (74<77), C- (70<74), D+ (67<70), D (64<67), D- (60<64), F (< 60).

## Course Policies

**Make-up exams:** Make-up exams are at the discretion of the professor. However, exam one covering neuroanatomy cannot be rescheduled.

**Late Work:** All papers are due on the dates listed below, unless pre-approved by the instructor.

**DRAFTS NOT TURNED IN BY THE DUE DATE WILL NOT BE REVIEWED OR GRADED. FINAL VERSIONS NOT TURNED IN BY THE DUE DATE WILL BE DEDUCTED ONE LETTER GRADE FOR EVERY DAY LATE (INCLUDING WEEKENDS). FINAL VERSIONS NOT SUBMITTED TO TURNITIN BY THE DATE DUE, WILL BE DEDUCTED ONE LETTER GRADE.**

**Students insisting they submitted a paper despite the fact that Turnitin shows no submission MUST provide a hard copy of the “digital receipt” that is displayed when submitting a paper as proof of submission.**

**Class Attendance:** Students are expected to attend all lab classes on time. Lab doors open at 2:30- **DON'T BE LATE!** Students are responsible for completing all assigned readings BEFORE coming to class. Excused absences are at the discretion of the instructor. If you know you will miss a class you must notify the instructor in advance of the scheduled class. Two or more unexcused absences will result in a reduction of the final course grade by one letter grade! Coming to lab late or leaving lab early repeatedly will also count as an absence. Students coming to lab late on exam days MUST finish the exam at the same time the class is finished. Late students will NOT be allowed extra time to finish an exam unless approved by the instructor.

**YOU ARE NOT ALLOWED TO ATTEND ANOTHER LAB SECTION WITHOUT PRIOR APPROVAL FROM BOTH INSTRUCTORS!**

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## 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). Other than group data, students are NOT allowed to work together and should NOT share their writing with another student. Each student is expected to write his or her on paper. This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective. All suspected forms of cheating, collusion, and plagiarism will be turned over to Judicial Affairs according to UTD policy.

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.***

### Lab Schedule and Due Dates

Week of	Class Topic	Reading	Due
Aug 22	Orientation/Course Introduction What is plagiarism?	Syllabus (posted online) Handout	
Aug 29	What is Scientific Writing and What is a Scientific Paper (AIMRD) Introduction to Neuroanatomy/ Sheep Brain Dissections	Day&Gastel Chpts.1 & 4  PPTs Posted Lab Handout	
Sep 5	<b>No class on Monday (Labor Day)</b> Sheep Brain Dissections	Lab Handout	
Sep 12	<b>Exam 1</b> Neuroanatomy Human Brain Viewing (Instructor) Scientific Writing- Methods and Results Journal Review/Literature Search	Day&Gastel Chpts.11 & 12	<b>Online Training</b>
Sep 19	Scientific Writing- Introduction, and Discussion/Journal Review Animal Handling Introduction to Behavioral Pharmacology	Day&Gastel Chpts. 10 and 13  Lab Handout	<b>Immunization and OHP</b>
Sep 26	Scientific Writing- Title, Abstract, and References <b>Experiment 1:</b> Behavioral Pharmacology- Open-Field (OF)	Day&Gastel Chpts. 7, 9, and 15 Lab Handout	
Oct 3	Scientific Writing- Use and Misuse of English, and Avoiding Jargon In-Class Discussion Q&A over OF Experiment/Draft Issues Histology	Day&Gastel Chpts. 30 and 31	<b>Exp. 1 (OF) Draft Due (by midnight)</b>
Oct 10	In-Class Discussion Q&A over Drafts Introduction to Arousal Systems and Memory Experiment Histology	Lab Handout	<b>(drafts returned)</b>
Oct 17	<b>Experiment II: part 1</b> Behavioral Pharmacology- Arousal Systems and Memory/Inhibitory Avoidance (Training Latencies)	Lab Handout	<b>Exp. 1 (OF) Final Paper Due (by midnight)</b>
Oct 24	<b>Experiment II: part 2</b> Arousal Systems and Memory/Inhibitory Avoidance (Retention Latencies)	Lab Handout	
Oct 31	<b>Exam II</b> Open-Field and Inhibitory Avoidance Experiments Introduction to Neurophysiology		<b>Exp. 2 (IA) Draft Due (by midnight)</b>
Nov 7	Sciatic Nerve Recording	Lab Handout	<b>(drafts returned)</b>
Nov 14	PhysioEx 8.0(CD) (SFN Meeting Nov 12-16)	Lab Handout	
Nov 21	<b>No labs (Thanksgiving)</b>		
Nov 28	<b>Exam 3</b> Sciatic Nerve Recording/PhysioEx		<b>Exp. 2 IA Final Paper Due (by midnight)</b>
Dec 5	<b>No Classes (Wed. Dec 7 Last Day of School)</b>		
Dec 12	<b>Finals (Fri 9th - Thu 15th)</b>		