Drug Addiction

NROD66H3

(Friday 10:00-12:00 pm; BV361)

Instructor: Suzanne Erb
Office: SW-531
Office hours: Tues 1-3 pm
E-mail: erb@utsc.utoronto.ca

COURSE DESCRIPTION

This course is designed to provide an overview of current topics in the field of drug addiction research, with a specific focus on the major phases of the addiction cycle, including drug use (intoxication), withdrawal, and relapse. Consideration will be given to what basic motivational and corresponding neurobiological processes influence behavior during the various phases of the addiction cycle, by examining the empirical findings within the context of some of the major theoretical models guiding the field. A series of seminars, led by students, will highlight recent and exciting advances in the field, and will emphasize complimentary work carried out in human subjects and laboratory animals. In addition to leading a seminar, students will develop a research proposal based on their seminar topic. These two assignments are intended to provide students with the opportunity to engage in an in-depth exploration and critical analysis of a relevant topic in the field of addiction research, and to consider the implications of the literature for future research.

SUMMARY OF COURSE COMPONENTS AND EVALUATION

<table>
<thead>
<tr>
<th>Component</th>
<th>Percent of final grade</th>
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<tbody>
<tr>
<td>Mid-term test</td>
<td>20</td>
</tr>
<tr>
<td>Seminar</td>
<td>20</td>
</tr>
<tr>
<td>Thought papers</td>
<td>10 x 2 = 20</td>
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<tr>
<td>Class participation</td>
<td>10</td>
</tr>
<tr>
<td>Research Proposal</td>
<td>30</td>
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Note: Information on individual course components are provided at the end of this document.
SUMMARY OF IMPORTANT DATES

Sept 23
Submit requests (top 3 choices) for seminar dates/topics in class.

Oct 7
Article selection for seminar presentations during class. Students are required to search for articles in advance of class, and to bring a selected article that they would like to present on plus one to two alternative articles to class.

Oct 14
Mid-term test. The test will be written during class time.

Nov 4
Thought Paper 1 due at start of class. Late papers will incur a penalty of 5% per day late.

Nov 25
Thought Paper 2 due at start of class. Late papers will incur a penalty of 5% per day late.

Dec 1
Research Proposals due (4:30 pm in Prof Erb’s office. Late papers will not be accepted).
### SCHEDULE OF LECTURES/SEMINARS

<table>
<thead>
<tr>
<th>Week 1</th>
<th>INTRODUCTION AND OVERVIEW</th>
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<tbody>
<tr>
<td>Sept 9</td>
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<tr>
<th>Week 2</th>
<th>LECTURE</th>
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<tbody>
<tr>
<td>Sept 16</td>
<td>The reinstatement procedure: A model of relapse that encompasses the cycle of addiction</td>
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<tr>
<th>Week 3</th>
<th>LECTURE (Hour 1)</th>
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<tbody>
<tr>
<td>Sept 23</td>
<td>Two contrasting theories of addiction</td>
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**SMALL GROUP DISCUSSION (Hour 2)**
Discussion will be based on a series of questions related to the assigned readings that will be given in advance of class.

<table>
<thead>
<tr>
<th>Week 4</th>
<th>CLASS DISCUSSION (Hour 1)</th>
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<tbody>
<tr>
<td>Sept 30</td>
<td>This discussion will be a continuation of the small group discussions from Week 3.</td>
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**LECTURE (Hour 2)**
Guidelines for seminars and research proposal assignment

<table>
<thead>
<tr>
<th>Week 5</th>
<th>GROUP MEETINGS FOR SEMINARS</th>
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<tbody>
<tr>
<td>Oct 7</td>
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<table>
<thead>
<tr>
<th>Week 6</th>
<th>MID-TERM TEST</th>
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<tbody>
<tr>
<td>Oct 14</td>
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<table>
<thead>
<tr>
<th>Week 7</th>
<th>STUDENT SEMINARS</th>
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<tbody>
<tr>
<td>Oct 21</td>
<td>Laboratory studies of drug craving: A focus on human studies of stress- and cue-induced craving</td>
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<tr>
<th>Week 8</th>
<th>STUDENT SEMINARS</th>
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<tr>
<td>Oct 28</td>
<td>Studies of drug craving induced by pharmacological stress: Comparative analysis of approaches in humans and laboratory animals</td>
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<tr>
<th>Week 9</th>
<th>STUDENT SEMINARS</th>
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<tr>
<td>Nov 4</td>
<td>The “incubation” phenomenon: Animal studies of the effects of passage of time after drug withdrawal on indices of drug craving</td>
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<tr>
<th>Week 10</th>
<th>STUDENT SEMINARS</th>
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<tr>
<td>Nov 11</td>
<td>Context and drug seeking: Animal studies of the role of context in precipitating relapse to drug seeking</td>
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**ASSIGNED READINGS**

**Week 2**
Sept 16

**Week 3 and 4**
Sept 23/30


**Week 7**
Oct 21

**Week 8**
Oct 28

**Week 9**
Nov 4

**Week 10**
Nov 11
**Week 11**

**Nov 18**  

**Week 12**

**Nov 25**  

**DESCRIPTION OF COURSE COMPONENTS**

**MID-TERM TEST**

20% of final grade

The mid-term test will consist of short answer and/or essay style questions based on the lecture material and assigned readings from the first 4 classes.

**SEMINAR**

20% of final grade

**Scheduling**

Each student will make a 20 minute presentation on an article from the primary literature that relates to one of the 6 topics (and related assigned review article) scheduled for Weeks 7 through 12 (Oct 21-Nov 25) of the course. Approximately 4 students will present each week. During class on Week 3 (Sept 23), students will submit a first, second, and third choice for which seminar week (and corresponding topic) they wish to present on. By Week 4 (Sept 30), seminar assignments will be posted on the intranet.

**Content**

Each student will select one article from the primary literature to present on. The article must be recent (published within the past 5 years) and related to a key idea in the corresponding review article assigned for that week. Meetings with members of each seminar group are scheduled for Week 5 (Oct 7) of class in order to ensure that the selected articles are relevant and that each student in a group is presenting on a different article. Thus, each student should bring several articles that are of interest to them; Prof Erb will provide final approval on the selections during this class.

Each presentation should provide an overview of the background (including research question and hypotheses), methods, results, and discussion of the findings pertinent to the article. In addition, it should be made clear how the article relates to the ideas presented in the corresponding review article assigned for that week.

The citations for all articles to be presented in a given week will be posted on-line in advance.
THOUGHT PAPERS  

20% of final grade  
(10% per paper)

For 2 of the 6 seminar topics, students will be required to write a “thought” paper of no more than 500 words (or 2 type-written, double-spaced pages), describing one central idea, theme, problem, or question that relates to the review article assigned for that topic, and collection of articles from the primary literature presented on. Students may select any 2 topics to write on, except that:

1. Students may not select the topic they are presenting on.

2. At least one of the two papers must be selected from the first 3 topics.

The first thought paper is due at Nov 4; the second thought paper is due Nov 25. **Electronic submissions will not be accepted; late papers will incur a penalty of 5% per day late.**

CLASS PARTICIPATION  

10% of final grade

Students will be graded for attendance and participation in class discussion. A major factor in this component of the evaluation will be the quality of participation; students’ contributions should reflect a good level of familiarity with and comprehension of assigned readings.

RESEARCH PROPOSAL  

30% of final grade

Students will write a research proposal, based on a question that clearly emerges from their seminar topic. More information about the research proposal will be provided in class on Sept 30.

Evaluation of the research proposal will be based on the originality and quality of the research question/s, identification and synthesis of the relevant literature (including scope and currency of the literature review), appropriateness and feasibility of the proposed experiment/s (including experimental design), and general stylistic and formatting considerations. Students are strongly encouraged to meet with Professor Erb during office hours (or by appointment) to obtain guidance in the development of proposals.

Final proposals should follow the stylistic guidelines for the Journal of Neuroscience (more information on this will be provided in class Sept 30) and include the following section headings and corresponding content:
Title page

Abstract (maximum 250 words or 1 double-spaced page)

The abstract should provide a brief overview of your proposal, including brief statements of background/rationale, objectives and hypotheses, methods, and predicted results.

Introduction (maximum 1000 words or 4 double-spaced pages)

This section should provide a brief review and synthesis of the relevant literature, with the key objective of developing the rationale for the proposed experiment/s. The section should conclude with clear statements about your research objectives and hypotheses. A minimum of 10 articles from the primary literature must be included in your literature review; the majority of these articles (at least 6) must have been published in the last 5 years.

Methods (maximum 750 words or 3 double-spaced pages)

This section should be written in the future tense and include relevant subsections (e.g., subjects, drugs, apparatus, procedures, etc). It should include a very clear description of your research design, including the nature and number of experimental groups and how many subjects will be included in each group.

Results (maximum 500 words or 2 double-spaced page)

Your results section should provide a succinct description of what you anticipate your experimental findings to be (you are not required to discuss methods of statistical analysis, although you may choose to do so). Do not include graphs with hypothetical data; rather, describe in words the specific differences in the direction of the dependent measure(s) that you expect to observe between experimental groups.

References (no restrictions but must be formatted according to the Journal of Neuroscience)

Papers are due Thurs December 1 (last day of classes, UTSC), 4:30 pm, in Professor Erb’s office. Late or electronic submissions will not be accepted.