Neurobiology
Course Manual

FIGURE 14.11 The "Dictionary" in the Brain
The Communicating Brain

BIOL 417O/617 (3 credits)
University of Alaska Fairbanks
Fall 2017
Abel Bult-Ito
# Table of Contents

Title Page 1

Table of Contents 2

Part I: Syllabus

1. Description of Neurobiology 3
2. Course Requirements 6

Part II: General Course Information

3. Outline of Lecture Topics, Required Reading Assignments, Partial Exams, Student Presentations, Written Review Paper, and the Final Exam 10
4. Dates of Lectures, Partial Exams, Student Presentations, Written Review Paper, and Final Exam 12
5. How to Get the Most Out of the Course 13
6. How to Get Information on Human Anatomy & Physiology I 13
7. Students' Rights and Responsibilities 14
8. Copy Right 15
Part I: Syllabus

1. Description of Neurobiology

Welcome to Neurobiology! During this semester, we are going to explore the organization and function of the human nervous system from the subcellular to the organismal level. We will focus on how the nervous system regulates behaviors. Basic neuroscience research will be applied to pathological conditions with reference to aberrant as well as normal function. You will develop an in-depth knowledge of one human behavior by researching the neuroscience primary literature. This course will incorporate lectures and student oral presentations of neuroscience primary literature (and lecture material) into a dynamic class atmosphere.

The learning objectives of this course are to understand the following behavioral neuroscience concepts:
1. Neurons are the building blocks of the central and peripheral nervous systems, the structure and function of a neuron, and signaling within and between neurons.
2. The integration of many input signals, levels of association of information, and output signals result in complex behaviors, including perception, control of movement, sleep and biological rhythms, reproductive behavior, emotion, ingestive behavior, language, learning and memory, human communication, neurological disorders, schizophrenia and the affective disorders, anxiety disorders, autistic disorders, attention deficit/hyperactivity disorder, and stress disorders, and drug abuse.

Additional learning objective are:
3. Fulfill the Core Oral Intensive Designator for BIOL 417O.
4. Science is a collaborative enterprise and therefore being able to successfully work together is an important skill. You will work in groups of four to discuss lecture materials, to present a review topic in behavioral neuroscience, and to write a review paper describing this topic.

We will use a variety of approaches to understand these concepts and achieve the learning outcomes:
1. Lecture and discussion. In lecture, we will talk about the basic concepts in neurobiology. An important source for this information is from the main text for this course: *Physiology of Behavior* by Neil R Carlson, 2016, 12th Edition, Pearson, New York. Quizzes will test your knowledge of the lecture material. The material in this textbook will be discussed during the first half of the semester.

The format of the 90-minute lectures will be as follows:
a. You prepare for the day’s content ahead of time by doing the assigned readings.
b. You watch a short video and/or read additional materials that describe the key concepts before class, including PowerPoint presentations.
c. You discuss the content with your peers and explain these concepts to them until everyone in your group has a full understanding.
d. You organize the content into flow diagrams, schematics, or tables with your
group and present these to the class.
e. I will be available for guidance, clear up misconceptions, and answer questions.
f. I will not do traditional lecturing. Instead we will engage in active learning strategies, such as described in c. and d. above.

2. **Student-led lectures.** In my experience, the presentation of lecture material by students is one of the best learning tools for the presenters as well as the listeners. BIOL 617 students will be asked to give one 90-minute flipped classroom lecture and they will use the same lecture format as explained above.

3. **Student oral presentations on a review topic in behavioral neuroscience.** To summarize and incorporate information from many different sources into a comprehensive understanding of the material is another important skill of any scientist. During the second half of the term, BIOL 417 students will present orally, with three other classmates, a review on a topic in behavioral neuroscience of their choice. Each group has to choose a different behavior.

BIOL 617 students will work by themselves regarding the review topic. However, they will be assigned to a group for lecture discussions. This group is also encouraged to assist each other with the presentations and writing of the review paper (see below).

4. **A written review paper on the topic in behavioral neuroscience.** Publishing results of scientific research more often than not is a collaborative endeavor. Therefore, being able to successfully work together on a written assignment is a requirement of this course. You will work with your group to write a review article on the topic in behavioral neuroscience you presented to the class.

This manual will act as your guide for this course. In it is a description of the course requirements, lecture topics, and reading assignments, as well as general information to help you get the most out of this class. You should bring it to each class and refer to it regularly throughout the semester.

Your minimal responsibilities for this course are defined in the Course Requirements section below. Be aware, however, that your performance on exams, oral presentations, and written assignments often depends on how well you integrate all of the different kinds of information you receive from lectures, discussions, reading assignments, observing and evaluating peer oral presentations, and your own literature review. Therefore, do not think of those assignments as separate entities but rather as parts of a jigsaw puzzle; together the complete concepts emerge.

**Instructor**
Abel Bult-Ito, Ph.D.
Professor of Neurobiology and Anatomy
Department of Biology & Wildlife
College of Natural Science and Mathematics
Office: Murie Building, Room 113F
Phone: 907-474-7158
E-mail: abultito@alaska.edu
Mailbox: Murie Building, Room 101 (Box 6100)
Office hours: Thursday 9-11am
Or by appointment

Course Meeting Times and Locations
Lectures: T, Th 2:00pm – 3:30pm
Lecture room: Murie Building, Room 107
Sections: F01; CRN 74221; BIOL 417O
F01; CRN 74233; BIOL 617
Blackboard Site: http://classes.uaf.edu
Pearson Web Site: www.pearsonhighered.com
www.mypsychlab.com

Disabilities Services
The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. We will closely work with the Office of Disabilities Services (208 Whitaker Building, 474-5655 or TTY at 474-1827; email: uaf-disabilityservices@alaska.edu) to provide reasonable accommodation to students with disabilities.

To ensure that everyone has equal opportunities to succeed in this course, please let me know if I need to accommodate any disabilities that you may have with assistance of Disability Services. Any information you provide will be held strictly confidential.

Notice of Nondiscrimination
The University of Alaska is an affirmative action/equal opportunity employer and educational institution. The University of Alaska does not discriminate on the basis of race, religion, color, national origin, citizenship, age, sex, physical or mental disability, status as a protected veteran, marital status, changes in marital status, pregnancy, childbirth or related medical conditions, parenthood, sexual orientation, gender identity, political affiliation or belief, genetic information, or other legally protected status. The University's commitment to nondiscrimination, including against sex discrimination, applies to students, employees, and applicants for admission and employment. Contact information, applicable laws, and complaint procedures are included on UA's statement of nondiscrimination available at www.alaska.edu/titleIXcompliance/nondiscrimination.

Support Services
Computer labs are available in 303 Irving I (please contact Biology and Wildlife Office to get access), MBS complex room 110, 319 Bunnell Building, and Rasmuson Library 404. You may be eligible for services from the Student Support Services, 514 Gruening Building, Phone: 474-6844, E-mail: trio.sss@alaska.edu, http://www.uaf.edu/sss/.
In preparing your oral presentations for this class, plan to use the UAF Speaking Center for coaching and practice. The Center is located in 507 Gruening Building. Please call 474-5470 for Speaking Center hours and to schedule an appointment. Walk-ins are welcome, but making an appointment is best.

**Electronics in the Classroom**
No electronics like iPods, music players, and alike are allowed in the classroom. Cell phones need to be turned off. Laptops, tablets, or iPads can only be used for note taking and that only in the front of the classroom. Any violation of this policy will result in confiscation of your electronic gadget without recourse.

**2. Course Requirements**

To do well in this course you must attend all class meetings. Your grade will be based on the following criteria:

<table>
<thead>
<tr>
<th></th>
<th>BIOL 417O</th>
<th>BIOL 617</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Three Partial Exams</td>
<td>24% (8% each)</td>
</tr>
<tr>
<td>2</td>
<td>Final Exam</td>
<td>8%</td>
</tr>
<tr>
<td>3</td>
<td>Class Participation</td>
<td>12% (0.5% each)</td>
</tr>
<tr>
<td>4</td>
<td>Oral Presentations</td>
<td>27% (9% each)</td>
</tr>
<tr>
<td>5</td>
<td>Final Review Paper</td>
<td>12%</td>
</tr>
<tr>
<td>6</td>
<td>Lecture</td>
<td>0%</td>
</tr>
<tr>
<td>7</td>
<td>Class preparation (Quizzes)</td>
<td>14% (1% each)</td>
</tr>
<tr>
<td>8</td>
<td>Diagnostic exams</td>
<td>3% (1.5% each)</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Three Partial Exams**
Three partial exams will be given (see course manual sections 3 and 5 for dates); 8% each of the final grade for BIOL 417 students and 7% each for BIOL 617 students. Exams will cover any material presented in all lecture meetings from the beginning of the course (exam 1) or since the last exam (exams 2-3). These materials include all assigned readings unless specified otherwise.

If you are not able to attend an exam, you must let me know in advance; at least four weeks in advance in a non-emergency situation and as soon as possible in an emergency situation (e.g., serious illness (doctor’s note required), death in the family). NO partial exam makeup will be offered.

**The Final Exam**
The final exam, 8% of the final grade for BIOL 417 students and 7% for BIOL 617 students, will be comprehensive. It will cover any material presented in all class meetings from the beginning of the course through lecture 18. These materials include all assigned readings unless specified otherwise.

If you are not able to attend the final exam on Thursday 15 December 2015, from 1-3
pm, you must let me know as soon as possible in advance; only emergency situations
(e.g., serious illness (doctor’s note required), and death in the family) will be considered.
So, having a plane ticket that has you depart before the final exam date is NOT a valid
reason and will NOT be considered. NO final exam makeup will be offered.

General Exam Information
While taking the exams you are not allowed to use any reference materials, calculators,
notes, or help from others. However, you are strongly encouraged to study for exams
with classmates and have a free exchange of information and ideas. Exams will be
returned in class or will be available in my office. Answer keys to all exams will be
posted on the BIOL 417O/617 Black Board site at http://classes.uaf.edu. I will try to
grade the exams within one week.

I urge you to read through your exam and bring to my attention any errors that I made in
totaling your points. I also encourage you to see me about a re-grade if you feel that I
have misgraded or misinterpreted your answer. Exams should be a learning exercise
for all of us. If you would like a re-grade you should return your test to me by following
this procedure:
1. Consult the exam key to see what I accepted for full credit.
2. Explain in writing why you are requesting a re-grade.
3. Give your exam and explanation to me no later than one week after the exams
   have been returned and the exam keys have been posted.

Class Participation
Attending lectures and actively engaging in the lecture material is crucial for successful
completion of this course. Class participation is worth 12% of the final grade or 0.5% per
lecture, not including exam days and lectures 23 and 24. Unexcused absences will
result in loss of class participation credit. Missed lectures cannot be made up. Only
legitimate absences will be considered for special consideration, such as a legitimate
non-emergency situation (e.g., out of town for UAF Athletics competitions) and as soon
as possible in a legitimate emergency situation (e.g., serious illness (doctor’s note
required), death in the family), and advance notice is required.

As you will be evaluating the presentations of you peers in the class in the latter half of
the semester, your presence is required. Both presenting materials you have
researched and evaluating other’s presentations represent excellent ways to improve
your own presentation skills.

Oral presentations
At a minimum, each BIOL 417 group member will present for 8 minutes, followed by up
to 3 minutes of questions and answers at least three times during the second half of the
semester. Each individual student will be evaluated on his or her presentation skills
(67% of grade). In addition, each group will be evaluated on how well the group
members worked together to provide a comprehensive presentation of their review topic
(33% of grade). The evaluation will be based on peer evaluation (40% of grade) and
instructor evaluation (60% of the grade), and each presentation is 9% of the final grade.
At a minimum, each BIOL 617 student will present for 15 minutes, followed by up to 5 minutes of questions and answers at least three times during the second half of the semester. The evaluation will be based on peer evaluation (30% of grade) and instructor evaluation (70% of the grade) and each presentation is 8% of the final grade.

In addition, each BIOL 617 student will give a 90-minute lecture following the general lecture format, which is 8% of the final grade.

**Written Review Paper on Topic in Behavioral Neuroscience**

You will write a review paper on a topic in behavioral neuroscience with your group members (BIOL 417), or alone (BIOL 617). This paper will minimally discuss the behavioral characteristics and/or symptoms of the behavior being reviewed, the neural networks that are involved in controlling the behavior, and the cellular/subcellular mechanisms that control the behavior. One grade will be given for the group and is 12% (BIOL 417) or 11% (BIOL 617) of the final grade.

The paper has to be at least 15 pages in length (double spaced; 1-inch margins; and 12-type font) excluding the title page, figures and tables, and the reference list. The review should be based on at least 30 peer-reviewed scientific journal articles. The paper is due no later than Monday 11 December 2017 at noon. The style of the paper should be based on that of a behavioral neuroscience peer-reviewed journal.

You will have four class periods on 26 September (Lecture 9), 16 October (Lecture 15), and 14 and 16 November 2017 (lectures 23 and 24) to work with your group on your review paper. A complete draft of the review paper is due on Monday at noon on 20 November, which will be 30% of your final review paper grade, or 3.6% of your final grade for BIOL 417O students and 3.3% of your final grade for BIOL 617 students. The 26 September and 16 October 2017 class periods will be in the classroom (Murie 107) and I will be present for guidance, answering questions, and suggestions. For the 14 and 16 November 2017 class periods, you may choose to work in Murie 107 or a place according to your group’s choice and I will not be available at these times.

**Class preparation**

This class will be taught in a different way than most of your classes. Specifically, I have adopted a “flipped classroom” paradigm. This means that the lecture/book materials are on Blackboard and in the textbook for you to access when/where you want. It also means that you will be responsible for reviewing materials before you come to class, which will be assessed with quizzes at the start of each lecture. Instead of a traditional lecture format, you will be engaging in active learning activities during class time, which has been shown to be more effective in your learning the course content. It is essential that you live up to your responsibilities and preview the assigned materials before coming to class. Consequently, coming to class prepared is 14% of your final grade, which will be assessed through short quizzes, which are each worth 1% of the final grade.
Grading
The class will be graded on a straight percentage basis:

- 97.0-100% is an A+
- 93.0-96.9% is an A
- 90.0-92.9 is an A-
- 87.0-89.9 is a B+
- 83.0-86.9 is a B
- 80.0-82.9% is a B-
- 77.0-79.9 a C+
- 73.0-76.9 is a C
- 70.0-72.9% is a C-
- 60.0-69.9% is a D
- < 60% is an F

I will not grade on a curve. This means that in principle everyone will be able to get an A in this course. Of course, everyone will also be able to get an F, but I am confident that you will work hard enough to avoid this scenario.

Note: Be aware that the grading scale above will be used without exception. Therefore, for example 89.9% will result in a final grade of B+ and 59.9% will result in a final grade of F. The 0.1% difference may seem like a small difference, but since it is based on 10-11 separate grades and 24 class participation and 16 class preparation credits, it truly reflects a level of performance that does not warrant a higher grade. Being on the right side of the cut-off is your responsibility!
### Part II: General Course Information

3. Outline of Lecture Topics, Required Reading Assignments, Partial Exams, Student Presentations, Written Review Paper, and the Final Exam
(Subject to Change)

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture #</th>
<th>Topic</th>
<th>Reading Assignments Carlson, 11th Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>08-29-17 T</td>
<td>1</td>
<td><strong>Diagnostic Exam 1</strong> Course Introduction; Structure and Function of Cells of the Nervous System</td>
<td><em>Surprise</em> This Manual Chapters 1 &amp; 2, p1-55</td>
</tr>
<tr>
<td>08-31-17 Th</td>
<td>2</td>
<td>Structure of the Nervous System; Psychopharmacology</td>
<td>Chapters 3 &amp; 4, p56-117</td>
</tr>
<tr>
<td>09-05-17 T</td>
<td>3</td>
<td>Methods and Strategies of Research; Vision</td>
<td>Chapters 5 &amp; 6, p118-187</td>
</tr>
<tr>
<td>09-07-17 Th</td>
<td>4</td>
<td>Audition, the Body Senses, and the Chemical Senses; Control of Movement</td>
<td>Chapter 7 &amp; 8, p188-260</td>
</tr>
<tr>
<td>09-12-17 T</td>
<td>5</td>
<td>Sleep and Biological Rhythms</td>
<td>Chapters 9, p261-295</td>
</tr>
<tr>
<td><strong>09-14-17 Th</strong></td>
<td>6</td>
<td><strong>Partial Exam 1</strong></td>
<td><strong>Chapters 1-6, p1-187</strong></td>
</tr>
<tr>
<td>09-19-17 T</td>
<td>7</td>
<td>Reproductive Behavior</td>
<td>Chapters 10, p296-329</td>
</tr>
<tr>
<td>09-21-17 Th</td>
<td>8</td>
<td>Emotion</td>
<td>Chapter 11, p330-365</td>
</tr>
<tr>
<td>09-26-17 T</td>
<td>9</td>
<td>Oral Presentation Skills Review Paper Preparation</td>
<td>Develop Topic and Do Literature Search</td>
</tr>
<tr>
<td>10-28-17 Th</td>
<td>10</td>
<td>Ingestive Behavior</td>
<td>Chapter 12, p366-404</td>
</tr>
<tr>
<td>10-03-17 T</td>
<td>11</td>
<td>Learning and Memory</td>
<td>Chapter 13, p405-445</td>
</tr>
<tr>
<td><strong>10-05-17 Th</strong></td>
<td>12</td>
<td><strong>Partial Exam 2</strong></td>
<td><strong>Chapters 7-12, p188-404</strong></td>
</tr>
<tr>
<td>10-10-17 T</td>
<td>13</td>
<td>Human Communication</td>
<td>Chapter 14, p446-480</td>
</tr>
<tr>
<td>10-12-17 Th</td>
<td>14</td>
<td>Neurological Disorders</td>
<td>Chapter 15, p481-518</td>
</tr>
<tr>
<td>10-17-17 T</td>
<td>15</td>
<td>Review Paper Preparation</td>
<td>Further Develop Topic and Do Literature Search</td>
</tr>
<tr>
<td>10-19-17 Th</td>
<td>16</td>
<td>Schizophrenia and the Affective Disorders</td>
<td>Chapter 16, p519-551</td>
</tr>
<tr>
<td>Date</td>
<td>Lecture #</td>
<td>Topic</td>
<td>Reading Assignments Carlson, 11th Edition</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
<td>------------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>10-24-17 T</td>
<td>17</td>
<td>Stress, Anxiety, and Neurodevelopmental Disorders</td>
<td>Chapter 17, p552-587</td>
</tr>
<tr>
<td>10-26-17 Th</td>
<td>18</td>
<td>Drug Abuse</td>
<td>Chapter 18, p588-618</td>
</tr>
<tr>
<td>10-31-17 T</td>
<td>19</td>
<td>Partial Exam 3</td>
<td>Chapters 13-18, p405-618</td>
</tr>
<tr>
<td>11-02-17 Th</td>
<td>20</td>
<td>Student Presentations</td>
<td>Work on Literature Review and Oral Presentation</td>
</tr>
<tr>
<td>11-07-17 T</td>
<td>21</td>
<td>Student Presentations</td>
<td>Work on Literature Review and Oral Presentation</td>
</tr>
<tr>
<td>11-09-17 Th</td>
<td>22</td>
<td>Student Presentations</td>
<td>Work on Literature Review and Oral Presentation</td>
</tr>
<tr>
<td>11-14-17 T</td>
<td>23</td>
<td>Work on Written Paper</td>
<td>Work on Literature Review and Oral Presentation</td>
</tr>
<tr>
<td>11-16-17 Th</td>
<td>24</td>
<td>Work on Written Paper</td>
<td>Work on Literature Review and Oral Presentation</td>
</tr>
<tr>
<td>11-20-17 M</td>
<td>-</td>
<td>Complete Draft of Review Paper</td>
<td>Due at Noon</td>
</tr>
<tr>
<td>11-21-17 T</td>
<td>25</td>
<td>Student Presentations</td>
<td>Work on Literature Review and Oral Presentation</td>
</tr>
<tr>
<td>11-23-17 Th</td>
<td>-</td>
<td>Thanksgiving</td>
<td>-</td>
</tr>
<tr>
<td>11-28-17 T</td>
<td>26</td>
<td>Student Presentations</td>
<td>Work on Literature Review and Oral Presentation</td>
</tr>
<tr>
<td>11-30-17 Th</td>
<td>27</td>
<td>Student Presentations</td>
<td>Work on Literature Review and Oral Presentation</td>
</tr>
<tr>
<td>12-05-17 T</td>
<td>28</td>
<td>Student Presentations</td>
<td>Work on Literature Review and Oral Presentation</td>
</tr>
<tr>
<td>12-07-17 Th</td>
<td>29</td>
<td>Student Presentations</td>
<td>Work on Literature Review and Oral Presentation</td>
</tr>
<tr>
<td>12-11-17 M</td>
<td>-</td>
<td>Written Review Paper</td>
<td>Due at Noon</td>
</tr>
<tr>
<td>12-14-17 Th</td>
<td>1-3 pm</td>
<td>Final Exam</td>
<td>Chapters 1-18, p1-618</td>
</tr>
</tbody>
</table>
4. Dates of Lectures, Partial Exams, Student Presentations, Written Review Paper, and Final Exam
(Subject to change)

<table>
<thead>
<tr>
<th>M</th>
<th>TU</th>
<th>W</th>
<th>TH</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/28/2017</td>
<td>08/29 Lecture 1</td>
<td>08/30</td>
<td>08/31 Lecture 2</td>
<td>09/01</td>
</tr>
<tr>
<td>09/04</td>
<td>09/05 Lecture 3</td>
<td>09/06</td>
<td>09/07 Lecture 4</td>
<td>09/08</td>
</tr>
<tr>
<td>Labor Day</td>
<td></td>
<td></td>
<td>09/14 Lecture 6 Partial Exam 1</td>
<td></td>
</tr>
<tr>
<td>09/11</td>
<td>09/12 Lecture 5</td>
<td>09/13</td>
<td></td>
<td>09/15</td>
</tr>
<tr>
<td>09/18</td>
<td>09/19 Lecture 7</td>
<td>09/20</td>
<td>09/21 Lecture 8</td>
<td>09/22</td>
</tr>
<tr>
<td>09/25</td>
<td>09/26 Lecture 9 Review Paper Preparation</td>
<td>09/27</td>
<td>09/28 Lecture 10</td>
<td>09/29</td>
</tr>
<tr>
<td>10/02</td>
<td>10/03 Lecture 11</td>
<td>10/04</td>
<td>10/05 Lecture 12 Partial Exam 2</td>
<td>10/06</td>
</tr>
<tr>
<td>10/09</td>
<td>10/10 Lecture 13</td>
<td>10/11</td>
<td>10/12 Lecture 14</td>
<td>10/13</td>
</tr>
<tr>
<td>10/16</td>
<td>10/17 Lecture 15 Review Paper Preparation</td>
<td>10/18</td>
<td>10/19 Lecture 16</td>
<td>10/20</td>
</tr>
<tr>
<td>10/23</td>
<td>10/24 Lecture 17</td>
<td>10/25</td>
<td>10/26 Lecture 18</td>
<td>10/27</td>
</tr>
<tr>
<td>10/30</td>
<td>10/31 Lecture 19 Partial Exam 3</td>
<td>11/01</td>
<td>11/02 Lecture 20 Student Presentations</td>
<td>11/03</td>
</tr>
<tr>
<td>11/06</td>
<td>11/07 Lecture 21 Student Presentations</td>
<td>11/08</td>
<td>11/09 Lecture 22 Student Presentations</td>
<td>11/10</td>
</tr>
<tr>
<td>12/04</td>
<td>12/05 Lecture 28 Student Presentations</td>
<td>12/06</td>
<td>12/07 Lecture 29 Student Presentations</td>
<td>12/08</td>
</tr>
<tr>
<td>12/11</td>
<td>12/12 Review Paper Due at Noon</td>
<td>12/13</td>
<td>12/14 Final Exam 1-3pm</td>
<td>12/15/2017</td>
</tr>
</tbody>
</table>
5. How to Get the Most Out of the Course

1. Nine-twelve hours each week is the minimum amount of time you will have to commit to this course in order to do well. This includes 3 hours for lectures and 6-9 hours for study related to lecture content each week for lectures 1-18. For lectures 19-29, this includes 3 hours for lectures, 2-3 hours for oral presentation preparation, 2-3 hours of literature review, and 2-3 hours for writing the paper every week.

2. Do the assigned readings before coming to class, watch the video(s), and complete other pre-class assignments. This will help you understand the lecture material and see how a topic is going to be developed. Coming to class prepared will also give you the necessary background to participate meaningfully in class discussions. A significant portion of the material is review and will not be discussed in detail!

3. Establish a schedule of study that includes some time set-aside for review. For example, as we discuss the structure of the nervous system, make sure to review the structure and functions of neurons.

4. Never cram for a test. This may allow you to just get by in the course, but it will never allow you to learn and understand the subject. Remember that you will only get out of the course what you put in to it. Don't just say to yourself, "Yeah, I understand it." Quiz yourself. Ask a group member to quiz you informally. That is one of the surest ways to determine if you really understand the material.

5. Don't be embarrassed or afraid to admit that you are having difficulty, either to me or to your fellow students. We should all work together to see that everyone learns. Please contact me because I want this class to be a successful learning experience for everyone. I have office hours because I want to help you succeed; use my time!

6. Set aside time for your literature review every week. This cannot be completed a week before your oral presentation, or when the written paper is due. When you read a peer-reviewed journal article, be critical and put it into the context of other papers you have read. When you read journal articles take notes and highlight text so you can easily find materials when you are writing parts of the paper. Never copy the text straight into your paper, but paraphrase in your own words. Always cite the origin of the materials you use; plagiarism is a serious offense!

7. Ask questions. This is the best way you have for clearing up confusing points and misunderstandings and to go beyond what we talked about in lecture. Learning to ask questions is the first skill that a scientist has to develop in order to find meaningful answers. Have fun! Nothing works better than enjoying what you are doing. Please let me know at any time what I can do to improve the course.

6. How to Get Information on Neurobiology

The websites provided by Pearson for the textbook are extensive and provide excellent information and tools to understand the concepts and to help remember the content. For your literature review, I suggest you use the National Institutes of Health (NIH)
PubMed website (http://www.ncbi.nlm.nih.gov/pubmed/). You can use key words, author names, and phrases to find articles of interest on this website. In addition, you can use the reference list of the articles you have already obtained to find older papers on the same topic. Please ask me if you are having difficulty identifying articles of interest.

7. Students’ Rights and Responsibilities

The university subscribes to principles of due process and fair hearings as specified in the "Joint Statement on Rights and Freedoms of Students." This document can be found in the Division of Student Services. You are encouraged to read it carefully.

Most students adjust easily to the privileges and responsibilities of university citizenship. The university attempts to provide counsel for those who find the adjustment more difficult. UAF may terminate enrollment or take other necessary and appropriate action in cases where a student is unable or unwilling to assume the social responsibilities of citizenship in the university community.

STUDENT CODE OF CONDUCT

UAF students are subject to the Student Code of Conduct. In accordance with board of regents' policy 09.02.01, UAF will maintain an academic environment in which freedom to teach, conduct research, learn and administer the university is protected. Students will benefit from this environment by accepting responsibility for their role in the academic community. The principles of the student code are designed to encourage communication, foster academic integrity and defend freedoms of inquiry, discussion and expression across the university community.

UAF requires students to conduct themselves honestly and responsibly, and to respect the rights of others. Conduct that unreasonably interferes with the learning environment or violates the rights of others is prohibited. Students and student organizations are responsible for ensuring that they and their guests comply with the code while on property owned or controlled by the university or at activities authorized by the university.

The university may initiate disciplinary action and impose disciplinary sanctions against any student or student organization found responsible for committing, attempting to commit or intentionally assisting in the commission of any of the following prohibited forms of conduct:

a. Cheating, plagiarism or other forms of academic dishonesty
b. Forgery, falsification, alteration or misuse of documents, funds or property
c. Damage or destruction of property
d. Theft of property or services
e. Harassment
f. Endangerment, assault or infliction of physical harm
g. Disruptive or obstructive actions
h. Misuse of firearms, explosives, weapons, dangerous devices or dangerous
chemicals
i. Failure to comply with university directives
j. Misuse of alcohol or other intoxicants or drugs
k. Violation of published university policies, regulations, rules or procedures
l. Any other actions that result in unreasonable interference with the learning environment or the rights of others.

This list is not intended to define prohibited conduct in exhaustive terms, but rather offers examples as guidelines for acceptable and unacceptable behavior.

Honesty is a primary responsibility of you and every other UAF student. The following are common guidelines regarding academic integrity:

1. Students will not collaborate on any quizzes, in-class exams, or take-home exams that contribute to their grade in a course, unless the course instructor grants permission. Only those materials permitted by the instructor may be used to assist in quizzes and examinations.
2. Students will not represent the work of others as their own. A student will attribute the source of information not original with himself or herself (direct quotes or paraphrases) in compositions, theses, and other reports.
3. No work submitted for one course may be submitted for credit in another course without the explicit approval of both instructors.

Alleged violations of the Code of Conduct will be reviewed in accordance with procedures specified in regents' policy, university regulations and UAF rules and procedures. For additional information and details about the Student Code of Conduct, contact the dean of students or visit www.alaska.edu/bor/.

STUDENT BEHAVIORAL STANDARDS
Education at the university is conceived as training for citizenship as well as for personal self-improvement and development. Generally, UAF behavioral regulations are designed to help you work efficiently in courses and live responsibly in the campus environment. They are not designed to ignore your individuality but rather to encourage you to exercise self-discipline and accept your social responsibility. These regulations, in most instances, were developed jointly by staff and students. Contact the dean of students for more information.

8. Copy Right

Please be aware that any materials you receive in this class are protected under US copyright law. Do not distribute these materials to anyone else, as this may constitute a violation of the law and could result in prosecution.