

Chemistry 470 - Spring 2021

Cellular and Molecular Neuroscience (CRN: 36693) Online: 3 Credits

Textbooks: We will be following Purves for assigned readings and course organization but either one of the three text books will be adequate for the course.

Course materials

The following are *required* for the course and can be purchased in the UAF bookstore or elsewhere

Additional Reading: Scientific research articles and review articles (PDF via Blackboard)
Handouts provided in class

Course Description (modified from catalogue)

Neuroscience is a complex discipline integrating concepts of chemistry, physics, biochemistry, cell biology, pharmacology, physiology, anatomy, and psychology. The goal of this course is to provide both undergraduate and graduate students a comprehensive foundation of the cellular and molecular concepts governing the function and communication of the developing and adult nervous system ultimately forming complex behaviors such as learning and memory. Topics addressed will include membrane excitability, ion channel function, G-protein signaling, synaptic transmission, development of the nervous system and innervation patterns. Fundamentals of the functional properties of neurons will provide the background for discussions of small neuronal circuits that regulate behavior, the cellular/molecular basis of learning and memory, and pharmacological approaches for the treatment of neuronal pathologies.

Course Goals:

Acquire the foundation of the cellular and molecular concepts governing neuronal communication

Course Policies:

Attendance: Regular attendance to online lectures is expected to ensure consistency in discussions and presentations. Active student participation is essential and will be accounted for in the final grade. If you are unable to attend class, you should contact the instructor in advance.

Quizzes: Each chapter will have a quiz associated with it and will be delivered via Blackboard. A time window will be made available for students to login and take the quiz. Quizzes will consist of 5 questions from the lecture material and will be timed. Importantly, **makeup quizzes** will only be allowed with pre-approval of the instructor or with an acceptable, documented reason such as unexpected illness, family emergencies, or other unavoidable events. The format of a make-up quiz cou

be that of the student and not homework help sites (Chegg), peers, tutors, etc. Anyone caught using these resources on assignments strictly told to not use them will earn a zero for the assignment and will be reported to the University.

Late assignments: Are not accepted. Students are given at least one week to complete assignments.

Paper discussions: Research paper(s) pertinent to topics addressed in readings, unit videos, and other exercises will be discussed with respect to rationale, hypothesis, research data, and analysis. Papers will be discussed using Preusall, a free discussion board. Papers will be available to start working on **one week prior** to the due date. You will be required to respond to

your grade. These discussions are important to translate science knowledge into understanding i.e. the application of science.

Grading:

Evaluation Type	Undergraduates	Graduates
Quizzes	10 %	10 %

Group Projects

Grade:	Percentage:
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

Ethical Considerations:

“Any student caught cheating will be assigned a course grade of F. The student’s academic advisor will be notified of this failing grade and the student will not be allowed to drop the course”.

Students must also adhere to UAF policies, the student code of conduct as well as the University of Alaska *Honor Code*, which states:

Students will not collaborate on any quizzes or take-home assignments that will contribute to their grade in a course, unless permission is granted by the instructor of the course. Only those materials permitted by the instructor may be used to assist in assignments. 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. No work submitted for one course may be submitted for credit in another course without the explicit approval of both instructors. Violations of the Honor Code will result in a failing grade for the assignment and, ordinarily, for the course in which the violation occurred. Moreover, violation of the Honor Code may result in suspension or expulsion.

Use of Chegg (or other similar sites) on Graded Assessments constitutes an Academic Integrity Violation and will result in strict adherence to the Department Policy on Cheating. (Yes I will check).

Plagiarism Policy:

original author. Intellectual property includes all electronic, spoken or print media ***thus any information taken of the web is included under this statement.*** Students are expected to cite all sources used in oral and written presentations. Cases of plagiarism will be taken seriously with a grade 0 for the particular assignment. Severe cases may be referred to the Department Chair or Dean or class failing considered.

Disabilities

Students with a physical or learning disability are required to identify themselves to the Disability Services office, 474-7043, located in the Center for Health and Counseling. The student must provide documentation of the disability. Disability Services will then notify the instructor of special arrangements for taking tests, working homework assignments, and doing lab work.

Computer Access: Currently Department of Computing and Communications (DCC) maintains two open labs on campus: the Bunnell Lab, and the Node (Rasmussen library). The Node has 24-hour access.

COVID-19 Awareness: Students should keep up-to-date and mandates related to COVID-19 by regularly checking this website:

<https://sites.google.com/alaska.edu/coronavirus/uaf/uaf-students?authuser=0>

and are subject to disciplinary actions if they do not comply.

Special Dates pertinent to the course

See academic calendar for details at <http://catalog.uaf.edu/calendar/>.