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Course Description:

Electrical signals in neurons are produced by voltage-gated and ligand-gated ion channels. Any disturbance in the function of ion channels can lead to major neurological disorders. This course will give the opportunity for students to learn the structure and function of some of the major voltage- and ligand-gated ion channels and their relationship to channel related diseases. Mechanisms of ligand binding, gating and ion selectivity will be covered. The structure of the course will be based on lectures overviewing a topic, presentation and critical discussions of primary research papers. The course will also cover electrophysiological, fluorescence and crystallography techniques used to study structure-function of ion channels. We will also examine how alterations in ion channel function can contribute to specific nervous system disorders such as nicotine addiction and epilepsy.

Course Instructor:

Dr. Rashmi raad@uvic.ca & ' () * ++, - in the subject line

Time: Jan /0 - Apr , , 10112 Mon, Thur 1340 pm 5 4360 pm2

Place: Note that the two first weeks of lectures Jan /0 - Jan 109 will be synchronous online lectures on Zoom found at uvic.zoom.us

Join the lecture by accessing through uvic.zoom.us with your Netlink ID and passphrase.

Starting Jan 1+ the plan is that lectures will be in-person in uningham building /+>.

If you are sick please stay at home.

Please check out the University's guidelines on health and safety <https://www.uvic.ca/return-to-campus/health-safety/index.php>

Office hours: by appointment

Reading Material: There is no required textbook for the course. Reading material will be based on primary research papers.

Assigned papers to specific classes can be found in a more detailed course schedule available online on bright.uvic.ca.

Students are expected to read ahead of time the assigned paper and participate in discussions of the paper in class.

Reading material, course outlines, and other material relevant to the course can be found at bright.uvic.ca.

All course content and materials are made available by instructors for educational purposes and for the exclusive use of students registered in their class. The material is protected under copyright law! even if not marked with a ". Any further use or distribution of materials to others requires the written permission of the instructor! except under fair dealing or another exception in the Copyright Act. Violations may result in disciplinary action under the Resolution of Non-Academic (Misconduct Allegations policy) A\$*+, , -.

Prerequisites: All students in Biology ++, must have successfully completed ' () * 4>6 or 4>0 as a prerequisite.

valuation:

First midterm exam 16D tentative February /0, 10119

Second midterm exam 40D tentative March /+, 10119

Final exam +6D scheduled by records9

Midterm and Final Exams:

Exams will be performed in-person unless advised otherwise from the University.

Exams will be based on information covered in lectures and reading material.

Students are responsible for any material discussed in class, drawn on board, etc.

The final exam will be cumulative.

Failure to write a midterm test will result in a grade of 0D for the exam. (If you miss the midterm

and obligations. (In particular, students are to attend to A " " " #) ? dates published in the calendar and posted on the undergraduate records website. Students must not assume that they will be dropped automatically from an course they do not attend.

() **University's Policy on Academic Integrity:**

Students are encouraged to read the university's policy on academic integrity:

<https://www.uvic.ca/calendar/undergrad/index.php?policy>

We reserve the right to use plagiarism detection software or other platforms to assess the integrity of student work.

Student conduct:

The University of Victoria is committed to promoting critical academic discourse while providing a respectful and supportive learning environment. All members of the university community have the right to this experience and the responsibility to help create such an environment. The university will not tolerate racism, sexualized violence, or any form of discrimination, bullying or harassment. Please be advised that, by logging into Uvic's learning systems or interacting with online resources, and course-related communication platforms, you are engaging in a university activity. All interactions within this environment are subject to the university's expectations and policies. Students are encouraged to read the university's code of professional conduct for students:

<https://www.uvic.ca/services/advising/advice-support/academic-units/student-code-of-conduct/index.php>

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We acknowledge and respect the 10 010 peoples on whose traditional territory the university stands and the 20nghees! 3s#uimalt and 24N35 peoples whose historical relationships with the land continue to this day.