Course Syllabus

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PSY497F Current topics in biological rhythm studies

Biological clocks that time natural oscillations in the physical world are ubiquitous among living organisms throughout phylogeny. Specifically endogenous clocks controlling the timing of behavior and physiological change have become well known and accepted by both the science community and the general populace. However, our knowledge of the ways in which clocks are significant in determining the temporal programs continues to expand as we recognize adaptations that support rhythmicity at all levels of biologic organization. Furthermore, issues of rhythmicity have become part of mainstream thought in medicine, biology, social sciences, and engineering. Various different influences on performance, such as sensory processing, memory formation, motivation, or emotionality, may be influenced by internal timekeeping in different ways. Some aspects of rhythmicity are innate while others are learned. The synchronization of internal clocks has an enormous effect on mental and physical performance; and this includes the rhythms of the internal microbiome. This course will look at these various ways in which clocks participate in regulating behavioural timing, and how they are coordinated in regulating the daily temporal program of physiology and behaviour.

A more detailed introduction is included with the syllabus.

Also attached is a template for the discussion leader assignments. Please fill this out and send a copy to me or bring it to the first class. You will also receive this by email. The discussion topics are described under the weekly assignments. You will be asked to indicate your preferences (which topic discussions you would like to lead) by filling out this form.

PSY497 2021F Schedule.xlsx

Course Summary:

Date	Details	Due
Wed Sep 22, 2021	Assignment 1. Structure and function of biological timekeeping systems (https://q.utoronto.ca/courses/236823/assignments/700578)	due by 12:10pm
Wed Sep 29, 2021	Assignment 2. Time Memory (https://q.utoronto.ca/courses/236823/assignments/700579)	due by 12:10pm
Wed Oct 6, 2021	Assignment 3. Mechanisms of seasonal change (https://q.utoronto.ca/courses/236823/assignments/700580)	due by 12:10pm
Wed Oct 13, 2021	Assignment 4. Ultradian rhythms and brain communication (https://q.utoronto.ca/courses/236823/assignments/700581)	due by 12:10pm

Date	Details	Due
Wed Oct 20, 2021	Assignment 5. Cosmological and astronomical aspects of time perception (https://q.utoronto.ca/courses/236823/assignments/700582)	due by 12:10pm
Wed Oct 27, 2021	Assignment 6. Timing functions in the hibernation cycle (https://q.utoronto.ca/courses/236823/assignments/700583)	due by 12:10pm
Wed Nov 3, 2021	Assignment 7. Social Zeitgebers, social isolation, and COVID-19 (https://q.utoronto.ca/courses/236823/assignments/700584)	due by 12:10pm
Wed Nov 17, 2021	Assignment 8. Metabolism, nutrition, food entrainment and the non-canonical biological clocks (https://q.utoronto.ca/courses/236823/assignments/700585)	due by 12:10pm
Wed Nov 24, 2021	Assignment 9. Circadian disorganization and chronic disease (https://q.utoronto.ca/courses/236823/assignments/700586)	due by 12:10pm
Wed Dec 1, 2021	Assignment 10. Ontogeny of mammalian circadian rhythms, epigenetics, and aging (https://q.utoronto.ca/courses/236823/assignments/700575)	due by 12:10pm
Wed Dec 8, 2021	Assignment 11. Biological rhythms in perspective: Are there evolutionary advantages for disrupting circadian rhythms? (https://q.utoronto.ca/courses/236823/assignments/700576)	due by 12:10pm
	Participation (https://q.utoronto.ca/courses/236823/assignments/700587)	due by 11:50pm
	Assignment 12: Final paper (https://q.utoronto.ca/courses/236823/assignments/700577)	due by 11:59pm