

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

COURSE OUTLINE – FALL 2023

PY4740 (A2): Psychophysiological Recordings – 3 (3-0-0) 45 Hours for 15 Weeks

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land, and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

INSTRUCTOR: Dr. Ali M. AL-Asadi

OFFICE: C-311B

OFFICE HOURS: By appointments

PHONE: 780-539-2061

E-MAIL: aalasadi@gprc.ab.ca

CALENDAR DESCRIPTION: This advanced course in psychophysiology focuses on and provides students with in-depth knowledge of the processes and instruments used in recording and studying a person's physiological responses to internal or external cognitive, emotional, and/or behavioural stimuli. Examining the physiological changes that accompany psychological or behavioural manipulation and the behavioural changes produced by manipulating physiological variables is essential for understanding mind-body interaction.

PREREQUISITE(S)/COREQUISITE: PY3752 or permission of the instructor

REQUIRED TEXT/RESOURCE MATERIALS:

- Stern, R. M., Ray, W. J., & Quigley, K. S. (2001). Psychophysiological Recordings (2nd Edition). Oxford University Press, Inc. New York, USA.
- A collection of reading materials, journal articles, and other resources based will be posted to this course's D2L site at: <https://myclass.gprc.ab.ca/d2l/home>

DELIVERY MODE(S): On-Campus

LEARNING OUTCOMES: As a result of taking this course, students will gain the ability to:

- Identify the instruments used in psychophysiological measurements, their functions, and the process by which they make these measurements,

- Identify and articulate the relationships between the physiological responses and the stimuli that induce these responses,
- Identify and differentiate the physiological recordings produced by the various instruments,
- Analyze the various recordings for noise, meaning, and usefulness,
- Discuss the use of psychophysiological responses in modifying behaviours,
- Discuss the use of psychophysiological responses in the diagnosis and treatment of psychological disorders,
- Critically evaluate current research on the relationship between physiological responses and stimuli and on the manipulation of physiological variables to produce behavioural changes.

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at Alberta Transfer Guide at <http://transferalberta.alberta.ca/transfer-alberta-search/#/audienceTypeStep>

**** Grade of D or D+ may not be accepted for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.**

EVALUATIONS:

*Four quizzes (10% each) 40%

Research presentation (Instrument) 15%

**Research presentation (use of modality with a disorder) 15%

**Research presentation (Case Study or research synthesis) 15%

Class Participation & Attendance 15%

* Remember, all exams may include questions from lectures that may not be covered by your textbook.

** The final exam consists of the Modality and Research Synthesis presentations

GRADING CRITERIA:

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	95-100		C+	2.3	66-69
A	4.0	90-94		C	2.0	63-65
A-	3.7	85-89		C-	1.7	60-62
B+	3.3	80-84		D+	1.3	55-59
B	3.0	75-79		D	1.0	50-54
B-	2.7	70-74		F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

Week 1	Chapter 1: History	
Week 2	Chapter 2: Sources of Psychophysiological Recordings	
Week 3	Chapter 3: Instruments and Instrumentation	
Week 4	Chapter 4-6: Principles of Psychophysiology, safety, and ethics	Quiz 1
Week 5	Chapter 13: Electrodermalgraphy (skin conductance & potential)	
Week 6	Chapter 9: Pupillography and Electrooculography	
Week 7	Chapter 10: Respiratory System	
Week 8	Chapter 12: Electrocardiography, Heart Rate, Cardiac Output, Blood Pressure, Volume, & Flow	Quiz 2
Week 9	Chapter 8: Electromyography	
Week 10	Chapter 7: Electroencephalography and Imaging	
Week 11	Chapter 11: Electrogastrography	Quiz 3
Week 12	Chapter 14: Signal Processing	
Week 13	Chapter 15: Applications of Psychophysiological Recording	
Week 14	Biofeedback	
Week 15	Neurofeedback	Quiz 4 Final Exam

STUDENT RESPONSIBILITIES:

Each class's assigned readings and exercises should be completed before attending that class. As this course depends heavily on discussion and, at times, practice exercises and illustrations, attendance at all sessions is required and is critical to the student's success in the course. In case of illness or emergency, notify the instructor as soon as possible. If you have difficulty in this course, please contact me immediately for assistance. Please let me know if you want to discuss any aspect of the course or your aspiration.

You are accountable for delivered lectures, assigned readings, and any announcements that will be made in class occasionally. If you are unable to attend a particular class, it is your responsibility to find out what was missed. For optimal learning and readiness for class participation, you are expected to attend class regularly (no less than 80% attendance) and read the assigned

chapters/topics before coming to class on the dates indicated on the timetable, except for the first session. Past course records show that class attendance is highly correlated with the final grade in the course.

If you foresee that you will be unable to write a test or exam at the scheduled time due to illness or emergency, you should notify me immediately, preferably one day in advance. A message may be left on my voice mail (780-539-2061) or e-mail (aalasadi@nwpolytech.ca) together with a phone number where you may be reached to arrange for an alternative date to write the test, if feasible. Failure to notify the instructor will result in a grade of zero for the missed tests unless proof is presented that you were physically or mentally unable to do so due to a sudden illness, emergency, or unavoidable circumstances beyond the student's control.

All students are expected to display a professional attitude and behaviour in the classroom. This includes reliability, respect for and cooperation with fellow students and the instructor, attention to fellow students' questions and the instructor's response, determination to achieve first-class work while meeting deadlines, and constructive response to criticism.

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated, and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Rights and Responsibilities policy available at <https://www.nwpolytech.ca/about/administration/policies/index.html>.

****Note:** all Academic and Administrative policies are available

Additional Information

MOST IMPORTANT: Instructors reserve the right to use electronic plagiarism detection services on written assignments. **Instructors also reserve the right to ban the use of any form of electronics (cell phones, Blackberries, iPods, tablets, scanning pens, electronic dictionaries, etc.) during class and exams.**

Cell phones, tablets, notebooks, laptops, and other electronic devices are strictly forbidden in my classes and exams. Also, I use plagiarism and AI detection software for all written assignments and essays.

In Addition:

1. The format of each exam will be discussed in class.
2. Exam grades are final, and there is no substitute work for your poor exam grade.
3. The nature and topics of your written paper will be discussed in class
4. It is your responsibility to read each and every chapter and assigned reading (if any) and attend all lectures.
5. Lectures will not always cover the reading materials. Lectures may cover topics and include information that is not covered by your reading materials. Therefore, it is imperative that you attend every class as your exams may include materials from the lectures that are not covered by the reading materials.
6. Students are expected to display a professional attitude and behaviour. These attitudes and behaviours are many and will be discussed in class. Any violation or misconduct may result in dismissal from the class.

7. Talk to me if you have concerns or if you are experiencing difficulties that may have a negative impact on your academic performance.

IMPORTANT: Please remember this is a university course, and you are a university student.

Please keep this course information sheet for future reference.