



**Department of Psychology**  
**Psych 470**  
**Evolutionary Perspectives on Mental Health and Illness**  
**Tuesdays & Thursdays 8:30am – 9:50am, PAS 3026**

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### **Instructor and T.A. Information**

**Instructor:** Dr. Paul Wehr

**Office:** PAS 4037

**Office Hours:** Tuesdays/Thursdays, 10:00am - 12:00pm

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### **Course Description**

Although still underutilized, evolutionary approaches are increasingly gaining favour in the social sciences because they offer a unique and useful perspective on human cognition, emotion, and behaviour. When evolutionary theory is applied to mental and physical illness, however, an interesting question arises: Given that pathologies are heritable (there is a nontrivial underlying genetic component) and that they have a significant negative impact on fitness (decrease survival and reproduction) why do pathologies persist in the population? In other words, why has natural selection failed to remove genes that contribute to physical and mental disease?

### **COURSE GOALS AND LEARNING OUTCOMES**

Upon completion of this course, students should be able to:

- A. Apply evolutionary theory to psychological constructs and recognize the difference between mechanistic and adaptationist explanations of phenomena.
- B. Read and critically evaluate research articles that take an evolutionary approach:
  1. Able to summarize and explain complex information.
  2. Able to evaluate the strengths and weaknesses of arguments.
  3. Able to ask meaningful questions that facilitate exploration of new knowledge.
- C. Develop transferable skills that involve teamwork, peer evaluation, and library research.
- D. Gain greater insight into yourself, others, and the human condition:
  1. Reflect on how core concepts relate to you and your relationships with others.
  2. Reflect on the value of human diversity.

## Course Assessment

There is also the potential to earn a bonus of +3% by engaging in extra research participation.

Assessment	Due	Weight
Participation:	Ongoing	10%
Discussion Questions (x5)	Mondays at 4pm	5%
Course Concept Map	Nov 25	10%
Paper:		
Paper Proposal	Sep 23	5%
Review Paper	Nov 04	25%
Peer Evaluation (x2)	Nov 18	15%
Revised Paper (optional)	Dec 02	(15%)
Quizzes (3)	Oct 03, Nov 07, Dec 03	30%
SONA Bonus	Dec 03	3%
Total		103%

*Participation* – Students are expected to attend regularly and engage with the content and their peers. As such, participation will count for 10% of your final grade. Students can miss one class maximum with no penalty to their participation grade. Each subsequent absence results in a deduction of 1%. Being physically present but mentally absent will also lead to a deduction of 1%.

*Discussion Questions* – Students are required to post 5 discussion questions during the term on the LEARN discussion board. Questions must be posted on different topics, must be based on that topic’s assigned reading and must be posted by 4pm on Monday in preparation for Tuesday’s class. Questions are meant to stimulate meaningful dialogue from different points of view, and to encourage connections beyond the scope of the immediate content. They are not meant to be fact based with a right and wrong answer. Please consult the rubric for more information on how to develop thoughtful and reflective discussion questions. Students can earn 2% for each question they post on time during the term.

*Course Concept Map* – A concept map is a visual representation of the relationships among concepts within a defined set. In our case, that set consists of course content and experiences related to PSYC470. The final portion of the portfolio requires students to construct their own original concept map depicting the course. Please refer to the rubric for more instructions and information regarding concept maps. The concept map is to be submitted to the appropriate dropbox by November 25 and will represent 10% of the final grade.

## Research Paper and Reflection

The purpose of the paper is to apply and evaluate the applicability of course content to new topics. The paper is divided into 4 components and is worth 40% of students’ final grade in the course. In addition to the short descriptions included below, more detailed information and rubrics will be available on LEARN.

*Paper Proposal (5%)* – The first component of the paper consists of a proposed topic along with a list of five potential resources. Students will first identify a “maladaptive” behaviour, preferably one not already covered in the course, but if a course topic is selected, students should strive to alter the focus of their paper (i.e., make it more narrow or more broad in its scope). In the proposal, which should be no more than 500 words, students should describe the behaviour, explain why they think it’s maladaptive, and why they selected this topic for this exercise (be reflective). Students should also do a literature search to locate five potential resources (articles) to use in their paper and then present them on a separate reference page using APA format.

*Students are welcome to team up on a topic and share ideas and resources, but each student should write their own paper!*

**Review Paper (25%)** – The second component of the paper is the paper itself. Your review paper should describe the maladaptive behaviour in greater detail, then should identify which evolutionary concepts might be useful in explaining the maladaptive behaviour, and then briefly review any existing evolutionary explanations of the maladaptive behaviour found in the literature. Students should also comment on the suitability of the evolutionary explanation(s); what aspects of the behaviour does it explain well and what aspects seem weak or lack evidence? Expected word count for the paper is 3000 words (15 double-spaced pages) and is due by November 04. More information on, and a rubric for, the review paper is available on LEARN.

**Peer Review (10%)** – The third component of the paper requires students to read the papers of two other students in the class and provide critical feedback. Papers will be assigned to students for review by the instructor, which will then be due November 18. Offering and receiving critical feedback is important for most professions but is absolutely essential within the academy. Rarely (if ever) do scholars produce knowledge in isolation without input from peers and colleagues. As such, this course formally includes peer review as a structured component in the epistemological process. Reviews should be approximately 500 words each. More information on, and a rubric for, the peer review is available on LEARN.

**Revised Paper and Reflection (15%)** – Students have the option to incorporate the feedback received from their peers and then resubmit their paper for reassessment. As such, it is essential that the peer reviews are completed by the due date (November 18) so that every student has a full two weeks to reflect on the criticism received and make revisions before resubmitting their paper by December 02. Resubmissions should *clearly identify* what changes have been made. If no revision is submitted, then the 25% will be determined by the grade of the original paper submission. In the event that a student submits a revised paper, then the 25% will be divided between the original submission (10%) and the revised paper (15%).

**POLICY ON MISSED DEADLINES:** Late assessments will be penalized 10% per day up to a maximum of 50%. Assignments later than 7 days are not eligible for grading. If an assessment is late for a legitimate reason (e.g., illness or incarceration), valid documentation (i.e., a verification of illness form or arrest sheet) is required in order to avoid receiving a deduction. Extensions might be possible for students with compelling requests who approach the instructor in advance of the due date.

## **Quizzes**

Three quizzes each with 10 multiple-choice questions will divide the course content into thirds (approximately). The first quiz will contain questions related to content covered during topics 1 – 4; the second quiz testing content from topics 5 – 7; and the third quiz testing content from topics 8 – 11. Quizzes will take approximately 45 minutes and are non-cumulative. There is no final exam in this course.

Questions on quizzes will be attempted twice: once individually and once in a group using Instant Feedback Assessment Cards (IF-AC). Each quiz is worth 10% of the student's final grade with 5% based on individual performance, and 5% on the group's performance. Approximately 20 minutes will be allotted for each attempt but with a grace period (total of 45 minutes).

Questions are meant to stimulate dialogue between students during the second phase of the quiz. As such, they will not be straight forward memorization of facts. Instead, they will generally require careful thought and application of overarching theory and concepts.

**POLICY ON MISSED QUIZZES:** Because of the group format, it is essential that students attend classes on dates with quizzes scheduled. If a student has to miss an assessment date for a legitimate reason (e.g., illness or

kidnapping), an opportunity to make up the quiz will be permitted once appropriate documentation has been provided (i.e., Verification of Illness Form or Ransom Note). Absence due to *religious holiday* is a valid excuse, but notify your instructor at the beginning of the course in the event of a conflict. Absences for varsity athletics, family obligations, co-op interviews or other similar engagements are NOT part of University policy and students should not assume that they will be accommodated. If you have a pressing issue that conflicts with a quiz, you should discuss this with your instructor as soon as possible.

### **Accommodation for Students with Disabilities**

The AccessAbility Services office, located on the first floor of the Needles Hall extension, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AS office at the beginning of each academic term.

<https://uwaterloo.ca/disability-services/>

### **Counselling & Psychological Services**

The Counselling & Psychological Services office at the University of Waterloo, located on the second floor of the Needles Hall extension, offers a variety of resources for those struggling with the challenges of university life, including coping skills seminars and workshops, peer support, group therapy, and clinical referrals. Their home page is:

<https://uwaterloo.ca/counselling-services/>

### **Student Success Office**

The Student Success Office at the University of Waterloo, located on the second floor of South Campus Hall, offers tutoring, workshops, success coaching, and a variety of other resources for students looking for guidance to be successful in university. Their home page is:

<https://uwaterloo.ca/student-success/>

### **Writing Centre**

The Writing Centre, located on the second floor of South Campus Hall, is available to help students with critical reading, synthesizing and integrating research, citing, organizing and structuring their paper, writing style, etc. The Centre offers appointments with an instructor, drop-in sessions, and workshops. Their home page is:

<https://uwaterloo.ca/writing-centre/>

### **Concerns About the Course or Instructor (Informal Stage)**

We in the Psychology Department take great pride in the high quality of our program and our instructors. Though infrequent, we know that students occasionally find themselves in situations of conflict with their instructors over course policies or grade assessments. If such a conflict arises, the Associate Chair for Undergraduate Affairs (Dr. Myra Fernandes) is available for consultation and to mediate a resolution between the student and instructor. Dr. Fernandes' contact information is as follows: Email: [mafernan@uwaterloo.ca](mailto:mafernan@uwaterloo.ca), Phone: 519-888-4567, x32142. A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. See Policy 70 and 71 below for further details.

### **Academic Integrity**

*Academic Integrity:* In order to maintain a culture of academic integrity, members of the University of Waterloo are expected to promote honesty, trust, fairness, respect and responsibility.

*Discipline:* A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to Policy 71 – Student Discipline.

<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71>

*Grievance:* A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Polic 70 – Student Petitions and Grievances, Section 4.

<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70>

*Appeals:* A student may appeal the finding and/or penalty in a decision made under Policy 70 - Student Petitions and Grievances (other than regarding a petition) or Policy 71 - Student Discipline if a ground for an appeal can be established. Read Policy 72 – Student Appeals.

<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-72>

*Other sources of information for students*

Academic Integrity (Arts): <https://uwaterloo.ca/arts/ethical-behavior>

Academic Integrity Office (uWaterloo): <https://uwaterloo.ca/academic-integrity/>

## **Research Experience Marks**

Experiential learning is considered an integral part of the undergraduate program in Psychology. Research participation is one example of this and writing an article review is another.

Students can earn a bonus of **up to 3%** through research experience. The two options for earning research experience are described below. Students may combine these two options in any proportion.

### **OPTION 1: Participation in Psychological Research**

Research participation is coordinated by the Research Experiences Group (REG). Psychology students may volunteer as research participants in lab and/or online (web-based) studies conducted by students and faculty in the Department of Psychology. Participation enables students to learn first-hand about psychological research and related concepts. Many students report that participation in research is both an educational and interesting experience. Please be assured that all Psychological studies have undergone prior ethics review and clearance through a University of Waterloo Research Ethics Committee.

***Educational focus of participation in research:*** To maximize the educational benefits of participating in research, students will receive feedback information following their participation in each study detailing the following elements:

- Purpose or objectives of the study and the expected results
- Dependent and independent variables
- References for at least two related research articles
- Provisions to ensure confidentiality of data

- Contact information of the researcher should the student have further questions about the study
- Contact information for the Director of the Office of Research Ethics should the student wish to learn more about the general ethical issues surrounding research with human participants, or specific questions or concerns about the study in which s/he participated.

Participation in LAB studies is worth 0.5 participation credits (grade percentage points) for each 30-minutes of participation. Participation in ONLINE studies is worth .25 credits for each 15-minutes of participation. Researchers will record student's participation and will advise the course instructor of the total number of credits earned by each student at the end of the term.

***How to participate?***

Study scheduling, participation and grade assignment is managed using the SONA online system. All students enrolled in this course have been set up with a SONA account. You must get started early in the term.

***How to log in to Sona and sign up for studies:***

<https://uwaterloo.ca/research-experiences-group/participants/sona-information>

***More information regarding the Research Experience Group:***

<https://uwaterloo.ca/research-experiences-group/participants>

***\*\*\* Please do not ask the Course Instructor or REG Coordinator for information unless you have first thoroughly read the information provided on this website. \*\*\****

**OPTION 2: Article Review**

Students are not required to participate in research, and not all students wish to do so. As an alternative, students may opt to gain research experience by writing short reviews of research articles (i.e., scientific journal articles). Each review article counts as one participation credit. Thus, up to 3 reviews should be submitted for full credits.

***Guidelines:***

- The article must be a RESEARCH article (i.e., introduce new data) from the journal *Evolution and Human Behavior*.
- Each review should be 1.5 – 2.0 pages, typed and double-spaced with a cover page. A copy of the original article must be attached.
- Content of the review should briefly summarize the research question, methods, variables, results, and implications of the study. In addition, you should indicate the pages in the textbook that are relevant to the article and critically evaluate the application or treatment of those concepts in the article. If inappropriate or incorrect, identify the error and its implications for the validity of the article. You may find, for example, misleading headings, faulty research procedures, alternative explanations that are ignored, failures to distinguish factual findings from opinions, faulty statements of cause-and-effect relationships, errors in reasoning, etc. Provide examples whenever possible. **DO NOT COPY WORD-FOR-WORD FROM THE ABSTRACT OR ANY OTHER PART OF THE ARTICLE!** Instead, you should paraphrase and cite from the source.
- The review(s) must be submitted to your instructor by e-mail before the last lecture in the course. Late submissions will NOT be accepted under ANY circumstances. If you are submitting multiple reviews, please do so all at once, rather than at separate times during the term.

## Term Schedule

Topic	Dates	Lecture Topic & Assessment	Assigned Reading
1	Sep 05 & 10	<i>Principles of Evolutionary Theory</i>	Course Outline
2	Sep 12 & 17	<i>Causes of Disease &amp; Psychopathology</i>	Nesse, R. M. & Stearns, S. C. (2008) The great opportunity: Evolutionary applications to medicine and public health. <i>Evolutionary Applications</i> , 1, 28 – 48.
3	Sep 19 & 24	<i>ADHD</i> <ul style="list-style-type: none"> <li>(Paper Proposal Due Sep 23)</li> </ul>	Jensen, P. S., Mrazek, D., Knapp, P. K., Steinberg, L., Pfeffer, C., Schowalter, J. & Shapiro, T. (1997). Evolution and revolution in child psychiatry: ADHD as a disorder of adaptation. <i>Journal of the American Academy of Child and Adolescent Psychiatry</i> , 36, 1672 – 1679.
4	Sep 26 & Oct 01	<i>Autism</i> <ul style="list-style-type: none"> <li>(Post TL:DR by September 30)</li> </ul>	Del Giudice, M., Angeleri, R., Brizio, A., & Elena, M. R. (2010). The evolution of autistic-like and schizotypal traits: a sexual selection hypothesis. <i>Frontiers in Psychology</i> , 1, 1 – 18.
5	Oct 03, 08, 10, & 22	<i>Schizophrenia</i> <ul style="list-style-type: none"> <li>(Quiz 1 – Oct 03)</li> <li>(Comment on TL:DR by October 11)</li> </ul>	Shaner, A., Miller, G. & Mintz, J. (2004). Schizophrenia as one extreme of a sexually selected fitness indicator. <i>Schizophrenia Research</i> , 70, 101 – 109.
6	Oct 24 & 29	<i>Depression</i>	Nesse, R. M. (2006). Evolutionary explanations for mood and mood disorders. In D. J. Stein, D. J. Kupfer and A. F. Schatzberg (Eds.), <i>American Psychiatric Publishing Textbook of Mood Disorders</i> (pp. 159 – 175). Washington, D.C.: American Psychiatric Publishing.
7	Oct 31 & Nov 05	<i>Anxiety</i> <ul style="list-style-type: none"> <li>(Review Paper Due November 04)</li> </ul>	Poulton, R. & Menzies, R. G. (2002). Non-associative fear acquisition: a review of the evidence from retrospective and longitudinal research. <i>Behaviour Research and Therapy</i> , 40, 127 – 149.
8	Nov 07 & 12	<i>Eating Disorders</i> <ul style="list-style-type: none"> <li>(Quiz 2 – Nov 07)</li> </ul>	Li, N.P., Smith, A. R., Griskevicius, V. Cason, M. J., & Bryan, A. (2010). Intrasexual competition and eating restriction in heterosexual and homosexual individuals. <i>Evolution and Human Behavior</i> , 31, 365 – 372.

9	Nov 14 & 19	<p><i>Suicide &amp; Self-harm</i></p> <ul style="list-style-type: none"> <li>• (Peer Review Due November 18)</li> </ul>	<p>Andrews, P. W. (2006). Parent-offspring conflict and cost-benefit analysis in adolescent suicidal behaviour: Effects of birth order and dissatisfaction with mother on attempt incidence and severity. <i>Human Nature, 17</i>, 190 – 211.</p>
10	Nov 21 & 26	<p><i>Substance (Ab)use</i></p> <ul style="list-style-type: none"> <li>• (Concept Map Due November 25)</li> </ul>	<p>Hill, E. M. &amp; Chow, K. (2002). Life-history theory and risky drinking. <i>Addiction, 97</i>, 401 – 413.</p>
11	Nov 28 & Dec 03	<p><i>Antisocial Personality</i></p> <ul style="list-style-type: none"> <li>• (Quiz 3 – Dec 03)</li> <li>• (Revised Paper Due December 02)</li> </ul>	<p>Harris, G. T., Rice, M. E., Hilton, N. Z., Lalumierre, M. L., &amp; Quinsey, V. L. (2007). Coercive and precocious sexuality as a fundamental aspect of psychopathy. <i>Journal of Personality Disorders, 21</i>, 1 – 27.</p>