

**FACULTY OF HEALTH
DEPARTMENT OF PSYCHOLOGY
PSYC 3255 3.0 Section M
THE PSYCHOLOGY OF REASONING, JUDGMENT AND DECISION-MAKING
Wednesday 2:30-5:30 pm
Online via Zoom (Synchronous) for Classes 1-3 (Until End of January)
In-Person Offering Once Permitted by York University in ACW 005
Winter 2022**

CONTACTS AND COMMUNICATION IN THE COURSE

Instructor and TA Information:

Instructor: Professor Maggie Toplak Email: mtoplak@yorku.ca
Office Hours: Wednesdays 1-2 pm (before class) and 5:30-6 pm (after class) or by appointment.
Please email in advance to arrange (for Zoom link if still online, but otherwise we will meet in person).

Teaching Assistant: Adam Burnett Email: adamburn@yorku.ca
Office Hours: Mondays 1-2 pm or by appointment. Please email in advance to arrange (for Zoom link if still online, but otherwise we will meet in person).

Email Protocol: When you email the professor or TA, please include your Student ID and full name in the body of your email with “PSYC3255 Reasoning” in the subject line. We will not answer emails regarding issues covered in this syllabus – read the syllabus before emailing.

COURSE PREREQUISITES

- HH/PSYC 1010 6.00 (Introduction to Psychology), with a minimum grade of C.
- HH/PSYC 2110 3.00 3.00 (Developmental Psychology) or HH/PSYC 2120 3.00 (Social Psychology) or HH/PSYC 2260 3.00 (Cognition)
- Completed at least 54 earned credits

COURSE DESCRIPTION

The study of human reasoning and judgment offers us tools to enhance our every day decision making. Over the last 30 years, we have seen immense progress in our understanding of human reasoning and judgment. Current models and theories that have shaped the field will be discussed, including dual process models and individual difference perspectives. Performance on several paradigms will be examined from the perspective of the Great Rationality Debate. Topics and paradigms will include: framing effects, overconfidence paradigms, probabilistic and statistical thinking, scientific reasoning and myside thinking. In addition, we will discuss the

development of reasoning, judgment in special populations, clinical decision making, and training effects.

Program Learning Outcomes:

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

1. Demonstrate in-depth knowledge in several paradigms that have been studied in the reasoning, judgment and decision making research fields.
2. Articulate current trends and models that are dominating thinking in the fields of reasoning, judgment and decision making.
3. Express knowledge and understanding of how to design a research study related to improving human judgments and choices in every day activities.
4. Describe and explain limits to generalizability of research findings.
5. Demonstrate ability to relate the judgment and decision-making concepts to own and others' life experiences through self-reflections.

Specific Learning Objectives:

The Learning Objectives of the course are to:

1. Discuss theoretical models and perspectives that have been used to frame the current study of human reasoning, judgment and decision-making, including dual process models and The Great Rationality Debate. This will include some of the classic theories and studies that have importantly framed the current literature include: the roots of thinking in the classic reasoning literature, the heuristics and biases tradition and prospect theory.
2. Key experimental paradigms will be examined, including: the Wason card selection task and falsification strategies, scientific thinking, probabilistic reasoning, cognitive reflection, belief bias syllogisms, myside bias, overconfidence paradigms and framing effects. There will be a focus on the methodological issues in studying reasoning, judgment and decision-making as part of the course content but also to build skills for the research proposal that is developed in this course.
3. The purpose of the selected topics is to provide some breadth on this topic that will appeal to a broad range of students. The following topics will be included: developmental studies, individual differences in performance, clinical applications and real-world outcomes. The diversity in these topics is also intended for students to think about the broad range of applications of reasoning theories, and to stimulate their thinking about the research proposal that they will develop in this course.
4. This course will devote considerable attention and time to the topic of remediation of reasoning, judgment and decision-making. Some instruction will occur on training studies and on the concept of "environmental interventions". Specifically, students will be encouraged to think about simple non-invasive changes in the environment to prompt better judgment and decision-making based on this work.
5. Students will have a writing component in this course to develop a testable research proposal based on the concept of environmental interventions applied to an important real-world problem. Students will write up their proposal study in the form of a research proposal articulating the testable hypotheses. Students will be encouraged to take into account methodological controls in their design to enhance their methods and to take into account factors that may alter the interpretation of their findings.

6. Critical thinking skills will be included in each class, engaging students in discussion and analysis of methodologies and interpretations of paradigms used to assess reasoning, judgment and decision-making.

COURSE READINGS AND MATERIALS

Required Text:

Stanovich, K. E. (2010). *Decision making and rationality in the modern world*. Oxford University Press.

In addition, see readings below indicated in course schedule. These papers are available through the York library's e-resources or through eClass.

COURSE EVALUATION

Assessment	Date of Evaluation	Weighting
Participation Self-Reflection Exercises	15 Assignments X 2% each:	30%
Midterm Exam	February 16, 2022 – In Class	20%
Environmental Intervention Research Paper	April 6, 2022 – Submit Last Class	20%
Final Exam	Exam Period TBD	30%
Total		100%

Description of Assignments:

1. Participation Self-Reflection Exercises **30%**

- Class #1: Complete sample problems on Qualtrics = 2%
- Class #2: Submit example of a nudge on eClass = 2%
- OpenMind Program (Classes 6 thru 10): 1 Initial Questionnaire, 8 Interactive Online Lessons (Completed outside of class time) and 4 Peer-to-Peer Conversations (Completed during class time) X 2% each = 26%

2. Examinations

Midterm **20%**

Makeup Exam Date: Wednesday March 2, 2022 at 8 am (Location to be announced)

Final Exam **30%**

Exam will be multiple choice, short answer and essay questions. Final exam will not be cumulative (that is, will only include content covered after Midterm exam).

3. Environmental Intervention Research Paper **20%**

Students will be asked to develop an idea for an “Environmental Intervention”. Some class time will be devoted to helping students develop their ideas in small groups. Each student will write a research proposal for their Environmental Intervention Project. This is intended to provide training in applying the concepts taught in this course to real-world problems, practice thinking about research methodologies to develop testable hypotheses and to develop scientific writing skills. Students will be asked to take into account methodological considerations in their design. Students will be asked to follow APA format in their research proposal. **The software platform Turnitin will be used to submit the course paper.**

TECHNICAL REQUIREMENTS

At least part of this course depends on remote teaching and learning. As such, there are technical requirements for taking the course. First off, a computer equipped with a webcam and microphone, as well as high speed internet access are musts. If you do not have access to any of these technological requirements, let us know within the first week of classes so that we can find a reasonable solution to help you complete the course. Several platforms may be used to support this course (eClass, Zoom). These platforms will allow you to interact with the course materials, the course director/assistant, as well as with one another.

eClass: All course materials will be available on the course eClass (formerly Moodle), unless otherwise indicated by the instructor. This will be your central access point for course information and materials.

Zoom: Zoom will be used for online classes. It is hosted on servers in the U.S. This includes recordings done through Zoom. If you have privacy concerns about your data, provide only your first name and first initial of your last name when you join a session. The system is configured in a way that all participants are automatically notified when a session is being recorded. In other words, a session cannot be recorded without you knowing about it.

Video: You may sometimes need to appear on video (e.g., for small group discussions during class or meeting with the professor/TA). If you have any concerns about appearing on video or do not have access to a webcam, please inform the course instructor within the first week of class.

Tech: Following are some useful links for you regarding computing information and resources: Student Guide to Moodle (eClass) Zoom@YorkU Best Practices Zoom@YorkU User Reference Guide Computing for Students Website Student Guide to eLearning at York University.

CLASS FORMAT AND ATTENDANCE POLICY

All classes will be conducted in-person or in a synchronous format when online. Students are expected to attend all classes. It is the students responsibility to catch up on any missed content by asking a classmate in the event that a class is missed.

GRADING AS PER SENATE POLICY

The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Assignments and tests* will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 89, B+ = 75 to 79, etc.)

For a full description of York grading system see the York University Undergraduate Calendar - [Grading Scheme for 2021-22](#)

MISSED/LATE ASSIGNMENTS

For any missed or late assignment, students **MUST** complete the following online form which will be received and reviewed in the Psychology Undergraduate Office. At this time, due to COVID-19 an Attending Physician's Statement (APS) is not required, however, a reason for missing an evaluated component in the course must be provided.

[HH PSYC: Missed Tests/Exams Form](#)

link: <https://psychology.apps01.yorku.ca/machform/view.php?id=16179>

Failure to complete the form within 48 hours of the original deadline will result in a grade of zero for the missed quiz or late assignment.

Reasonable considerations include unexpected medical circumstances. Non-medical circumstances will also be considered, including compassionate grounds, such as death in the family, accident or emergency travel.

Make up exams: Although the content coverage of a make-up exam is the same, the format may be different. Students may only write one make up exam.

INFORMATION ON PLAGIARISM DETECTION

To promote academic integrity in this course, you will be required to submit your written work (e.g., course paper) through Turnitin (within the course eClass). Turnitin reviews textual similarity and helps in the detection of possible plagiarism. By using this software, you are allowing your submitted material to be included as a source document in the Turnitin.com reference database, that will be used only for the purpose of detecting plagiarism. Terms applying to the University's use of the Turnitin service are described on Turnitin.com.

ADD/DROP DEADLINES

For a list of all important dates please refer to: [Fall/Winter 2021-22 Important Dates](#)

	Fall (Term F)	Year (Term Y)	Winter (Term W)
Last date to add a course without permission of instructor (also see Financial Deadlines)	Sept. 21	Sept. 21	Jan. 23
Last date to add a course with permission of instructor (also see Financial Deadlines)	Oct. 5	Oct. 26	Feb. 7
Drop deadline: Last date to drop a course without receiving a grade (also see Financial Deadlines)	Nov. 12	Feb. 11	18-Mar
Course Withdrawal Period (withdraw from a course and receive a grade of "W" on transcript – see note below)	Nov. 13 - Dec. 7	Feb. 12 - April 10	March 19 - April 10

Add and Drop Deadline Information:

There are deadlines for adding and dropping courses, both academic and financial. Since, for the most part, the dates are **different**, be sure to read the information carefully so that you understand the differences between the sessional dates below and the [Refund Tables](#).

You are strongly advised to pay close attention to the "Last date to enrol without permission of course instructor" deadlines. These deadlines represent the last date students have unrestricted access to the registration and enrolment system.

After that date, you must contact the professor/department offering the course to arrange permission.

You can drop courses using the registration and enrolment system up until the last date to drop a course without receiving a grade (drop deadline).

You may [withdraw from a course](#) using the registration and enrolment system after the drop deadline until the last day of class for the term associated with the course. When you withdraw from a course, the course remains on your transcript without a grade and is notated as 'W'. The withdrawal will not affect your grade point average or count towards the credits required for your degree.

ELECTRONIC DEVICE POLICY

At least part of this course will be delivered in an online format and therefore electronic devices (e.g., tablets, laptops) are permitted during class time for course-related purposes. It is expected that you would complete tests/exams in a manner that does not require consulting an unauthorised source during an examination unless the tests/exams are open-book.

ACADEMIC INTEGRITY FOR STUDENTS

York University takes academic integrity very seriously; please familiarize yourself with [Information about the Senate Policy on Academic Honesty](#).

It is recommended that you review Academic Integrity by completing the [Academic Integrity Tutorial](#) and [Academic Honesty Quiz](#).

STUDENT ETIQUETTE

You will sometimes be asked to engage with other students in small group exercises during class. This allows you to share your thoughts and questions about the course with one another. Appropriate and respectful behaviour in group discussions is essential.

Follow these guidelines to insure a safe space for all of you:

- Respect others. You, your peers, and the teaching team are real people who are affected by what you say and write. Be mindful of the opinions and feelings of others, even if they differ from your own. General rule: Don't say or write anything online that you would not say publicly.
- Pause before you speak and proofread before you send. Before sending an email, sending a message to a chat or responding to a discussion, review your response to ensure that it is clear, concise and respectful.
- Avoid strong language, all caps, and excessive exclamation points. It is very easy for written text to be misread and misunderstood. Watch out for strong language, and try to identify and avoid potential confusions in your wording before sending messages.
- Avoid slang and use standard English. This is a work environment so please avoid slang terms (e.g., wassup) and texting abbreviations (e.g., u instead of you).
- Avoid the use of emoticons and emojis. Be careful with humour and avoid sarcasm. The tone of a message is often lost in a written message and do not assume that everyone understands where you are coming from.
- Personal information and confidentiality. Do not reveal confidential information about yourself or others. You are, of course, free to share some personal anecdotes about your life if they are relevant to the topic or question being discussed, but keep in mind that the online space is shared and viewed by others in the course.
- Don't post or share inappropriate material. Be forgiving. Be mindful that for many students in this course, this will be a new way of interacting and that some may have more difficulty communicating in English. Be kind, patient, and understanding with your peers.

TEST BANKS

The offering for sale of, buying of, and attempting to sell or buy test banks (banks of test questions and/or answers), or any course specific test questions/answers is not permitted in the Faculty of Health. Any student found to be doing this may be considered to have breached the Senate Policy on Academic Honesty. In particular, buying and attempting to sell banks of test questions and/or answers may be considered as "Cheating in an attempt to gain an improper

advantage in an academic evaluation” (article 2.1.1 from the Senate Policy) and/or “encouraging, enabling or causing others” (article 2.1.10 from the Senate Policy) to cheat.

ACADEMIC ACCOMMODATION FOR STUDENTS WITH DISABILITIES

While all individuals are expected to satisfy the requirements of their program of study and to aspire to do so at a level of excellence, the university recognizes that persons with disabilities may require reasonable accommodation to enable them to do so. The university encourages students with disabilities to register with *Student Accessibility Services (SAS)* to discuss their accommodation needs as early as possible in the term to establish the recommended academic accommodations that will be communicated to Course Directors as necessary. **Please let me know as early as possible in the term if you anticipate requiring academic accommodation so that we can discuss how to consider your accommodation needs within the context of this course.**

<https://accessibility.students.yorku.ca/>

Excerpt from Senate Policy on Academic Accommodation for Students with Disabilities:

1. Pursuant to its commitment to sustaining an inclusive, equitable community in which all members are treated with respect and dignity, and consistent with applicable accessibility legislation, York University shall make reasonable and appropriate accommodations in order to promote the ability of students with disabilities to fulfill the academic requirements of their programs. This policy aims to eliminate systemic barriers to participation in academic activities by students with disabilities.

All students are expected to satisfy the essential learning outcomes of courses. Accommodations shall be consistent with, support and preserve the academic integrity of the curriculum and the academic standards of courses and programs. For further information please refer to: [York University Academic Accommodation for Students with Disabilities Policy](#).

COURSE MATERIALS COPYRIGHT INFORMATION

These course materials are designed for use as part of the Psychology 3255 course at York University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as book chapters, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law.

Copying this material for distribution (e.g. uploading material to a commercial third-party website) may lead to a violation of Copyright law. [Intellectual Property Rights Statement](#).

COURSE SCHEDULE		
Class/Date	Topic	Readings and Weekly Assignments
Class #1 January 12, 2022 ONLINE	<ul style="list-style-type: none"> ● Course Overview and Review Syllabus ● Why should we care about reasoning, judgment and decision-making? Defining <i>Rationality</i>. Introduction to the <i>Great Rationality Debate</i>. 	<p><u>Readings:</u></p> <ul style="list-style-type: none"> ● Chapter 1 ● Chapter 4, p. 93-97 <p><u>Assignments:</u></p> <ul style="list-style-type: none"> ● Read Course Syllabus Fully and Carefully ● Ensure Access to eClass ● Submit responses to sample questions on Qualtrics (Participation Exercise)
Class #2 January 19, 2022 ONLINE	<ul style="list-style-type: none"> ● Instrumental Rationality: “<i>What to do</i>” ● Framing Effects ● Temporal Discounting ● “Nudging”: Environmental Intervention Class Assignment 	<p><u>Readings:</u></p> <ul style="list-style-type: none"> ● Chapter 2
Class #3 January 26, 2022 ONLINE	<ul style="list-style-type: none"> ● Epistemic Rationality: “<i>What is true</i>” ● Overconfidence ● The Role of Knowledge: Knowledge can be helpful and <i>unhelpful</i> 	<p><u>Readings:</u></p> <ul style="list-style-type: none"> ● Chapter 3 ● Rozin, Scott, Dingley, Urbanek, Jiang, & Kaltenbach (2011). Nudge to nobesity I: Minor changes in accessibility decrease food intake. <i>Judgment and Decision Making</i>, 6 (4), 323-332. ● Dayan, E. & Bar-Hillel, M. (2011). Nudge to nobesity II: Menu positions influence food orders. <i>Judgment and Decision Making</i>, 6(4), 333-342. ● Detweiler, J. B., Bedell, B. T., Salovey, P., Pronin, E., & Rothman, A. J. (1999). Message framing and sunscreen use: Gain-framed messages motivate beach-goers. <i>Health Psychology</i>, 18(2), 189-196. <p><u>OPTIONAL/SUPPLEMENTARY READINGS</u></p> <ul style="list-style-type: none"> ● Bruine de Bruin, W., Parker, A. M., & Fischhoff, B. (2007). Individual differences in adult decision-making competence. <i>Journal of Personality and Social Psychology</i>, 92, 938-956. ● Koehler, D. J. (1991). Explanation, imagination, and confidence in judgment. <i>Psychological Bulletin</i>, 110(3), 499-519.

		<ul style="list-style-type: none"> • Stanovich, K. E. (2011). Contaminated mindware Chapter 11. <i>What intelligence tests miss: The psychology of rational thought</i>. Yale University Press.
Class #4 February 2, 2022	<ul style="list-style-type: none"> • Probabilistic and Statistical Thinking • Scientific Reasoning and Falsification Strategies 	<p><u>Readings:</u></p> <ul style="list-style-type: none"> • Chapter 3 (last week’s reading) provides overview of Probabilistic and Statistical Reasoning problems • Evans, J. St. B. T. (1996). Deciding before you think: Relevance and reasoning in the selection task. <i>British Journal of Psychology</i>, 87, 223-240. <p><u>OPTIONAL/SUPPLEMENTARY READINGS</u></p> <ul style="list-style-type: none"> • Fong, G. T., Krantz, D. H., & Nisbett, R. E. (1986). The effects of statistical training on thinking about everyday problems. <i>Cognitive Psychology</i>, 18(3), 253-292.
Class #5 February 9, 2022	<ul style="list-style-type: none"> • Miserly Information Processing • Review for Midterm (Adam) 	<p><u>Reading:</u></p> <ul style="list-style-type: none"> • Stanovich, K. E. (2018). Miserliness in human cognition: The interaction of detection, override and mindware. <i>Thinking and Reasoning</i>, 24(4), 423-444.
Class #6 February 16, 2022	<ul style="list-style-type: none"> • Midterm • Myside Bias – Part 1 • Introduction to OpenMind Program 	<p><u>Reading:</u></p> <ul style="list-style-type: none"> • Baron, J. (1995). Myside bias in thinking about abortion. <i>Thinking and Reasoning</i>, 1, 221-235. <p><u>Assignments:</u></p> <ul style="list-style-type: none"> • Ensure access to OpenMind (see instructions to students for logging in) • OpenMind Lessons 1 & 2 Available for Completion (Please complete for next class)
	READING WEEK	
Class #7 March 2, 2022	<ul style="list-style-type: none"> • Myside Bias – Part 2 • OpenMind Program: Review and Peer-to-Peer Conversation • The Great Rationality Debate and Dual Process Models 	<p><u>Readings:</u></p> <ul style="list-style-type: none"> • Chapters 4 and 5 <p><u>Assignments:</u></p> <ul style="list-style-type: none"> • OpenMind Lessons 3 & 4 Available for Completion (Please complete for next class)
Class #8 March 9, 2022	<ul style="list-style-type: none"> • The Development of Reasoning, Judgment and Decision-Making 	<p><u>Readings:</u></p> <ul style="list-style-type: none"> • Albert, D., & Steinberg, L. (2011). Judgment and decision making in adolescence. <i>Journal of</i>

	<ul style="list-style-type: none"> ● OpenMind Program: Review and Peer-to-Peer Conversation 	<p><i>Research on Adolescence</i>, 21(1), 211-224.</p> <ul style="list-style-type: none"> ● Toplak, M.E., West, R.F., & Stanovich, K.E. (2014). Rational thinking and cognitive sophistication: Development, cognitive abilities, and thinking dispositions. <i>Developmental Psychology</i>, 50(4), 1037-1048. <p><u>Assignments:</u></p> <ul style="list-style-type: none"> ● OpenMind Lessons 5 & 6 Available for Completion (Please complete for next class)
Class #9 March 16, 2022	<ul style="list-style-type: none"> ● Special Populations: The Iowa Gambling Task AND Maltreatment Populations ● OpenMind Program: Review and Peer-to-Peer Conversation 	<p><u>Readings:</u></p> <ul style="list-style-type: none"> ● Bechara, A., Damasio, A. R., Damasio, H., & Anderson, S. (1994). Insensitivity to future consequences following damage to human prefrontal cortex. <i>Cognition</i>, 50, 7-15. ● Weller, J. A., & Fisher, P. A. (2013). Decision-making deficits among maltreated children. <i>Child Maltreatment</i>, 18(3), 184-194. <p><u>Assignments:</u></p> <ul style="list-style-type: none"> ● OpenMind Lessons 7 & 8 Available for Completion (Please complete for next class)
Class #10 March 23, 2022	<ul style="list-style-type: none"> ● Clinical and Medical Decision-Making ● OpenMind Program: Review and Peer-to-Peer Conversation 	<p><u>Readings:</u></p> <ul style="list-style-type: none"> ● Dawes, R. M., Faust, D., & Meehl, P. E. (1989). Clinical versus actuarial judgment. <i>Science</i>, 243, 1668-1673. ● Kahneman, D., & Klein, G. (2009). Conditions for intuitive expertise: A failure to disagree. <i>American Psychologist</i>, 64(6), 515-526.
Class #11 March 30, 2022	<ul style="list-style-type: none"> ● Training Effects 	<p><u>Readings:</u></p> <ul style="list-style-type: none"> ● Lehman, D. R., & Nisbett, R. E. (1990). A longitudinal study of the effects of undergraduate training on reasoning. <i>Developmental Psychology</i>, 26, 952-960.
Class #12 April 6, 2022	<ul style="list-style-type: none"> ● Metareasoning and Metarationality ● Review and Final Exam Preparation (Adam) 	<p><u>Readings:</u></p> <ul style="list-style-type: none"> ● Chapter 6 ● Ackerman, R., & Thompson, V. (2017). Meta-reasoning: Monitoring and control of thinking and reasoning. <i>Trends in Cognitive Sciences</i>, 21(8), 607-617. <p><u>Assignments:</u></p> <ul style="list-style-type: none"> ● Final Paper Due – Submit on eClass