

**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)**  
**Winter 2021**

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**Instructor and T.A. Information:**

Instructor: M. Toplak

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Teaching Assistant: Adam Burnett

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**Course Prerequisite(s): Course prerequisites are strictly enforced:**

- 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 Credit Exclusions:**

Please refer to [York Courses Website](#) for a listing of any course credit exclusions.

**Course website:**

[eClass](#)

All course materials will be available on the course eClass site, unless otherwise indicated by the instructor. The site will be your central access point for course materials.

**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 information in psychology 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.

**Required Text:**

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

In addition, see readings below.

**Course Requirements and Assessment:**

<b>Assessment</b>	<b>Date of Evaluation</b>	<b>Weighting</b>
Participation Self-Reflection Exercises	Five classes to be announced 5 exercises X 2% each	10%
Knowledge Application Self-Reflection Exercises	Two classes to be announced 2 exercises X 7.5% each	15%
Environmental Intervention Research Paper	April 7, 2021	35%
Final Exam	Exam Period TBD	40%
<b>Total</b>		<b>100%</b>

**Description of Assignments:**

1. Participation Self-Reflection Exercises **10%**

Students will be asked to provide a self-reflection based on the content of five lecture topics. Each self-reflection exercise will be worth 2% and will go towards a participation grade. Each self-reflection will be due within 24 hours after the class in which it was assigned.

2. Knowledge Application Self-Reflection Exercises **15%**

Students will be asked to provide a self-reflection based on the content of two lecture topics. Each self-reflection exercise will be worth 7.5%, and these self-reflections will be graded based on demonstrations of understanding and applying content from the lecture. Each self-reflection will be due within one week after the class in which it was assigned.

3. Environmental Intervention Research Paper **35%**

Students will be asked to develop an idea for an “Environmental Intervention” 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.

4. Final Examination **40%**

Cumulative course content, but students should attend final class for detailed review session. Exam will be primarily short answer and essay questions, with the potential of some multiple choice questions. Exam will be open-book.

### **Class Format and Attendance Policy:**

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 2020-21](#)

### **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](#). 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.

### **Add/Drop Deadlines**

For a list of all important dates please refer to: [Fall/Winter 2020-21 Important Dates](#)

	<b>Fall (F)</b>	<b>Year (Y)</b>	<b>Winter (W)</b>
Last date to add a course <b>without permission</b> of instructor (also see Financial Deadlines)	Sept 22.	Sept 22.	Jan. 25
Last date to add a course <b>with permission</b> of instructor (also see Financial Deadlines)	Oct. 6	Oct. 27	Feb. 8
Drop deadline: Last date to drop a course without receiving a grade (also see Financial Deadlines)	Nov. 6	Feb. 5	March 12
Course Withdrawal Period (withdraw from a course and receive a grade of "W" on transcript – see note below)	Nov. 7- Dec. 8	Feb. 6 – April 12	March 13- April 12

### **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.

### **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](#)

### **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	Assignments
Class #1 January 13, 2021	<ul style="list-style-type: none"> <li>● Course Overview and Review Syllabus</li> <li>● Why should we care about reasoning, judgment and decision-making? Defining <i>Rationality</i>. Introduction to the <i>Great Rationality Debate</i>.</li> </ul>	<p><b><u>Readings:</u></b></p> <ul style="list-style-type: none"> <li>● Chapter 1</li> <li>● Chapter 4, p. 93-97</li> </ul> <p><b><u>Administrative:</u></b></p> <ul style="list-style-type: none"> <li>● Course Syllabus</li> <li>● Ensure Access to eClass</li> </ul>
Class #2 January 20, 2021	<ul style="list-style-type: none"> <li>● Instrumental Rationality: “<i>What to do</i>”</li> <li>● Framing Effects</li> <li>● Temporal Discounting</li> <li>● “Nudging”: Environmental Intervention Class Assignment</li> </ul>	<p><b><u>Readings:</u></b></p> <ul style="list-style-type: none"> <li>● Chapter 2</li> <li>● Rozin, Scott, Dingley, Urbanek, Jiang, &amp; Kaltenbach (2011). Nudge to nobesity I: Minor changes in accessibility decrease food intake. <i>Judgment and Decision Making</i>, 6 (4), 323-332.</li> <li>● Dayan, E. &amp; Bar-Hillel, M. (2011). Nudge to nobesity II: Menu positions influence food orders. <i>Judgment and Decision Making</i>, 6(4), 333-342.</li> <li>● Detweiler, J. B., Bedell, B. T., Salovey, P., Pronin, E., &amp; Rothman, A. J. (1999). Message framing and sunscreen use: gain-framed messages motivate beach-goers. <i>Health Psychology</i>, 18(2), 189-196.</li> </ul>

Class #3 January 27, 2021	<ul style="list-style-type: none"> <li>●Epistemic Rationality: “What is true”</li> <li>●Overconfidence</li> <li>●The Role of Knowledge: Knowledge can be helpful and <i>unhelpful</i></li> </ul>	<p><b><u>Readings:</u></b></p> <ul style="list-style-type: none"> <li>● Chapter 3</li> <li>● Bruine de Bruin, W., Parker, A. M., &amp; Fischhoff, B. (2007). Individual differences in adult decision-making competence. <i>Journal of Personality and Social Psychology</i>, 92, 938-956.</li> <li>● Koehler, D. J. (1991). Explanation, imagination, and confidence in judgment. <i>Psychological Bulletin</i>, 110(3), 499-519.</li> <li>● Stanovich, K. E. (2011). Contaminated mindware Chapter 11. <i>What intelligence tests miss: The psychology of rational thought</i>. Yale University Press.</li> </ul>
Class #4 February 3, 2021	<ul style="list-style-type: none"> <li>● Probabilistic and Statistical Thinking</li> <li>● Scientific Reasoning and Falsification Strategies</li> </ul>	<p><b><u>Readings:</u></b></p> <ul style="list-style-type: none"> <li>● Fong, G. T., Krantz, D. H., &amp; Nisbett, R. E. (1986). The effects of statistical training on thinking about everyday problems. <i>Cognitive Psychology</i>, 18(3), 253-292.</li> <li>● 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.</li> </ul>
Class #5 February 10, 2021	<ul style="list-style-type: none"> <li>● Miserly Information Processing</li> </ul>	<p><b><u>Reading:</u></b></p> <ul style="list-style-type: none"> <li>● Stanovich, K. E. (2018). Miserliness in human cognition: The interaction of detection, override and mindware. <i>Thinking and Reasoning</i>, 24(4), 423-444.</li> </ul>
<b>READING WEEK</b>		
Class #6 February 24, 2021	<ul style="list-style-type: none"> <li>● Myside Bias</li> </ul>	<p><b><u>Reading:</u></b></p> <ul style="list-style-type: none"> <li>● Baron, J. (1995). Myside bias in thinking about abortion. <i>Thinking and Reasoning</i>, 1, 221-235.</li> </ul>
Class #7 March 3, 2021	<ul style="list-style-type: none"> <li>●The Great Rationality Debate and Dual Process Models</li> </ul>	<p><b><u>Readings:</u></b></p> <ul style="list-style-type: none"> <li>●Chapters 4 and 5</li> </ul>
Class #8 March 10, 2021	<ul style="list-style-type: none"> <li>●The Development of Reasoning, Judgment and Decision-Making</li> </ul>	<p><b><u>Readings:</u></b></p> <ul style="list-style-type: none"> <li>● Albert, D., &amp; Steinberg, L. (2011). Judgment and decision making in adolescence. <i>Journal of Research on Adolescence</i>, 21(1), 211-224.</li> </ul>

		<ul style="list-style-type: none"> <li>● Toplak, M.E., West, R.F., &amp; Stanovich, K.E. (2014). Rational thinking and cognitive sophistication: Development, cognitive abilities, and thinking dispositions. <i>Developmental Psychology</i>, 50(4), 1037-1048.</li> </ul>
Class #9 March 17, 2021	<ul style="list-style-type: none"> <li>● Special Populations: The Iowa Gambling Task AND Maltreatment Populations</li> </ul>	<p><b>Readings:</b></p> <ul style="list-style-type: none"> <li>● Bechara, A., Damasio, A. R., Damasio, H., &amp; Anderson, S. (1994). Insensitivity to future consequences following damage to human prefrontal cortex. <i>Cognition</i>, 50, 7-15.</li> <li>● Weller, J. A., &amp; Fisher, P. A. (2013). Decision-making deficits among maltreated children. <i>Child Maltreatment</i>, 18(3), 184-194.</li> </ul>
Class #10 March 24, 2021	<ul style="list-style-type: none"> <li>● Clinical and Medical Decision-Making</li> </ul>	<p><b>Readings:</b></p> <ul style="list-style-type: none"> <li>● Dawes, R. M., Faust, D., &amp; Meehl, P. E. (1989). Clinical versus actuarial judgment. <i>Science</i>, 243, 1668-1673.</li> <li>● Kahneman, D., &amp; Klein, G. (2009). Conditions for Intuitive Expertise: A Failure to Disagree. <i>American Psychologist</i>, 64(6), 515–526.</li> </ul>
Class #11 March 31, 2021	<ul style="list-style-type: none"> <li>● Training Effects</li> </ul>	<p><b>Readings:</b></p> <ul style="list-style-type: none"> <li>● Lehman, D. R., &amp; Nisbett, R. E. (1990). A longitudinal study of the effects of undergraduate training on reasoning. <i>Developmental Psychology</i>, 26, 952-960.</li> </ul>
Class #12 April 7, 2021	<ul style="list-style-type: none"> <li>● Metareasoning and Metarationality</li> <li>● Review and Final Exam Preparation</li> </ul>	<p><b>Readings:</b></p> <ul style="list-style-type: none"> <li>● Chapter 6</li> <li>● Ackerman, R., &amp; Thompson, V. (2017). Meta-reasoning: Monitoring and control of thinking and reasoning. <i>Trends in Cognitive Sciences</i>, 21(8), 607-617.</li> </ul>