

Course Description (v1)
HH/PSYC 3550 3.0 A (F2020-21) Creativity

<p>Section: 3550.03A F 2020 Time: N/A (online) Rm: N/A (online)</p>	<p>Course Director: Prof. Vinod Goel Office: Lab: BSB 037 Tel: Lab Ext. 30400 Email: vgoel@yorku.ca Office Hrs: Tuesdays @ 2:30pm/9pm (via Zoom) TA1: TA contact info: Office Hrs:</p>
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Course Prerequisites: Psych 1010 with a minimum C grade and completed at least 54 earned credits.

Drop Date: Nov. 6, 2020.

General Description: this is an introductory course on the psychology of creativity. Creativity is a nebulous, complex topic. This course provides you with three snapshots of it. The first snapshot is historical. It covers the work on creativity, personality and IQ that dominated the field in the early days. The second snapshot is from the framework of cognitive psychology, whereby creativity is viewed as a form of problem-solving within an information processing theory framework. The third snapshot is from the current work on creativity from the perspective of cognitive neuroscience. It focuses on the neural basis of creative problem-solving. The course will provide a basic understanding of the issues and challenges involved in developing theories of creativity.

Course website: <https://eclass.yorku.ca/eclass/course/view.php?id=13036>

Class Format: This is an online course. I will provide pre-recorded video lectures, copies of overhead slides, and readings for each topic on the Moodle/eClass webpage for the course. When and how you choose to engage the material is up to you. *However, I will assume a nominal day of Thursday for the class.* All of the dates in the schedule (except test dates) are based on this assumption. You must allow yourself 10-15 hours each week if you are going to succeed. If you do not have the time or discipline to do this, this may not be the right course and/or course format for you.

Virtual Office hours and communication: As this is an online course, we will have virtual office hours via Zoom on the day and time indicated above for office hours. This will be an opportunity for you to ask administrative and content questions. However, administrative questions are already dealt with in this document, so it is largely content questions that you should be raising during the virtual office hours.

Email correspondence: Please note that I will generally not answer questions via email. I have peripheral nerve damage in my hands which makes it extremely difficult and painful to type. If

you cannot meet with me during the virtual office hour, send me an email to make an appointment at an alternative time. In all emails that you send me, you must put the course ID number in the subject line, otherwise it is apt to get lost among my hundreds of emails each day.

Learning Objectives: Your immediate learning objectives should be to use the course content and exercises to develop reading, writing, and critical evaluation skills. See below for more specific learning outcomes.

Requirements & Assessment:

- 1) Term Paper (45% of grade)
 - Details attached below.
- 2) Participation in question answering exercises (10% of grade)
 - Details attached below.
- 3) Three tests (45% of grade)
 - Details attached below.

Text and Articles

R. Keith Sawyer (2012). *Explaining Creativity* (2nd Edition). Oxford.
No need to buy. Online version available in Library.

Articles (available on Moodle/eClass)

Cognitive Science of Creativity

- Ollinger, M. & Goel, V. (2010). Problem-Solving. In B. Glatzeder, V. Goel, & a von Müller (Eds), *Towards a Theory of Thinking*. Springer.
- Öllinger, M., Jones, G., Faber, A. H., & Knoblich, G. (2013). Cognitive mechanisms of insight: The role of heuristics and representational change in solving the eight-coin problem. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 39(3), 931–939. <http://doi.org/10.1037/a0029194>
- Goel, V. (2014). Creative brains: designing in the real world. *Frontiers in Human Neuroscience*, 8(241).
- Gabora, L. (2010). Revenge of the “Neurds”: Characterizing Creative Thought in Terms of the Structure and Dynamics of Memory. *Creativity Research Journal*, 22(1), 1–13. <http://doi.org/10.1080/10400410903579494>
- Öllinger, M., Jones, G., & Knoblich, G. (2008). Investigating the Effect of Mental Set on Insight Problem Solving. *Experimental Psychology*, 55(4), 269–282. <http://doi.org/10.1027/1618-3169.55.4.269>

Neuroscience of Creativity

- Dietrich, A., & Kanso, R. (2010). A review of EEG, ERP, and neuroimaging studies of creativity and insight. *Psychological Bulletin*, 136(5), 822–848. <http://doi.org/10.1037/a0019749>

- Goel, V. (2014). Creative brains: designing in the real world. *Frontiers in Human Neuroscience*, 8(241). <http://doi.org/10.3389/fnhum.2014.00241>
- Goel, V. (2015). Indeterminacy tolerance as a basis of hemispheric asymmetry within prefrontal cortex. *Frontiers in Human Neuroscience*, 9. <http://doi.org/10.3389/fnhum.2015.00326>
- Goel, V., Eimontaite, I., Goel, A., & Schindler, I. (2015). Differential Modulation of Performance in Insight and Divergent Thinking Tasks with tDCS. *The Journal of Problem Solving*, 8(1). <http://doi.org/10.7771/1932-6246.1172>
- Jung-Beeman, M., Bowden, E. M., Haberman, J., Frymiare, J. L., Arambel-Liu, S., Greenblatt, R., ... Kounios, J. (2004). Neural activity when people solve verbal problems with insight. *PLoS Biol*, 2(4), E97.
- Kounios, J., & Beeman, M. (2009). The Aha! Moment The Cognitive Neuroscience of Insight. *Current Directions in Psychological Science*, 18(4), 210–216. <http://doi.org/10.1111/j.1467-8721.2009.01638.x>
- Kounios, J., & Beeman, M. (2014). The Cognitive Neuroscience of Insight. *Annual Review of Psychology*, 65(1), 71–93. <http://doi.org/10.1146/annurev-psych-010213-115154>
- Shamay-Tsoory, S. G., Adler, N., Aharon-Peretz, J., Perry, D., & Mayseless, N. (2011). The origins of originality: The neural bases of creative thinking and originality. *Neuropsychologia*, 49(2), 178–185. <http://doi.org/10.1016/j.neuropsychologia.2010.11.020>
- Sowden, P. T., Pringle, A., & Gabora, L. (2015). The shifting sands of creative thinking: Connections to dual-process theory. *Thinking & Reasoning*, 21(1), 40–60. <http://doi.org/10.1080/13546783.2014.885464>

Readings must be completed and associated questions answered prior to the relevant class.

Readings: You have been assigned chapters in the textbook for the first third of the course. You should find this easy reading. For the balance of the course we will rely upon individual chapters or journal articles. These are all made available to you on Moodle. You may find these more challenging reading. The continuity here will be provided by the lectures. If you encounter difficulty with the articles, begin by listening to the lecture video. Read the participation questions associated with the lecture/topic. Then go through the readings again with this context. They should make much more sense. The lecture videos and the weekly questions provide you a guideline as to what is important in the readings, and what is not.

Tests (45%):

There will be three tests on the dates and time indicated on the schedule. The tests will be written online, as per University requirements. It is also a University requirement that tests for online courses be held on Sundays. The grade value of each test is indicated on the weekly schedule. The test material will be based on the lectures, the textbook, and the indicated articles. The format of the tests is to be determined.

Missed Tests: Students are expected to write each test on the dates and times specified. Test dates and times are not negotiable. **If you miss a mandatory piece of course work for no acceptable documented reasons, you will receive a grade of zero.** If you have a legitimate reason (e.g., death in the family, severe illness) for being excused from a test/exam, and have documentation to verify your absence, you may write a make-up test, in lieu of the missed test/exam, on a date and time to be determined by the instructor. You MUST be available at this

date and time as it will be the only chance to write a makeup if you miss a scheduled test. *Please note that one consequence of missing the scheduled test will be that you will not receive the usual grade feedback by the drop date.* There is no makeup test for the makeup test.

In addition, for any missed tests or late assignments, students **MUST** complete the following online form which will be received and reviewed in the Psychology undergraduate office.

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 test/assignment.

Term Paper (45%):

Write an academic term paper (15-20 pages + references) addressing an issue as per the provided description. The paper will be graded not only for content, but also your ability to organize and express your thoughts in a structured, systematic, coherent fashion, using grammatical English sentences organized into paragraphs and sections. Term papers may be submitted to Turnitin or Google or other engines to check for plagiarism. See further details below.

Late Term Papers and Assignments:

The term paper is due on the days indicated in the course schedule. Late assignments will be penalized 5% per calendar day and ***will not receive feedback***. *No assignments will be accepted after the last day of term.* As you will always have at least 2-3 weeks to complete the assignment, a doctor's note indicating illness will usually not suffice to waive the penalty. To be considered, a doctor's note must indicate that you were incapable of working for at least two weeks during the course of the semester. The late penalty will also apply to the topic approval date.

Grades Appeal/Correction: Any questions or concerns regarding grades on tests and assignments must be raised with the instructor within 10 days of the posting of the grade.

Participation Grade (10%):

Each week you will receive questions to guide you through the weekly readings. You will submit written answers to these questions by the specified dates and times. Once you have submitted your answers through Moodle, you will be able to see the answers submitted by other students. *These questions are very similar to the short answer questions that you will see on the tests.* Answering these questions will get you participation grades and help you study for the tests. Please note the submission dates on the schedule. The submission time is midnight. The system will not accept late submissions. As this is meant to be a weekly exercise to encourage you to keep up with the readings, no extensions will be granted.

Grades and Entitlements:

I routinely apply a statistical adjustment to grades to make sure they fall into the expected range. In the last 20+ years, this has always resulted in higher grades. However, there is always the possibility that on any specific course component, your grade may be adjusted downwards. If you do not wish your grade to be adjusted, and want the actual raw grade that you have received on every piece of work, please send me an email by the end of the first week of classes, indicating this. If I do not receive this email, your grades will be part of any adjustment. I advise participating in the adjustment.

You are entitled only to the grade that you **earn** in this course. Nothing else. I will **not** increase your grade just because "you need at least a x grade to graduate; or you need a y grade to get into some other program; or you need a z grade to maintain your scholarship;" etc. It is not fair to other students. If you need a certain grade in this course, please do the required work.

Plagiarism is the passing off of someone else's words and ideas as you own. This is a very serious academic offense. Do your own assignments and acknowledge all your sources. Turnitin software may be used to check for plagiarism on written work. The penalty for plagiarism will be in accordance with the Senate Policy on Academic Honesty which can be found at the following URLs, along with resources to help you avoid plagiarism:

- [Information about the Senate Policy on Academic Honesty](#)
- [Online Tutorial on Academic Integrity](#)
- [Information for Students on Text-Matching Software: Turnitin.com](#)
- [Beware! Says who? A pamphlet on how to avoid plagiarism](#)

[Resources for students to help improve their writing and research skill](#)

Student Feedback: I welcome constructive comments on course organization, lectures (content, style, presentation), assignments, etc.

Office Hours: Make use of the office hours. They are for your benefit.

3550.03A Creativity
Fall 2020-21, Online (Nominal day: Thursday)
Proposed Schedule

Topic	Date	Lecture Topics	Readings	Assignments
<i>Introduction to and Assessment of Creativity</i>				
1	Sept. 10	Course Introduction Showing of film: “The man who knew infinity”	<i>See moodle/eClasses</i>	Assignment due
2	Sept. 17	What is creativity? Examples, intuitions, types, assessment etc.		Assignment due
3	Sept. 24	Approaches to Creativity Research • Assessment of Creativity • Intelligence and creativity • Personality and creativity		Approval for term paper topic Assignment due
4	Oct. 4, 2:30pm	Test 1 (15%)		
<i>Cognitive Science of Creativity</i>				
5	Oct. 8	Cognitive Psychology/PS		Assignment due
	Oct. 15	Reading Week		Term paper due
6	Oct. 22	8 stage model of creativity		Assignment due
7	Oct. 29	Have we explained anything?		
8	Nov. 8, 2:30pm	Test 2 (15%)		
<i>Neuroscience of Creativity</i>				
9	Nov. 12	Neurobiology of creativity • How to study the creative brain - methodology		Assignment due
10	Nov. 19	Creative brain		Assignment due
11	Nov. 26	Left Brain / Right Brain		Assignment due
12	Dec. 3, 4:30pm	Test 3 (15%)		

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Term paper guidelines

You will be required to write a term paper for this class that will be worth 45% of your final class grade.

The most widespread contemporary definition of creativity is a process that leads to a novel and useful solution *within a relevant context*. The idea behind this term paper is to give you the opportunity to be creative—by formulating, suggesting, or generating a solution to a problem that is in need of a creative solution. According to the aforementioned criterion, for your proposed solution to have merit it must be (a) novel, and (b) useful within its context.

For example, you could decide to focus on the problem of school underachievement. In your paper you would first have to define what is meant by school underachievement (e.g., obtaining a grade that is lower than the average for that cohort, etc.). Next, you would analyze various factors that have been shown to be relevant to school underachievement (e.g., nutrition, intelligence, SES, motivation, etc.). Next, you would then conduct a literature review of various approaches that have been used in the past to address the problem of school underachievement, in the process assessing their varying levels of success. You would end by proposing your creative solution. Some creative solutions are *de novo*—meaning that they are entirely new approaches to a problem. In contrast, other creative solutions might be hybrids or novel combinations of ideas that have existed individually before. Both varieties of solutions will be acceptable for this assignment. In addition, creative ideas also have the quality of elegance—defined as a combination of beauty, simplicity, efficiency, and ease of use or implementation.

To maximize your enjoyment of working on this assignment, it is important to choose a topic that you feel passionate about. This will motivate you to think about it, and increase the likelihood of coming up with a creative solution.

Please note the following:

1. You must make use of the available peer-reviewed literature in supporting your claims.
2. You must have your choice of problem approved in advance by one of the Teaching Assistants by the specified date. Paper late penalty will apply.
3. You must use some accepted method of referencing/citing sources.
4. Length should be approximately 15-20 pages plus references, double spaced.

The paper will be graded on the following seven criteria:

1. Grammar, structure, organization, and coherency of argument (0-20 points)
2. Definition of the problem (0-2.5 points)
3. Analysis of the factors relevant to the problem (0-5 points)
4. Review of the background literature (0-7.5 points)
5. Novelty of the solution (0-5 points)
6. Usefulness of the solution (0-2.5 points)
7. Elegance of the solution (0-2.5 points)

Other Information

Learning Outcomes

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

1. Demonstrate in-depth knowledge of the psychology of creativity.
2. Articulate trends in the psychology of creativity.
3. Express psychological knowledge of creativity in written form.
4. Describe and explain limits to generalizability of research findings in creativity.
5. Demonstrate ability to relate information in the psychology of creativity to own and others' life experiences.

Add/Drop Deadlines

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

	Fall (F)	Year (Y)	Winter (W)
Last date to add a course without permission of instructor (also see Financial Deadlines)	Sept 22.	Sept 22.	Jan. 25
Last date to add a course with permission 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.

Information on Plagiarism Detection

Google and Turnitin will be used to detect plagiarism.

Electronic Device Policy

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](#)

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 Psych 3550 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.

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