

Course Description

HH/PSYC 3550 3.0 A (F2016) Creativity

<p>Section: 3550.03A F 2016 Time: Wednesday, 11:30AM - 2:30 PM Rm: CLH E</p>	<p>Course Director: Prof. Vinod Goel Office: Lab: BSB 037 Tel: Lab Ext. 30400 Email: vgoel@yorku.ca Office Hrs: Tues, 6:00pm</p> <p>TA: Weipeng Jih TA contact info: weipengjih@gmail.com</p> <p>Office Hrs:</p>
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Course Prerequisites: Psych 1010 with a minimum C grade.

Drop Date: Nov. 11, 2016.

Important Note regarding E-Mail/Internet Use: I suffer from severe pains in my arms. This prevents me from doing any significant typing. Therefore, please do not send me e-mail, except to make an appointment to meet in person. I will not be able to read and respond to it in a timely manner. I'm happy to answer your questions in class, during the tutorial, during my office hours, or make an appointment to meet with you. I will also stay at the end of each lecture to answer individual questions.

Course website: [Moodle](#)

General Description: An introduction to the psychological study of creativity, including modern theories of creativity, assessment of creativity, individual differences in creativity, creativity in the arts and sciences, the relationship between intelligence and creativity, and the neuroscience of creativity.

Class Format: Lecture.

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.

Specific Learning Objectives

Your immediate learning objectives should be to use the course content and exercises to develop reading, writing, and critical evaluation skills.

Requirements & Assessment:

- 1) One assignment/paper (30% of grade)
 - Details attached below.
- 2) Participation in question answering exercises (10% of grade)
 - Details attached below.
- 3) Three tests (60% of grade)
 - Details attached below.

Text And Articles

R. Keith Sawyer (2012). *Explaining Creativity* (2nd Edition). Oxford. (Recommended.... Will read sections from Part 1 & 2).

Articles (available on Moodle)

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.

Assignment (30%):

Term paper. See below.

Late Assignments: Assignments are due at the beginning of class on the day(s) indicated on the attached Schedule. Late assignments will be penalized ONE point per calendar day. As you will always have at least 2-3 weeks to complete an 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 half the number of days between the handing out the assignment and the due date. No assignments will be accepted after the last day of class.

Tests (60%):

There will be three in-class tests on the dates indicated on the schedule. Each test will have a duration of two hours and will consist of multiple choice questions and written essay questions. The ratio of multiple-choice to written essay questions will not be known in advance. Please do not ask. The tests will be cumulative. 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.

Makeup Tests: Students are expected to write each test on the dates specified. **If you miss a mandatory piece of course work for no documented reasons, you will receive a grade of zero.** If you have a legitimate reason (e.g., death in the family, severe illness, etc.) 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 the date specified on the schedule. You **MUST** keep this date and time open 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 first scheduled test will be that you will not receive the usual grade feedback by the drop date. Furthermore, given the limited*

number of multiple-choice questions available, there may be fewer or no multiple-choice questions on the makeup tests. The makeup tests will consist largely or exclusively of written essay and short answer questions. There is no makeup test for the makeup test.

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. Once you have submitted your answers through Moodle, you will be able to see the answers submitted by other students. We will indicate some of the good answers to the questions prior to the tests. 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. The 10 participation points are evenly divided over the question sets.

Grades and Entitlements:

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. 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
F/2016, Wednesday, 11:30 AM-2:30 PM
Proposed Schedule

Topic	Date	Lecture Topics	Readings	Assignments
<i>Introduction to and Assessment of Creativity</i>				
1	Sept. 14	What is creativity? Examples, intuitions, types, assessment etc.		
2	Sept. 21	No Class Extra Readings/Exercises		
3	Sept. 28	Assessment of Creativity Approaches to Creativity Research • Intelligence and creativity • Personality and creativity • Development of creativity??		
4	Oct. 5	Test 1 (25%)		
<i>Cognitive Science of Creativity</i>				
5	Oct. 12	Cognitive Psychology/PS		
6	Oct. 19	8 stage model of creativity		
7	Oct. 26	Have we explained anything?		Test 1 grades posted
8	Nov. 2	Test 2 (25%)		
<i>Neuroscience of Creativity</i>				
9	Nov. 9	Neurobiology of creativity • How to study the creative brain - methodology		
10	Nov. 16	Creative brain		Term paper due
11	Nov. 23	Modulating creativity		
12	Nov. 30	Test 3 (20%)		

Note: Readings must be completed prior to the relevant class.

Term paper guidelines

You will be required to write a term paper for this class that will be worth 40% 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, (b) useful within its context. Importantly, however, you must apply the knowledge that you have gained in this course to analyze the nature of the problem under consideration.

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 in relation to it. The

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 or me via email no later than November 12th 2014.
3. The final paper must follow A.P.A (6th Ed.) publication guidelines.
4. The total word limit must be within the 2,000–3,000 range (excluding references).
5. You must include a minimum of 5 references to the literature.
6. **A hard copy of the term paper must be handed in on the assigned date. No electronic copy will be accepted via email or otherwise.**

These are six criteria based on which the term paper will be graded (out of 40):

1. Definition of the problem (0-5 points)
2. Analysis of the factors relevant to the problem (0-5 points)
3. Review of the background literature (0-10 points)
4. Novelty of the solution (0-5 points)
5. Usefulness of the solution (0-5 points)
6. Elegance of the solution (0-5 points)

7. Presentation according to A.P.A (6th Ed.) publication guidelines (0-5 points)

Other Information

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 90, B+ = 75 to 79, etc.)

(For a full description of York grading system see the York University Undergraduate Calendar - calendars.students.yorku.ca/2016-2017/academic-and-financial-information/academic-services/grades-and-grading-schemes)

Important dates	Fall (F)	Year (Y)	Winter (W)
Last date to add a course without permission of instructor (also see Financial Deadlines)	Sept. 21	Sept. 21	Jan. 18
Last date to add a course with permission of instructor (also see Financial Deadlines)	Oct. 5	Oct. 19	Feb. 1
Last date to drop a course without receiving a grade (also see Financial Deadlines)	Nov. 11	Feb. 10	March 10
Course Withdrawal Period (withdraw from a course and receive a “W” on the transcript – see note below)	Nov. 12 - Dec. 5	Feb. 11 - Apr. 5	March 11 - Apr. 5

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 [York University Accessibility Hub](#) is your online stop for accessibility on campus. The [Accessibility Hub](#) provides tools, assistance and resources. Policy Statement

Policy: York University shall make reasonable and appropriate accommodations and adaptations in order to promote the ability of students with disabilities to fulfill the academic requirements of their programs.

The nature and extent of accommodations shall be consistent with and supportive of the integrity of the curriculum and of the academic standards of programs or courses.

Provided that students have given sufficient notice about their accommodation needs, instructors shall take reasonable steps to accommodate these needs in a manner consistent with the guidelines established hereunder.

For Further Information please refer to: [York university academic accommodation for students with disabilities policy](#)

Course Materials Copyright Information

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August 28, 2016

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