

Course Description v2

HH/PSYC 3550 3.0 A (F2019-20) Creativity

Section: 3550.03A F 2019 Time: 2:30 - 5:30 PM Rm: CLH K	Course Director: Prof. Vinod Goel Office: Lab: BSB 037 Tel: Lab Ext. 30400 Email: vgoel@yorku.ca Office Hrs: Tues. 5:30 – 6:30pm (BSB 037) TA1: Steven Baker TA contact info: bakerst@yorku.ca Office Hrs: Prior to class
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Course Prerequisites: Psych 1010 with a minimum C grade.

Drop Date: Nov. 8, 2019.

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. *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.* 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: <https://moodle.yorku.ca/moodle/course/view.php?id=151480>

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 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) 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.
No need to buy. Online version available in Library.

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.

Term Paper (30%):

Write an academic term paper (15-20 pages) addressing one of the questions from the provided list. 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 one grade point 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.

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 written essay questions. There will be no multiple choice questions. 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.

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 the specified date (TBA). 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.* 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.

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 your 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 2019-20, Tuesday, 2:30 - 5:30 PM
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</i>	
2	Sept. 17	What is creativity? Examples, intuitions, types, assessment etc.		
3	Sept. 24	Approaches to Creativity Research • Assessment of Creativity • Intelligence and creativity • Personality and creativity		Approval for term paper topic
4	Oct. 1	Test 1 (20%)		
<i>Cognitive Science of Creativity</i>				
5	Oct. 8	Cognitive Psychology/PS		
	Oct. 15	Reading Week		Term paper due Test 1 grades posted
6	Oct. 22	8 stage model of creativity		
7	Oct. 29	Have we explained anything?		
8	Nov. 5	Test 2 (20%)		
<i>Neuroscience of Creativity</i>				
9	Nov. 12	Neurobiology of creativity • How to study the creative brain - methodology		
10	Nov. 19	Creative brain		
11	Nov. 26	Modulating creativity		
12	Dec. 3	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 30% 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.

The paper will be graded on the following seven criteria:

1. Grammar, structure, organization, and coherency of argument (0-15 points)
2. Definition of the problem (0-2.5points)
3. Analysis of the factors relevant to the problem (0-2.5 points)
4. Review of the background literature (0-5 points)
5. Novelty of the solution (0-2.5 points)
6. Usefulness of the solution (0-1.25 points)
7. Elegance of the solution (0-1.25 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.

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)

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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