Psychology 3312

Memory and Cognition

Course Syllabus, Spring 2015

Course: PSYCH 3312
Call number: 23507 (morning) and 23508 (afternoon section)
Credits: 3
Dates: January 13 – May 04, 2015
Times: Tuesdays & Thursdays 9:35–10:55 a.m. (morning section, 23507)
       Tuesdays & Thursdays 12:45–2:05 p.m. (afternoon section, 23508)
Room: Hitchcock Hall, Room 031 (HI031, morning section, 23507)
       Psychology Bldg, Room 002 (PS002, afternoon section, 23508)
Prerequisites: Introductory Psychology (Psych1100, 1100H, 100, or 100H).
             Not open to students with credit for Psych312.
Websites: https://carmen.osu.edu and http://alexpetrov.com/teach/lmc/
Instructor: Dr. Alexander Petrov
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            200B Lazenby Hall
            (614) 247-2734
            Office hours: by appointment
Course Assistant: Achik Haim
                  psych312@cogmod.osu.edu
                  B75 Psychology Building
                  Office hours: by appointment

Course Overview

This course surveys selected topics in modern cognitive psychology with an emphasis on memory, categorization, thinking, and problem solving. It is intended for undergraduate students with basic knowledge of psychology (prerequisite Psych 1100). Some questions we will consider are: What is cognitive psychology and how does it fit into the broader framework of cognitive science? What methods do scientists use to study memory and high-level cognition? What behavioral regularities characterize human and animal memory? What kinds of memory are there? Where does memory reside in the brain? What are some important theories and models of memory? What are their strengths and weaknesses? How does one evaluate a scientific theory? Can memory research help us study and remember better? Are the testimonies of honest eyewitnesses always reliable? How do people classify things into categories? How are concepts represented and organized in semantic memory? Are humans fundamentally rational or irrational? What tools allow us to construct, and to understand, a reasoned argument? What tools allow us to recognize a fallacious or fraudulent argument? What is the distinction between deductive and inductive reasoning? How do people solve problems? What is the role of insight in problem solving? Can the creative process be studied scientifically and, if so, how? How can fluid intelligence and creativity be measured? Can they be improved?
Course Objectives

Upon successful completion of the course the students should:

- know a representative sample of empirical and theoretical results in the scientific study of memory, categorization, and high-level cognition, as illustrated by the questions in the Course Overview above
- understand the evidence behind these results
- appreciate the main educational and legal applications of these findings

In addition, the students will enhance and solidify their ability to:

- think critically, evaluate arguments, and detect logical gaps, fallacies, and inconsistencies
- understand and evaluate scientific theories
- reason on the basis of scientific evidence
- apply scientific theories to everyday problems
- read and understand peer-reviewed research articles and compare that information with textbook and popular writing

Course Materials


The book is available for purchase from the university bookstore and many other vendors. Electronic copies can be accessed on reserve via the Thompson Library. We will supplement the textbook with additional required readings. A complete reading list appears at the end of this syllabus. The Carmen website (http://carmen.osu.edu) is an indispensable resource. All additional readings are available for download from Carmen in PDF format, together with PowerPoint slides, videos, and various other materials.

Evaluation

Your final grade in this course will be determined on the basis of three in-class exams, the final exam, and pop quizzes given throughout the semester. The maximum number of points for the course is 200, which are converted to a letter grade according to the following cut-off ranges:

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<td>B+</td>
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<td>153</td>
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The instructor and the course assistant make every effort to ensure that the grades are accurate, fair, and consistent. Nobody is immune to mistakes, however. If you believe that your test and/or pop-quiz results are in error, please let us know no later than one week after the results are announced. Such notifications must be made in writing and
emailed to psych312@cogmod.osu.edu. We will review your complaint carefully and answer by email or invite you to a personal meeting with Dr. Petrov to discuss the issue. Complaints about test results, pop-quiz results, or anything else that affects your grade will not be considered or discussed unless a written statement was emailed to psych312@cogmod.osu.edu in advance. Messages sent to any other email account will be ignored. There are no exceptions to these rules.

Tests, Pop Quizzes, Extra Credit, and Attendance Policy

As we will learn in the course, people remember much better when they study on a regular basis rather than cramming for a final exam. The organization of this course capitalizes on this important property of memory. There will be three in-class exams, a final exam, and pop quizzes throughout the semester. All exams are closed-book multiple-choice tests. If you miss an exam, it will be graded with zero points. Acceptable excuses for missing an exam are a death in your family, personal illness or the illness of your child or spouse, and unforeseen accidents such as getting stuck in an elevator. I will need official documented proof of these events should they occur. Makeup exams will only be given in cases of documented emergency or when prior approval has been given to miss the exam. Note that if you are not sick enough to go to the doctor, you are not sick enough to miss the exam. If you are late for the test, you will be allowed to take it but you must submit your answer sheet by the closing time like everybody else. Please bring a photo ID, a #2 pencil, and an eraser to the test room. Once the test begins, no questions about any test item are allowed. Please do not leave your seat until you are ready to turn your answer sheet in. After you turn it in, leave the test room immediately.

The tests are based on material from the lectures, the textbook, the additional required readings, and on certain videos that are clearly marked in the lecture slides and linked on Carmen. The three in-class exams are non-cumulative, whereas the final exam covers the material from the entire semester. Each exam is worth 60 points. Everyone can have a bad day. That is why your worst test score will be dropped from the evaluation. In other words, only the three best scores of the four tests will count toward your grade. The total number of points that can be earned for the exams is 180. As you probably already figured out, this technically means that if you are happy with your scores on the three in-class exams, you can skip the final.

The remaining 10% of your grade will be determined on the basis of very short pop quizzes given at the end of class on randomly chosen dates throughout the semester. Each pop quiz is worth 2 points and typically consists of two short-answer questions about the previous lecture. You can earn 0, 1, or 2 points per quiz depending on the quality of your answers, which are graded by the course assistant and the results are posted on Carmen. Illegible handwriting will be graded with 0 pts. Mathematically, 10 quizzes are sufficient to earn a perfect overall score for the course: 180 test points + 20 quiz points = 200 total points. However, to encourage attendance and to provide opportunity for extra credit, more than 10 quizzes will be given. If you attend class regularly and review the previously covered material in preparation for each class, you will be rewarded with more than 20 quiz points and ultimately a higher letter grade. There are no other opportunities for extra credit. Attendance is strongly encouraged but not required, except on test dates.
Course Calendar

1. T 1/13 – Introduction and orientation. Brief history. [Chapter 1]
2. R 1/15 – The “cognitive revolution”. Cognitive science. [Chapter 1]
3. T 1/20 – Memory systems. Atkinson & Shiffrin’s multi-store model. [Chapter 2]
4. R 1/22 – Baddeley’s working memory model. The central executive. [Chapter 2 + additional reading: Gluck, Mercado, Myers, 2011]
5. T 1/27 – Brain substrate of working memory. Maintained activation in the prefrontal cortex. [Chapter 2 + additional reading: Gluck, Mercado, Myers, 2011]
7. T 2/03 – Episodic memory: bottom-up and top-down processing. [Chapter 3]
8. R 2/05 – Levels of processing. Retrieval factors. Context dependence. [Chapter 3]
9. T 2/10 – Autobiographical memory. Permastore. Mnemonics. Education. [Ch. 4]
   (The first in-class exam covers the above material, lectures 1 through 9.)
10. R 2/12 – Forgetting. Retroactive and proactive interference. [Chapter 4]
11. T 2/17 – In-class exam #1. Bring photo ID. Covers lectures 1–9, but not 10.
   Self deception. Cognitive triad of depression. [Chapter 3 + additional reading:
   McLeod et al., 1998, pp. 72-73; Baumeister & Bushman, 2008; Nevid et al, 2014]
15. T 3/03 – Memory distortions. Eyewitness testimony. [Chapter 4 + three YouTube videos (listed in the lecture slides) + additional reading: Loftus, 2003]
17. T 3/10 – Exemplar-based categorization. Semantic networks. Basic level. [Ch. 8]
   Ad-hoc concepts. Brain localization. [Chapter 8]
3/16, 3/18 – Spring break. No classes
23. T 4/07 – Probabilistic reasoning. Probability as relative frequency. [Chapter 11]
25. T 4/14 – Analogy. Insight: special processing or business as usual? [Chapter 12]
26. R 4/16 – Creativity: definitions, case studies, theories, and models. [Chapter 13]
29. R 4/30 – Final Exam: AFTERNOON SECTION (23508), 2:00–3:45 pm
   (Note unusual hour!), same room (PS002). Bring a photo ID.
   M 5/04 – Final Exam: MORNING SECTION (23507), 8:00–9:45 am
   (Note unusual day and hour!), same room (H1031). Bring a photo ID.

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The course calendar is subject to change at the discretion of the instructor, depending on the rate of progress through the material, student interest in alternative topics, and/or scheduling constraints. The dates for the in-class and final exams are fixed.

**Official Announcements**

The syllabus is subject to minor revisions. If you are not in attendance when revision announcements are made, it is your responsibility to find out about them by checking the Carmen site or asking classmates. Occasionally, email announcements are sent to the class list or to individual students. All of these messages are addressed to your official OSU account (with the “dot number”). This is the only account known to Carmen. Therefore, **please make sure to check your official OSU account regularly.** Failure to check the official email account is not a valid excuse for missing a requirement.

**Additional Readings (Required)**

In addition to the main textbook (Weisberg & Reeves, 2013), the following additional readings supplement and amplify some topics of particular importance. All additional readings are available on Carmen in PDF format (in the Resources section of the Content area). The list of readings is subject to change at the discretion of the instructor, depending on the rate of progress through the material, student interest in alternative topics, and/or scheduling constraints.


Optional Readings (Not Required)

The readings below are not required and will not be used as sources for exam questions. For those of you who have a special interest in cognitive psychology, PDFs are available on Carmen in PDF format (in the Resources section of the Content area).


Accommodations for Students with Special Needs

The policy of The Ohio State University is to provide every reasonable, appropriate, and necessary accommodation to qualified disabled students. The University's colleges and academic centers evaluate and judge applications on an individual basis and no categories of disabled individuals are automatically barred from admission. The privacy rights of each disabled person are honored to the fullest extent possible. The University's interest in a students disabilities are only for the purpose of accommodating his/her specific
disability, thereby providing an academically qualified disabled student access to programs and activities accorded all other qualified students. Whenever generally accessible facilities do not adequately accommodate a specific disability, the University makes every reasonable accommodation and program or facility adjustment to assure individual access. These policies are fully supported and practiced in this class.

Students with disabilities that have been certified by the Office of Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; http://www.ods.ohio-state.edu/. Contact Dr. Petrov privately: email petrov.11@osu.edu, telephone 614-247-2734; office in 200B Lazenby Hall.

Academic Ethics

All students enrolled in OSU courses are bound by the Code of Student Conduct (http://studentaffairs.osu.edu/resource_csc.asp). The instructor and course assistants are committed to maintaining a fair assessment of student performance in this course. Suspected violations of the Code will be dealt with according to the procedures detailed in the Code. Specifically, any alleged cases of misconduct will be referred to the Committee on Academic Misconduct. It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code.

All exams are closed book. No notes may be used during the examinations and you may not confer with your fellow students or look at other examinations for answers during the exam period. Prior to the examinations, you are encouraged to study in small groups. However, once you enter the examination room, you are expected to work alone.

Please silence your cell phones during the lectures. Random ringing distracts everybody in the room and shows lack of respect to your colleagues and the instructor.

Finally, welcome to the course. I hope that you will enjoy the class and learn valuable information and skills. I look forward to seeing you on January 13.

Alexander Petrov