Course and Contact Information

Instructor: Evan McHughes Palmer, Ph.D.
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Email: evan.palmer@sjsu.edu [Best way to reach me!]
Office Hours: Tues/Thurs 11:00 AM – 12:00 PM, or by appointment
Class Days/Time: Tues/Thurs, 12:00 – 1:15 PM
Classroom: Online Hybrid Class

Course Description

Focuses on the study of the mind and the nature of intelligence from interdisciplinary perspectives including psychology, computer science, philosophy, linguistics, mathematics, neuroscience, and other disciplines. Specific topical coverage will include history of computer-based approaches to artificial intelligence and expertise, human learning, neuroscience, language acquisition, and mathematical, logical, and computational approaches to modeling cognitive process.

Program Learning Outcomes (PLOs)

1. Knowledge Base of Psychology: Students will be able to demonstrate familiarity with the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.
2. Research Methods in Psychology: Students will be able to design, implement, and communicate basic research methods in psychology, including research design, data analysis, and interpretations.
3. Critical Thinking Skills: Students will be able to use critical and creative thinking, skeptical inquiry, and a scientific approach to address issues related to behavior and mental processes.
4. Applications of Psychology: Students will be able to apply psychological principles to individual, interpersonal, group, and societal issues.
5. Values in Psychology: Students will value empirical evidence, tolerate ambiguity, act ethically, and recognize their role and responsibility as a member of society.

Course Learning Outcomes (CLOs)

1. Develop and demonstrate a knowledge base in Cognitive Science.
2. Demonstrate knowledge of how the discipline of Cognitive Science approaches understanding.
3. Demonstrate an understanding of the values and ethical concerns pertinent to the field of Cognitive Science.
Upon successful completion of this course, students will be able to:

1. Students will acquire basic knowledge of formal logic, experimental design, statistics, linguistic formalism, computing theory, and the brain.
2. Students will acquire familiarity with the divergent theoretical frameworks of philosophy of mind, cognitive neuroscience, cognitive psychology, theoretical linguistics, and artificial intelligence.
3. Define, using appropriate terminology, the major theories, concepts, principles, and perspectives of Cognitive Science.
4. Students will acquire familiarity with the vastly different methods of data collection and analysis used in philosophy of mind, cognitive neuroscience, cognitive psychology, theoretical linguistics, and artificial intelligence.
5. Demonstrate an understanding of common fallacies of reasoning and specific techniques to combat them.
6. Critically evaluate new ideas.
8. Appropriately describe how a particular level of implementation (modeling) is or is not appropriate to address any specific question or issue.
9. Understand Cognitive Science from within a framework of social and cultural values.

Required Texts/Readings

Textbook

ISBN 13: 9781412997164

Other Readings

TED Talk and YouTube videos on various topics in Cognitive Science. Links to videos and instructions for video reflection assignments will be posted on Canvas.

Library Liaison

The library liaison for Psychology is Christa Bailey (408) 808-2422 or christa.bailey@sjsu.edu (e-mail preferred). She is a valuable resource in helping you to access appropriate data-bases of knowledge content (e.g., PSYCINFO and MEDLINE) and with off campus access to library resources.

Course Requirements and Assignments

There will be 5 exams and 12 reflection essay assignments. Your lowest exam score and reflection essay scores will be dropped. Although each of the three Course Learning Outcomes will be addressed throughout the semester in the reflection essay assignments, the first half of the course will have a greater focus on developing a knowledge base in cognitive science (CLO1) and learning how the discipline of cognitive science approaches problems (CLO2), whereas the last half of the course will transition more towards a focus on ethics and values (CLO3).

Lectures in this course will be pre-recorded, and we will meet during the normal class times to have discussions and answer questions. Please watch the pre-recorded lectures before the class meetings so that we can have more productive discussions about the material.

The university definition of a credit hour suggests that “Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of
the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, labs, clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.”

**Grading Information**

Your grade in this course will be determined by two components: reflection essays and multiple choice exams (see grade breakdown below). The reflection essays will be graded according to rubrics published on Canvas and are designed to help you apply the knowledge gained from the course to real-world situations and topics. The exams are (mostly) non-cumulative but, to some extent, the course material builds naturally upon itself. I am available in office hours to meet with you in order to elaborate on the requirements of the assignments. If the office hour times don’t fit your schedule, other meeting times may be arranged through e-mail. Exams will be taken through Canvas before the due date. Exams will cover factual information (key terms, methods, research outcomes, etc.), theoretical / conceptual knowledge (understanding methods, theoretical interpretations, etc.), and application of the methods, concepts and principles to “real-world” situations.

Late assignments are penalized 10% for every day they are late, meaning that assignments are worth 0 points after 10 days. If you are facing any circumstances that will result in you being late turning in an assignment, please let me know before the deadline and I will waive the late penalty. If you do not notify me before the deadline, then the normal late penalty will apply.

**Determination of Grades**

**Grade Breakdown:**

- 20% Video Reflection Essays (6 reflection essays, lowest score dropped)
- 30% Research Paper
- 10% Research Paper Presentation
- 40% Exams (5 exams, lowest score dropped)

**Grading Scale:**

- 96.5 – 100% A plus
- 92.5 – 96.4% A
- 89.5 – 92.4% A minus
- 86.5 – 89.4% B plus
- 82.5 – 86.5% B
- 79.5 – 82.4% B minus
- 76.5 – 79.4% C plus
- 72.5 – 76.4% C
- 69.5 – 72.4% C minus
- 66.5 – 69.4% D plus
- 62.5 – 66.4% D
- 59.5 – 62.4% D minus
- ≤ 59.4% F
Video Reflection Essays

These assignments are designed to prompt you to think about the material we are covering in the course, integrate it with other information you know through school or your personal life, and write about it concisely and coherently. The reflection essays will center on an online video that you will react to and will be graded according to a rubric.

Exams

Exams will be multiple choice, focusing on the material presented in both the lecture slides and the textbook. The exams will mostly emphasize the material presented in the lectures, which is often above and beyond the material presented in the textbook.

Paper

You will write an 8-10 page paper (double-spaced) reviewing literature on a cognitive science topic from the perspective of at least two different disciplines. Your paper should review a minimum of 4 peer-reviewed journal articles, from at least two disciplines (e.g., two psychology articles and two computer science articles). Your topic will need to be approved by me by 10/15/20. All papers will be scanned by the TurnItIn plagiarism detection software and any instances of plagiarism will result in an automatic 0 for the assignment and be reported to SCED (see Academic Integrity Policy below).

Points to address in your paper:

1. What is the topic that the researchers are investigating?
   a. Cover background knowledge the reader would need to understand the topic.
   b. Give real-world examples of the topic.

2. What are the different theoretical approaches to understanding this topic?
   a. What are the major findings/theories about this topic in the literature?
   b. Compare and contrast how do the 2(+) disciplines approach the topic.
      i. Philosophical similarities and differences
      ii. Methodological similarities and differences
   c. What historical roots explain why the different disciplines approach the topic similarly or differently?

3. What do you see as the future directions for research in this area?
   a. Basic science perspective
   b. Applied science perspective

Presentation

You will give a 10 minute presentation on your research paper, covering the main points listed above. Treat this presentation as if you are an instructor teaching the class about your topic. Prepare a slide deck to show during your presentation. You will be graded on your clarity of thought, organization, and ability to communicate your ideas about the topic.

Classroom/Zoom Protocol

If possible, I would appreciate seeing some visual representation of you during the live Zoom meetings. This could be you having the camera on to show your face during class, or else having a picture or avatar of yourself in your Zoom profile.

All students are expected to exhibit professionalism and respect for each other and the instructor. Specifically, this means joining class meetings on time, participating in class, engaging in civil
discussion, and paying attention to in-class demonstrations and lectures. If you arrive late to class or
need to leave early from class, please do not disturb the rest of the class.

Academic Integrity

I do not tolerate any forms of academic dishonesty in my courses. I take issues of academic dishonesty
very seriously and pursue disciplinary action rigorously, so please take extra care to avoid this sort of
unpleasant situation. Any instances of cheating on exams results in an automatic 0 for the exam. All
writing assignments will be checked for plagiarism by TurnItIn on Canvas. Plagiarized assignments
automatically receive a score of 0. I reserve the right to fail a student in the course if the academic
dishonesty transgression is particularly severe. ALL instances of academic dishonesty are reported to the
Office of Student Conduct and Ethical Development (SCED). Students may appeal any accusations of
cheating or plagiarism through SCED.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as
academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate
Programs’ Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/"
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings (Sobel &amp; Li Textbook)</th>
<th>Homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thurs, 8/20</td>
<td>Introduction / Overview</td>
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<tr>
<td>Tues, 8/25</td>
<td>Early Approaches</td>
<td>Ch. 1</td>
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<td>Ch. 1</td>
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<td>Marr’s Levels of Analysis</td>
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<td>Tues, 9/8</td>
<td>The Cognitive Science Approach</td>
<td>Ch. 2</td>
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<td><strong>Exam 1</strong></td>
<td><strong>(Chs. 1-2)</strong></td>
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<td>Tues, 9/15</td>
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<td><strong>Exam 2</strong></td>
<td><strong>(Chs. 3-4)</strong></td>
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<td>Ch. 5</td>
<td>Video Reflection #4</td>
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<td>The Machine Performs</td>
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<td><strong>(Chs. 5-6)</strong></td>
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<td>Introduction to Linguistics</td>
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<td>Tues, 11/17</td>
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<td><strong>Exam 5</strong></td>
<td><strong>(Chs. 9-11)</strong></td>
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<td>Paper Presentations</td>
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<td>(Chs. 9-11)</td>
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