

COGSCI 88: Data Science and The Mind (Fall 2016)

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Assistants:

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Description: How does the human mind work? We explore this question by analyzing a range of data concerning such topics as human rationality and irrationality, human memory, how objects and events are represented in the mind, and the relation of language and cognition. This class provides young scientists with critical thinking and computing skills that will allow them to work with data in cognitive science and related disciplines.

Prerequisite: Concurrent or previous enrollment in the course *Foundations of Data Science*.

Units: 2.

Readings: Reading materials on published work in cognitive science and related disciplines will be posted on bcourses syllabus as the course progresses.

Grade distribution:

| | |
|--------------------|-----|
| In-class exercises | 30% |
| Homework | 20% |
| Project | 20% |
| Quizzes | 10% |
| Final Exam | 20% |

Letter grade distribution:

| | | | |
|---------------|----|---------------|----|
| >96.90 | A+ | 77.00 - 79.90 | C+ |
| 93.00 - 96.90 | A | 73.00 - 76.90 | C |
| 90.00 - 92.90 | A- | 70.00 - 72.90 | C- |
| 87.00 - 89.90 | B+ | 67.00 - 69.90 | D+ |
| 83.00 - 86.90 | B | 63.00 - 66.90 | D |
| 80.00 - 82.90 | B- | 60.00 - 62.90 | D- |
| | | <60.00 | F |

Policies:

• Homework

- Collaborations should be explicitly acknowledged.
- Exploitation in any collaborative work is prohibited.
- Plagiarism in any form is prohibited.
- Assignment beyond due hour will receive a deduction of *1 point per delayed hour*.

• Exercises

- Students are expected to work in pairs or independently as instructed for each exercise.
- Students are responsible for all missed assignments or other forms of work.
- Exercises are always due at the end of sessions (unless otherwise stated).
- Exercises beyond due hour will receive a deduction of *1 point per delayed hour*.
- No makeup of exercises is allowed without the instructor's consent *a priori*.

• Project

- Students may choose to work in pairs or independently in a project.
- Each student is expected to write code and analyze data.
- External sources of code or data should be referenced in full in the project report.
- Project reports beyond due hour will receive a deduction of *1 point per delayed hour*.
- Each student is expected to present in the data blitz session.

• Exam

- Exams are closed book and closed notes.

• Attendance

- Attendance to each session is expected.
- Temporary absence with the instructor's consent will not incur deduction of credits.

Schedule:

The weekly schedule might be subject to minor adjustments as the course progresses. Assessed items are marked in *italics*.

| Session | Description |
|----------------|---|
| 1 | <ul style="list-style-type: none">• Course overview• Python; warm-up lab |
| 2 | <ul style="list-style-type: none">• Information processing• <i>Lab 1</i> |
| 3 | <ul style="list-style-type: none">• Visual recognition• <i>Lab 2 (Lab 1 due)</i> |
| 4 | <ul style="list-style-type: none">• Object representation• <i>Homework 1 (Lab 2 due)</i> |
| 5 | <ul style="list-style-type: none">• Event representation• <i>Lab 3</i> |
| 6 | <ul style="list-style-type: none">• Judgment & decision making• <i>Lab 4 (Lab 3 due; Homework 1 due)</i> |
| 7 | <ul style="list-style-type: none">• Words• <i>Quiz 1; Homework 2 (Lab 4 due)</i> |
| 8 | <ul style="list-style-type: none">• Language and color• Project announcement |
| 9 | <ul style="list-style-type: none">• Language and number• <i>Homework 3 (Homework 2 due)</i> |
| 10 | <ul style="list-style-type: none">• Language and space• Project clinic 1 |
| 11 | <ul style="list-style-type: none">• Language and time• <i>Quiz 2 (Homework 3 due)</i> |
| 12 | <ul style="list-style-type: none">• Human lexicon• Project clinic 2 |
| 13 | <ul style="list-style-type: none">• <i>Data blitz</i> |
| 14 | <ul style="list-style-type: none">• Review and conclusion |