Welcome
Informatics 1 Cognitive Science: Lecture 1

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University of Edinburgh

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Now would be a great time to make sure TopHat is working for you: https://app-ca.tophat.com/login
Detailed instructions:
https://blogs.ed.ac.uk/ilts/2019/09/16/using-top-hat-as-a-student/
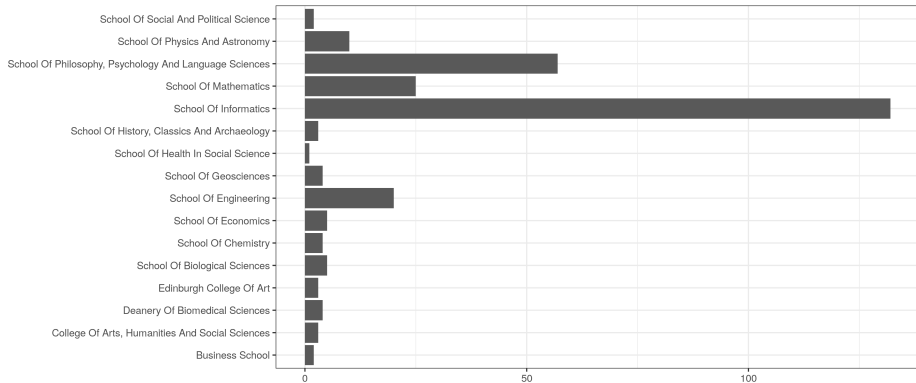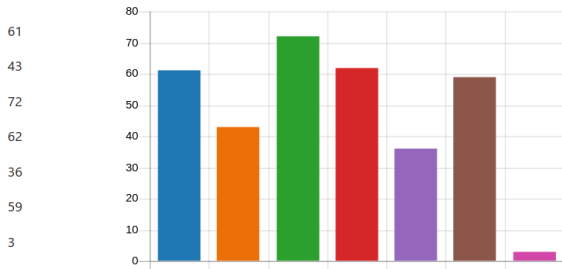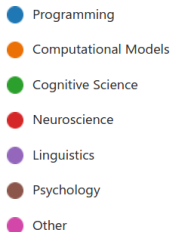
Your Course Lecturers

Chris Lucas

Frank Mollica

Matthias Hennig

You (out of 87 responses so far)

Where y'all from?

Your excitement! (out of 87 responses so far)

- Programming — 61
- Computational Models — 43
- Cognitive Science — 72
- Neuroscience — 62
- Linguistics — 36
- Psychology — 59
- Other — 3

Other: Philosophy

What is cognitive science?
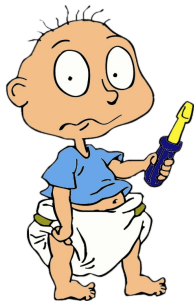
The study of mental representations and processes.

- A mental representation is a description of information in the mind.

What is cognitive science?

The study of mental representations and processes.

- A mental representation is a description of information in the mind.
- A mental process is a procedure for translating:
    - sensory information into representations;
    - representations into other representations; and
    - representations into actions/behavior.
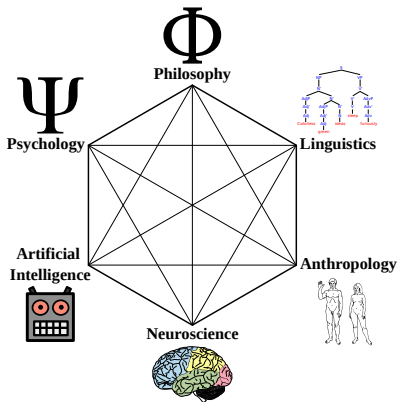
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A short breakout session

- You will be randomly assigned to small breakout groups.
- Introduce yourself to the others in your group: where you are from, your degree.
- Discuss what you expect from this course.
- What mental representations and processes are in the story?
- How do they map to the different subfields of cognitive science?
- Make a note of your names if you want to meet again later.
- After 8 minutes you will be called back into the main room.

What is Cognitive Science?

We will look at the overall landscape of cognitive science:

- what kind of questions cognitive scientists ask;
- what type of data they collect to answer these questions;
- what theories they build based on these data;
- what computational models they use to implement these theories.

What is Cognitive Science?

We will look at the overall landscape of cognitive science:

- what kind of questions cognitive scientists ask;
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- what computational models they use to implement these theories.

Idea: Computational modeling can be used to evaluate theories, generate new hypotheses, guide the collection of new data.

Course Overview

This course provides an introduction to cognitive science from a computational perspective. There are three main parts:

- language
- concepts;
- neural computations.

We will introduce important problems, data, theories in the field (some of this may be familiar from Introduction to Cognitive Science or from Psychology 1A).

Here the focus will be on the computational modeling of these problems, data, theories. You will learn to design, implement, and test cognitive models.

Required Background

This course is suitable of outside students. But bear in mind:

- the assignments require programming in Python;
- Introduction to Cognitive Science provides relevant background; Informatics 1A is also useful;
- there will be some maths (probabilities, linear algebra).

The labs are designed to provide help with programming. Other sources of support:

- InfBase: dedicated drop-in sessions for this course; timetable will be published shortly;
- CogPALS: peer-assisted learning scheme focusing on cognitive science courses.

Your programming background (87/280 responses so far)

1. Have you ever used Python before?
2. Do you have experience with another programming language?
3. How comfortable are you with math?

Nope
A little bit (e.g., short course, s...
A lot (e.g., multiple projects)

Yes
No

Very little background
I know the basics
I have a good understanding

Lectures

We will teach online with a mix of pre-recorded and live and recorded lectures.

Live lectures will take place during the scheduled slots. Check the course website.

Reserve the time for live lectures and to view the pre-recorded content.

The course has three parts:

- Frank Mollica: Language
- Chris Lucas: Concepts
- Matthias Hennig: Neural Computations

Tutorials

Tutorials are one-hour small-group sessions led by a tutor:

- they cover the material from the lectures;
- they help you practice and apply this material, allow you to discuss and ask questions;
- a question sheet is issued for each week; prepare for the tutorial by working through this sheet;
- tutorials start in week 2;
- you will be automatically enrolled for a tutorial group; change your group on MyEd if the day/time is not suitable.

Labs

The labs are two-hour practical sessions:

- they are designed to help with programming and prepare you for the assignments;
- for the labs, you will be given a question sheet;
- you work through the questions independently during the lab, but a demonstrator is on hand to help;
- in later labs, you can work on the assignments and ask the demonstrator questions;
- labs start in week 3;
- you will be automatically enrolled for lab group; change your group on MyEd if the day/time is not suitable.

Assessment

The assessment for this course consists of two assessed assignments, each worth 40% of the overall mark, and five assessed quizzes, each worth 4% of the overall mark.
All assignments are practical and require programming in Python. The labs are there to support the assignments.

There is also an unassessed assignment (assignment 0). It will be issued immediately, deadline in week 3. You will receive feedback on your submission, and the assignment is discussed in the labs.

There will be five, short quizzes. They are untimed, online for 24 hours and should take less than 30 minutes to complete.

Issue dates, hand-in deadlines, and marking deadlines for assignments and quizzes are on the course website.

How we communicate

When you sign up for the course, you will have access to:

- the Course Website: contains all course materials.
- the course mailing list: used for all essential communication;
- the Learn page of the course: contains links the Noteable environment for labs and assignments.

We will use a Piazza forum for the course:

- you can use it to post questions about the course content, including tutorials, labs, and assignment;
- the main purpose is peer support: students discuss course material and help each other;
- lecturer and TA moderate the discussion and contribute;
- link is on Learn, all currently enrolled students should be signed up.

Learning online

Lectures: Have your microphone muted by default. Use the "raise your hand" feature or type in the chat for questions and comments.

Let's try Tophat

Go to:
https://app-ca.tophat.com/login

Detailed instructions:
https://blogs.ed.ac.uk/ilts/2019/09/16/
using-top-hat-as-a-student/

Pizza Problems

What are you anxious about w.r.t. this course?

22 respondents (**40**%) answered **programming** for this question.

experience in Python   programming part of the course   strong at programming
programming knowledge   science course   math courses
background in programming   **programming** able   course at university
Programming and maths   bit anxious informatics course

aspects of the course worried   python   course   reading for this course
anxious about programming   course being too programming

Some of your comments

- How will the course work for Class Only students?
- Love the website and LOVE the passage on diversity and inclusion. Thank you for your commitment to an education that caters to everyone's needs.
- very excited for this course :)
- I'm pretty nervous for this module
- I have zero prior background with cognitive science and/or psychology in previous academic environments, so please be gentle.