



# PPLS08002

## Introduction to Cognitive Science

### Course Guide

**2021-2022**

**Course Organiser:**

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**Contents**

1. [Course Aims and Objectives](#)
2. [Lecture and Lab Times and Locations](#)
3. [Lecture Content](#)
4. [Timetable of Lectures and Labs](#)
5. [PPLS Undergraduate Student Handbook](#)
6. [Labs](#)
7. [Assessment Information](#)
8. [Learn & MS Teams](#)
9. [Contact Details for Staff on the Course](#)
10. [Common Marking Scheme](#)
11. [Tier 4 students](#)

## 1. Course Aims and Objectives

*Introduction to Cognitive Science* (Intro Cog Sci, PPLS08002) is available as a self-contained, one semester, 20-credit course.

Intro Cog Sci introduces students to Cognitive Science, a field at the intersection of several disciplines including philosophy, psychology, linguistics, computer science, human-computer interaction, and neuroscience. The course has **two broad aims**:

1. To provide a high-level perspective on a set of key questions that the field of Cognitive Science aims to address.
2. To provide hands-on training in computational skills that will serve as a necessary foundation for future related courses in PPLS and Informatics.

In relation to these general aims, the course embodies in its content and components certain specific **objectives**; students who have participated fully in Intro Cog Sci will:

1. Demonstrate an understanding of the themes and questions encompassed by Cognitive Science across a variety of disciplines
2. Evaluate recent findings in Cognitive Science to identify how they inform long-standing debates in the field
3. Be able to discuss and appreciate the interdisciplinary nature of Cognitive Science
4. Implement concrete tasks in a computer programming language to acquire the transferable skill of writing, testing, and amending computer code

## 2. Lecture, Lab, and Tutorial Times and Locations

**There are three types of mandatory event for this course: Lectures, programming labs, and tutorials.**

**Lectures and programming labs will take place online.**

**Required lectures** take place twice a week throughout semester 1. These lectures are pre-recorded and offered asynchronously online. Although asynchronous, these lectures have been assigned a formal timetable slot. Students may choose to watch the lecture during its timetabled hour, or at their convenience on the day of release.

<b>Tuesday</b>	<b>Released 8:00am</b>	<b>Timetabled 12:10pm</b>
<b>Thursday</b>	<b>Released 8:00am</b>	<b>Timetabled 2:10pm</b>

**Required programming labs** take place twice a week throughout semester 1. Each student is assigned one lab session on Wednesdays and one lab session on Thursdays. Labs will occur in the “Pub” room of the PPLS Gathertown space. **The first lab meets on Thursday of week 1.**

<b>Wednesday</b>	<b>9:00 – 9:50</b>	<b>PPLS Gathertown “Pub”</b>
	<b>10:00 – 10:50</b>	
	<b>15:10 – 16:00</b>	
<b>Thursday</b>	<b>13:10 – 14:00</b>	<b>PPLS Gathertown “Pub”</b>
	<b>15:10 – 16:00</b>	
	<b>16:10 – 17:00</b>	

**Tutorials will take place on campus, in person.**

**Required tutorials** take place once a week throughout semester 1. Each student is assigned one tutorial session on Fridays. The first tutorial meets on Friday of week 2, with further tutorials every week.

<b>Friday</b>	<b>10:00 – 10:50</b>	<b>7 George Square S37</b>
	<b>10:00 – 10:50</b>	<b>Lister Learning &amp; Teaching Centre 3.2</b>
	<b>11:10 – 12:00</b>	<b>Dugald Stewart Building 1.17</b>
	<b>11:10 – 12:00</b>	<b>7 George Square S37</b>
	<b>12:10 – 13:00</b>	<b>Dugald Stewart Building 3.10/3.11</b>
	<b>14:10 – 15:00</b>	<b>Dugald Stewart Building 1.17</b>
	<b>15:10 – 16:00</b>	<b>7 George Square S37</b>
	<b>16:10 – 17:00</b>	<b>Dugald Stewart Building 1.20</b>

### 3. Lecture Content

*Introduction to Cognitive Science* is divided into three themed blocks of teaching. Each theme will be addressed from three perspectives: that of a Philosopher, a Psychologist, and a Linguist. Additional lectures will introduce concepts in computer programming.

- **Nativism & Empiricism:** Basic questions about the degree to which certain cognitive capacities are “native”, or hard-wired, in the human brain from birth or can be learned via empirical evidence during development.
- **Representation:** Principles regarding the types of hypothesized structures and symbols that could be used to represent external reality in the human brain or in a computational model.
- **Situated Cognition:** Fundamental approaches to cognition that incorporate the physical constraints and affordances of the body.

The lectures are the core material for this course. You must watch all the lectures. You will be listening face-to-face to world experts in the various areas of Cognitive Science. The lecturers will provide you with the latest view of research in their field and give you the means to interpret the three targeted themes. They will also provide you with the specific flavour of Cognitive Science at the University of Edinburgh – Edinburgh’s particular research strengths and the theoretical positions adopted here.

Once released, lecture videos will remain online for the duration of the semester. Nevertheless, students are strongly advised to take notes during the lecture — transcribing and condensing lecture material in your own words is a critical skill that will

allow you to better understand and retain key ideas. Often it is only when you attempt to rewrite lecture material and fail that you discover areas where you do not understand. This process is important for finding gaps in your understanding, and thus questions you can ask in office hours or on our online discussion forum.

## 4. Timetable of Lectures

### INTRODUCTION TO COURSE

<i>Week</i>	<i>Tuesday Lecture</i>	<i>Wednesday Lab</i>	<i>Thursday Lecture</i>	<i>Thursday Lab</i>	<i>Friday Tutorial</i>
1	INTRODUCTION <i>Alex Dumas</i>	NO LAB	COMPUTATION <i>Jia Loy</i>	1 <sup>ST</sup> LAB	NO TUTORIAL

### THEME 1 – Nativism & Empiricism

<i>Week</i>	<i>Tuesday Lecture</i>	<i>Wednesday Lab</i>	<i>Thursday Lecture</i>	<i>Thursday Lab</i>	<i>Friday Tutorial</i>
2	FRAMING, THEME 1 <i>Mark Sprevak</i>	TEXTBOOK EXERCISES	COMPUTATION <i>Jia Loy</i>	TAUGHT LAB	1 <sup>ST</sup> TUTORIAL

**LABS CONTINUE EVERY WEDNESDAY and THURSDAY THROUGH WEEK 11**

**TUTORIALS CONTINUE EVERY FRIDAY THROUGH WEEK 11**

<i>Week</i>	<i>Tuesday Lecture</i>	<i>Thursday Lecture</i>
3	PHILOSOPHY <i>Mark Miller</i>	PHILOSOPHY <i>Mark Miller</i>
4	LINGUISTICS <i>Simon Kirby</i>	LINGUISTICS <i>Simon Kirby</i>

### THEME 2 – Representation

<i>Week</i>	<i>Tuesday Lecture</i>	<i>Thursday Lecture</i>
5	FRAMING, THEME 2 <i>Mark Sprevak</i>	PHILOSOPHY <i>Dave Ward</i>
6	PSYCHOLOGY <i>Alex Dumas</i>	PSYCHOLOGY <i>Alex Dumas</i>
7	LINGUISTICS <i>Matthew Spike</i>	LINGUISTICS <i>Matthew Spike</i>
8	COMPUTATIONAL INTERLUDE <i>Jia Loy</i>	FRAMING, THEME 3 <i>Mark Sprevak</i>

### THEME 3 – Situated Cognition

Week	Tuesday Lecture	Thursday Lecture
9	PHILOSOPHY <i>Mark Miller</i>	PHILOSOPHY <i>Mark Miller</i>
10	PSYCHOLOGY <i>Martin Pickering</i>	PSYCHOLOGY <i>Martin Pickering</i>
11	LINGUISTICS <i>Matthew Spike</i>	WRAP UP + REVIEW <i>Alistair Isaac</i>

## 5. PPLS Undergraduate Student Handbook

The PPLS Undergraduate Student Handbook has more information on Student Support and academic guidance; late coursework and plagiarism; illness and disability adjustments, and useful sources of advice.

The Handbook can be found <http://students.ppls.ed.ac.uk/handbooks/>

## 6. Labs and Tutorials

**Labs:** Two one-hour labs will be held each week on Wednesdays and Thursdays. Tutors will be present in the lab to help guide students through exercises in computer programming. **The first lab is Thursday of week 1.**

**Tutorials:** Tutorials are held on Fridays starting in week 2. Tutors will guide a discussion on topics related to lecture content.

You are expected to watch all lectures, and **attendance at labs and tutorials is compulsory**. You must notify your tutor if you are unable to attend your lab or tutorial. In addition, you should inform your Personal Tutor as soon as you possibly can of any illness or problem that prevents you from attending classes for more than three days. (Alternatively, if you are a student within PPLS, you may contact one of the School's Student Support Officers instead of your Personal Tutor if you prefer: [ppls.sso@ed.ac.uk](mailto:ppls.sso@ed.ac.uk), Dugald Stewart Building room G.03.)

If illness has seriously affected your written work or class attendance, or made you unable to complete any aspect of the assessment, then you should notify your Personal Tutor or a Student Support Officer and discuss with them about submitting a Special Circumstances Form. You can find the link to this form via the LEARN page. It can be found in the Assessment folder – General Assessment Information.

## 7. Assessment Information

There are six items of assessment for *Introduction to Cognitive Science*: two essay assignments, two programming assignments, participation in research, and a final assignment.

- *Essays* will address material covered in the three themes in lectures and in readings.

- *Programming assignments* will be practical coding tasks to help you become familiar with the syntax of the programming language and the process of writing code, testing, and debugging.
- *Research participation* may be fulfilled either by (a) signing up to participate in a study through SONA, or some other platform, and submitting a very short (100-300 words) summary of the experience, or (b) by reading one paper in cognitive science (typically, any paper recommended as further reading), and submitting a brief critical note on it (~350 words).
- The *final assignment* is a piece of coursework that is a mixture of programming and essay-type questions.

The details for coursework and research participation are as follows (type of assignment, percentage of overall course mark, and deadline). Note that the first two pieces of coursework are practice assignments for which you will only receive feedback and a hypothetical mark.

- Noon on week 05 Thu 21 Oct formative Python assignment due
- Noon on week 06 Thu 28 Oct formative essay assignment due
- Noon on week 10 Thu 25 Nov Python assignment (**28%**) due
- Noon on week 11 Thu 02 Dec essay assignment (**30%**) due
- Noon on week 12 Thu 9 Dec 2 write-ups of research participation due (**2%**)
- Noon on week 13 Thu 16 Dec final assignment (**40%**) due

The Final Mark for Intro Cog Sci is calculated on the basis of the four marked items of assessment. To pass the course, a Final Mark of 40% (Grade D) or above is needed. Should you fail an item of assessment, it is possible to compensate for this by doing well enough in the other items of assessment for the course; if the average of your marks for across items of assessment is at least 40%, you will still pass the course. You will be notified of your Final Mark for the course by University Registry.

If your Final Mark for the course is below 40%, you will be required to take the resit in August, covering the material from the entire course (see below).

### **7.1 Coursework Requirements**

During the semester you will be asked to submit four pieces of coursework.

An electronic copy must be submitted through Learn by the deadline, along with an own work declaration confirmation form. Essays are to be submitted via TurnItIn. Programming assignments will use an alternative submission via Learn. The electronic submission allows us to check for plagiarism and word count. Late submissions should be handed into the Teaching Office on the ground floor of the Dugald Stewart Building along with a Late Submission form.

### **Penalties for late submission**

The submission deadline must be observed. Failure to comply with the deadline without good reason will incur mark penalties as follows:

- Up to 7 working days, 5 marks per working day will be deducted
- More than 7 working days late a mark of zero will be given

## **Coursework return**

Marks and feedback will be returned within 3 weeks. The Course Secretary will email if the date changes.

## **IMPORTANT**

1. **Plagiarism**, the unacknowledged use of others' work, is a serious offence, and may be a disciplinary matter. It is essential that you read the section on plagiarism in the PPLS Undergraduate Student Handbook to avoid this.

2. You are expected to submit work on time. This is not only considerate to staff and fellow students but also an ability valued by employers, who typically ask about this when requesting a reference for a graduate.

To avoid late submission:

- start working on assignments as early as possible. All deadlines are given above so you can plan ahead. Bear in mind you may have more than one deadline around the same time.
- complete the assignment at least 48 hours before the deadline to allow time for proof-reading, possible problems in printing and electronic submission. Bear in mind that demand on computers and printers is often high around the time of a deadline.
- save your work frequently and back it up.

Your teachers and tutors will be happy to advise on all matters relating to your written work. You are strongly urged to take every opportunity to ensure that your work is of appropriate content and quality.

## **7.2 Research participation requirements**

Learning more about the current state of practice in contemporary cognitive science is one of the goals of the course. One way to make progress on this goal is to participate as a subject in an experiment. If you take this option, you should participate in 2 hours of experiment, and submit a brief write-up of the experience (100–300 words.).

If you are unable or unwilling to participate as subject in an experiment, you may pick one paper in cognitive science, preferably from the "further reading" list for any week, and submit a brief critical summary of it (approx. 350 words.).

Research participation write-up is worth 2% of overall mark.

## **7.4 Resit exams**

For those who have failed the course (i.e. have achieved an average mark of less than 40% over the whole relevant assessment), a resit examination is held in August. The resit exam is three hours long and will cover the content of the whole course; details of the structure of the resit exam will be made available in due course. It is the student's responsibility to check the resit timetable on the Registry's website <http://www.ed.ac.uk/schools-departments/student-administration/exams/exam-diets>, find the time and location of the resit exam and ensure they are present for that resit. No formal registration is necessary and students will not be individually notified of the resit date and location of resit exams. If you take the resit exam, your final mark will be calculated using the mark from the resit exam only.

## **7.5 Visiting Undergraduates**

The assessment arrangements for visiting undergraduates are the same as for all other students.

## 8. Learn & MS Teams

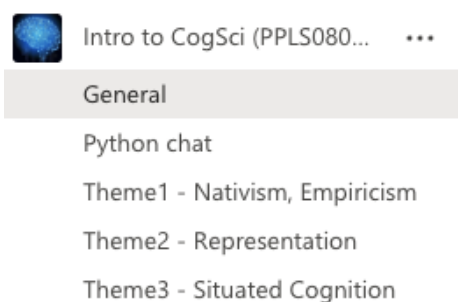
You should regularly check your university email and check for announcements on the course Learn page, which can be accessed from your MyEd page via <http://www.myed.ed.ac.uk/>

The course Learn page will provide information concerning:

- General information and announcement about the course
- Lectures, quizzes, and PowerPoint slides
- Tutorial arrangements
- Information about assessment arrangements

You should also log into Microsoft Teams using your University of Edinburgh account: <https://teams.microsoft.com/start/>

There is a special Team for all students on this course. You will automatically be a member of this Team. This Team contains various chat channels in which you will be able to ask lecturers and tutors questions:



You may discuss and ask general questions about the course/assessment/practical issues in 'General', and matters related to programming, theme 1, theme 2, and theme 3 in the other chat channels. It is a good idea to say logged into MS Teams for the whole time you are taking the course, so you can see new messages as they appear. The questions and comments raised by other students may address issues that you have been wondering about too.

## 9. Staff Contact Details

If you have a query regarding lecture content, you can post questions on the relevant threads on the course Teams page. We encourage students to use this means of communication rather than email whenever the answer to your question may be of interest to other students on the course. For anything else, you're of course welcome to contact the Course Organizer or lecturers by e-mail. Most lecturers also have an office hour when you can drop by with questions, or else you can make an appointment with them. Note that some lectures on this course are delivered by faculty who are unable to answer questions or hold office hours. If you have questions on this content, please contact the course organizer directly, or post your question on Teams.

Course Organiser:

Dr Alistair Isaac



[a.m.c.isaac@ed.ac.uk](mailto:a.m.c.isaac@ed.ac.uk)

Office Hours: TBD

If you have questions not specifically about lecture content, you should speak to the Course Secretary, Susan Hermiston, whose office-hours and other contact details are as below:

Office: Room G.06, Dugald Stewart Building  
Telephone: (0131) 650 3440  
E-mail: [leinfo@ed.ac.uk](mailto:leinfo@ed.ac.uk)  
Office-hours: 9.30am to 4.30pm, Monday to Thursday. Office hours will vary throughout the semester.

**Contact details of tutors** will be made available on **Learn** (under 'General Course Information'). **Learn** will also be used to make course-related information and resources to you. You can access **Learn** through **MyED** (under the tab called 'Teaching').

#### Contact details of Lecturers:

<b>Dr Itamar Kastner</b>	<a href="mailto:itamar.kastner@ed.ac.uk">itamar.kastner@ed.ac.uk</a>
<b>Dr Alex Doumas</b>	<a href="mailto:Alex.Doumas@ed.ac.uk">Alex.Doumas@ed.ac.uk</a>
<b>Prof Simon Kirby</b>	<a href="mailto:simon.kirby@ed.ac.uk">simon.kirby@ed.ac.uk</a>
<b>Dr Mark Miller</b>	<a href="mailto:markmiller@chain.hokudai.ac.jp">markmiller@chain.hokudai.ac.jp</a>
<b>Dr Matthew Spike</b>	<a href="mailto:m_spike@ed.ac.uk">m_spike@ed.ac.uk</a>
<b>Dr Dave Ward</b>	<a href="mailto:dave.ward@ed.ac.uk">dave.ward@ed.ac.uk</a>

## 10. Common Marking Scheme

A1	90-100	Excellent <i>Outstanding in every respect, the work is well beyond the level expected of a competent student at their level of study.</i>
A2	80-89	Excellent <i>Outstanding in some respects, the work is often beyond what is expected of a competent student at their level of study.</i>
A3	70-79	Excellent <i>Very good or excellent in most respects, the work is what might be expected of a very competent student.</i>
B	60-69	Very Good <i>Good or very good in most respects, the work displays thorough mastery of the relevant learning outcomes.</i>
C	50-59	Good <i>The work clearly meets requirements for demonstrating the relevant learning outcomes.</i>
D	40-49	Pass <i>The work meets minimum requirements for demonstrating the relevant learning outcomes.</i>

E	30-39	Marginal fail <i>The work fails to meet minimum requirements for demonstrating the relevant learning outcomes.</i>
F	20-29	Clear fail <i>The work is very weak or shows a decided lack of effort.</i>
G	10-19	Bad fail <i>The work is extremely weak.</i>
H	0-9	Bad fail <i>The work is of very little consequence, if any, to the area in question.</i>

The marking scheme used for all course work and for degree and resit examinations is the [University Common Marking Scheme](#). The principal grades and descriptors, as approved by the School of PPLS, of the University's Extended Common Marking Scheme, are as follows:

### **A1 90-100 Excellent**

*Outstanding in every respect, the work is well beyond the level expected of a competent student at their level of study. It...*

- shows creative, subtle, and/or original independent thinking
- demonstrates breadth of knowledge and deep understanding of the subject matter
- draws on a wide, relevant literature base
- demonstrates an excellent standard of synthesis and evaluation and a critical and insightful analysis of the literature
- is well focused, with concentration on the main issues to be addressed
- presents a compelling case by means of clear logically structured argument or debate, well supported with evidence
- is written with flair
- has, where appropriate, complete and correct referencing
- Is flawless in grammar and spelling

### **A2 80-89 Excellent**

*Outstanding in some respects, the work is often beyond what is expected of a competent student at their level of study. It...*

- shows original, sophisticated independent thinking
- demonstrates a thorough understanding of the subject matter
- draws on a wide, relevant literature base
- demonstrates critical and insightful analysis of the literature
- is well focused, with concentration on the main issues to be addressed
- presents a strong case by means of clear, logically structured argument or debate, supported with evidence
- shows a good standard of academic writing
- has, where appropriate, complete and correct referencing
- shows a high standard of grammar and spelling

### **A3 70-79 Excellent**

*Very good or excellent in most respects, the work is what might be expected of a very competent student. It...*

- explores the topic under discussion fully
- shows some complex and/or sensitive independent thinking Complexity and or sensitivity is reflected in the argument
- demonstrates a sound understanding of the subject matter
- draws in a wide relevant literature base
- demonstrates critical analysis of the literature

- is well focused, with concentration on the main issues to be addressed
- presents a good case by means of clear logically structured argument or debate, supported by evidence
- shows a competent standard of fluent academic writing
- has, where appropriate, complete and correct referencing
- shows a good standard of grammar and spelling

### **B 60-69 Very Good**

*Good or very good in most respects, the work displays thorough mastery of the relevant learning outcomes. It...*

- demonstrates a good understanding of the area in question
- draws on adequate references
- demonstrates good synthesis, analysis, reflection and evaluation of the literature
- concentrates on the main issues to be addressed
- presents an adequate case by means of clear, well structured, logical argument supported with evidence.
- has, where appropriate, complete and correct referencing of sources
- shows a good standard of grammar and spelling

### **C 50-59 Good**

*The work clearly meets requirements for demonstrating the relevant learning outcomes. It...*

- shows evidence of sufficient knowledge and understanding of the material
- uses references appropriately to support the argument, though they may be limited in number or reflect restricted reading.
- demonstrates limited critical analysis and evaluation of sources of evidence.
- addresses the area in question clearly and coherently
- has satisfactory structure, presentation, and expression
- has, where appropriate, complete referencing of sources, though there may be minor flaws in referencing technique

### **D 40-49 Pass**

*The work meets minimum requirements for demonstrating the relevant learning outcomes. It...*

- demonstrates a sufficient level of knowledge and understanding but at a basic level, and there may be minor inaccuracies
- lacks detail, elaboration or explanation of concepts and ideas.
- displays limited synthesis and analysis of the literature
- presents a highly descriptive account of the topic with no real critical analysis
- presents a weak argument which is not logically structured or which lacks clarity or is based on unsubstantiated statements
- has, where appropriate, complete referencing of sources, though there may be flaws in referencing technique.
- has largely satisfactory expression, though there may be minor spelling or grammatical errors

### **E 30-39 Marginal fail**

*The work fails to meet minimum requirements for demonstrating the relevant learning outcomes. It...*

- does not demonstrate a sufficient level of knowledge and understanding
- utilises only limited reference sources and offers poor analysis of them

- may not adequately address the area in question, because its content is too limited or because there are some inaccuracies
- presents a poorly structured, poorly developed, or incoherent argument, or no argument at all
- has an awkward writing style or poor expression of concepts
- **has incomplete or inadequately presented references**
- shows a lack of attention to spelling and grammar

#### **F 20-29 Clear fail**

*The work is very weak or shows a decided lack of effort. It...*

- displays very poor or confused knowledge and understanding
- **does not address the area in question.**
- presents no argument or one based on irrelevant and erroneous content
- displays an unacceptable academic writing style and /or presentation
- has incomplete or inadequately presented references, if any

#### **G 10-19 Bad fail**

*The work is extremely weak. It...*

- displays no knowledge or understanding of the area in question
- presents incomplete, muddled, and/or irrelevant material
- provides no coherent discussion of the area in question
- has incomplete or inadequately presented references, if any

#### **H 0-9 Bad fail**

*The work is of very little consequence, if any, to the area in question. It...*

- is incomplete in every respect

## **11. Students on a Tier 4 Visa**

As a Tier 4 student, the University of Edinburgh is the sponsor of your UK visa. The University has a number of legal duties to manage our sponsorship of your visa. These include:

- monitoring your attendance on your programme and
- reporting to the Home Office where you suspend or withdraw from your studies, complete them early, fail to register or are repeatedly absent to the point of being excluded from studies.

As a student with a Tier 4 visa sponsored by the University of Edinburgh, the terms of your visa require you to, (amongst others):

- Ensure you have a correct and valid visa for studying at the University of Edinburgh, which, if a Tier 4 visa, requires that it is a visa sponsored by the University of Edinburgh;
- Attend all of your University classes, lectures, tutorials, etc where required. This includes participating in the requirements of your course including submitting assignments, attending meetings with tutors and attending examinations. If you cannot attend due to illness, for example, you must inform your School. This includes attending Tier 4 Census sessions when required throughout the academic session.

Please note that any email relating to your Tier 4 sponsorship, including census dates and times will be sent to your University email address - you should therefore check this regularly.

Further details on the terms and conditions of your Tier 4 visa can be found in the “Downloads” section at [www.ed.ac.uk/immigration](http://www.ed.ac.uk/immigration)

Information or advice about your Tier 4 immigration status can be obtained by contacting the International Student Advisory Service, located at the International Office, 33 Buccleuch Place, Edinburgh EH8 9JS

Email: [immigration@ed.ac.uk](mailto:immigration@ed.ac.uk)