

School of Informatics Course Proposal Form (version: May 2021)

Please see Page 2 for instructions on which parts of this form to complete, whom to consult with to avoid unnecessary effort, and where to send the completed form.

Proposer(s): Frank Mollica

Date: 1/12/21

Cover page: Basic permanent course information

Unless otherwise noted, items in this section are entered into EUCLID and **cannot** be changed without creating an entirely new course.

Course Name	Foundations of Cognitive Modelling
Is this an EPCC course?	<input checked="" type="checkbox"/> No (default) <i>(If you don't know what EPCC is, this is the right choice.)</i> <input type="checkbox"/> Yes <i>(If so, leave Course Acronym blank, to be filled in by ITO as EPCC/<number> for Theon and our Sortable List.)</i>
Course Acronym <i>(used only School-internally)</i>	FCM
SCQF Credit Level and Normal Year Taken	Standard options for Informatics courses: <input type="checkbox"/> Level 8/Year 1 <input type="checkbox"/> Level 8/Year 2 <input type="checkbox"/> Level 10/Year 3 (also available in Year 4). <i>[In practice, most level 10 courses have many students in both UG3 and UG4. MSc students may take up to 20 credits at Level 10.]</i> <input checked="" type="checkbox"/> Level 11/Year 4 (also available in Year 5 and MSc). <i>[These courses are listed as options in both UG and MSc DPTs.]</i> <input type="checkbox"/> Level 11/PG (also available in Year 5). <i>[These courses are normally for MSc and UG5 students. They are not explicitly listed in UG4 DPTs, but UG4 students can take limited credits of them.]</i> <input type="checkbox"/> Level 11/PG (only). <i>[These courses are not available to UG4 or UG5 students. Examples: CDT courses; CPD courses.]</i> Other options. Please provide justification if using: <input type="checkbox"/> Level 9/Year 3 <i>[Deprecated except for compulsory UG3 courses. The course will not be available to other years.]</i> <input type="checkbox"/> Level 10/Year 4 <input type="checkbox"/> Other:
SCQF Credit Points	<input type="checkbox"/> 10 <input checked="" type="checkbox"/> 20 <input type="checkbox"/> 40 <input type="checkbox"/> 60 <input type="checkbox"/> 80 <input type="checkbox"/> Other:
Delivery Location	<input checked="" type="checkbox"/> Campus <input type="checkbox"/> On-line Distance Learning
Course Type	<input checked="" type="checkbox"/> Standard (default) <input type="checkbox"/> Dissertation <input type="checkbox"/> Online Distance Learning <input type="checkbox"/> Placement <input type="checkbox"/> Student Led Individually Created Course <input type="checkbox"/> Year Abroad
Marking Scheme	<input checked="" type="checkbox"/> Standard (numerical) <input type="checkbox"/> Letter grade only <input type="checkbox"/> Pass/Fail <i>[Normally only for externally delivered courses]</i>

Guidance for remaining sections:

Before starting your proposal: please contact the DDoLT (Curriculum) informally before starting to complete this form, with at least the following information:

- Tentative course title, level, year, and number of credits
- Who the target audience is, and why the course is needed.

The DDoLT (Curriculum) or delegate will schedule a meeting with you to discuss your plans and whether a full course proposal makes sense. If so, you will be provided with further instructions.

Deadlines: New courses must be approved by the December BoS meeting to ensure allocation of teaching staff for the following academic year. Since it may require considerable discussion and iteration to prepare the proposal, you should **contact the DDoLT (Curriculum) as early as possible, ideally in spring or summer**, and you should **plan on submitting your full proposal by November**.

Submitting your proposal: When your proposal is complete, please submit to **iss-bos@inf.ed.ac.uk**.

Colour coding and item-by-item guidance:

Guidance is provided in italics for each item. Please also refer to the guidance for new course proposals at

<http://www.inf.ed.ac.uk/student-services/committees/board-of-studies/course-proposal-guidelines>. Examples of previous course proposal submissions are available on the past meetings page

<http://web.inf.ed.ac.uk/infweb/admin/committees/bos/meetings-directory> but note that the proposal form was updated in Apr 2021.

Sections in gold are for student view and are required before a course can be entered into DRPS.

Sections in orange are for School use but are still required for all courses (even those that have already been approved based on other documentation).

Section in gray are for consideration by the Board of Studies. They are normally required for all new course proposals but may be omitted in some cases, with permission (e.g., for invited proposals).

Glossary of terms:

(D)DoLT: (Deputy) Director of Learning and Teaching.

DRPS ([The Degree Regulations and Programmes of Study](#)): Provides the University's official listing and descriptions of courses, degree programmes, and the regulations that govern them; updated annually in April. Course information in DRPS is considered a contract with students.

DPT (Degree Programme Table): Lays out the course requirements for each year of a degree. All UoE degrees have a DPT in the DRPS.

Path: A system that students use to help choose courses and view options in their DPT. The information feeds through from DRPS but has a more student-friendly interface (e.g., by highlighting courses that are not running or where the student hasn't satisfied prerequisites).

SCQF ([The Scottish Credit Qualifications Framework](#)): Lays out the requirements for courses at different levels and with different numbers of credits.

1. **Course overview and case for support**

Except as noted, all fields are required and will go into the DRPS (course catalogue) entry for students.

Important: Text in DRPS is effectively a contract with students, so should not include details that are likely to change from year to year.

Summary Description (for DRPS)

Provide a brief official description of the course, around 100 words. This should be student-friendly, as it is the part of the descriptor a student is most likely to read. If this course replaces another course, please say so in this summary.

This course provides students an opportunity to explore a topic in cognitive science in depth while honing their science communication skills and broadly surveying the foundations of cognitive science. Building on Computational Cognitive Science, the course aims to expose students to a variety of cognitive models and to discuss and evaluate competing models for similar problems. Students will be expected to present and critique classic and recent research articles from the cognitive modelling literature, chosen from a list provided by the instructor.

Contribution to curriculum; target audience and expected demand; consultation (for BoS only)

Why is this course needed and how does it relate to existing courses and degree programmes (including any prerequisite courses)?

This course is intended to replace IRR and merge with TCM, which has not been delivered since 2015/16. While IRR teaches valuable skills, this course would leverage the time spent in IRR to learn those skills on content specialized for Cognitive Science, ensuring that our graduates leave with cursory understanding of several subfields of cognitive science in addition to the skills in IRR and the advanced depth of knowledge they receive in the rest of the specialized courses on the DPT. In addition, they would receive more instruction and practice reading current articles, critically assessing the theoretical adequacy of a given model, comparing strengths and weaknesses of different modelling approaches and doing science communication, which are core graduate attributes of the programs (or should be in the case of the MSc).

This course is being proposed as a part of the revision of Cognitive Science programs to pre-empt the university-wide curriculum review. As a mandatory course, it will contribute to our MSc students having a unique core set of specialized skills. It will also help with cohort building.

What is the target audience,

Proposed as a new compulsory course for

<p>in terms of background and interests, and what is the expected demand (class size) for the course?</p> <p><i>State what your estimate is based on: e.g. by referring to projects in an area, sizes of similar courses, employer demand, etc. A survey of students may be requested once the main descriptor information is ready.</i></p>	<p>students on the MSc Cognitive Science but not to other Informatics MSc students (who do IRR). It will also be available to PPLS MSc students on the following degrees: Psychology of Language, Developmental Linguistics, Evolution of Language & Cognition, Mind, Language & Embodied Cognition; and to UG4/5 students who have passed CCS.</p> <p>TCM was high demand but stopped because staffing issues.</p> <p>We would like to have a quota of ~40 students. The CogSci MSc brings in 20-25 students a year and we expect at least another 10+ from UGs (both from the CogSci BSc/MA and external) and MSc students from PPLS.</p>
<p>Has this proposal been discussed with the DDoLT (Curriculum) or DoLT prior to BoS submission?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Who else has been consulted?</p> <p><i>Proposals should typically be discussed with relevant colleagues, including the programme director (for MSc courses). Summarize their comments if needed.</i></p>	<p>Chris Lucas, Sharon Goldwater</p>

Course Description (for DRPS)

This student-facing description should normally include (a) a more in-depth description of the learning aims, nature and context of the course, (b) a rough outline of the content, and (c) a description of how the course will be taught, and how students are expected to engage with it and to demonstrate their achievement of the learning outcomes.

Note: Please keep this section general enough to avoid the need for yearly updates, and keep in mind that you should have only around 15 lecture hours of examinable material per 10pts of a course. (10pt courses may have 18-20 lecture hours, but the rest should be used for guest lectures, revision sessions, assignment feedforward/feedback, etc.)

The first semester will focus on developing research skills (finding/reading/reviewing literature and science communication) while surveying foundational topics in cognitive science. The second semester will focus specifically on evaluating and presenting cognitive models. Each semester is split into two parts. In the first part, the instructor will provide introductory information and background material, as well as information on how to develop skills in reading scientific papers and presenting them. In the second part, students will present papers, chosen from a list provided by the instructor (or approved by the instructor).

Topics covered by the instructor will include:

- How to read, analyse and present research papers in cognitive modelling
- Example presentation(s) of papers
- Introduction and overview of modelling approaches/philosophies
- Model comparison and evaluation methods

Topics available for students to present will vary depending on the instructor. Topics may include: analogical reasoning, animal cognition, attention, biological motion, categorization, causality, communication, concepts, development, ecological considerations of modelling, event cognition, inductive reasoning, judgment & decision making, language, learning, memory, meta-cognition, number cognition, object cognition, physical reasoning, perception, problem solving, rationality, social reasoning, spatial cognition, specialization, theory of mind, temporal cognition etc. For specific topics, see the course web page or contact the instructor directly.

Assessment Weightings (for DRPS)

These should correspond approximately to the proportion of learning outcomes (below) that each component assesses. Note that assessed coursework is typically more time-consuming than exams for both students and staff. A typical course is based no more than 30% on coursework and doing so requires justification.

Written Exam __0__%

Practical Exam __0__% (for courses with programming exams)

Coursework __100__%

Additional Information, Assessment (for DRPS)

State briefly for students what type of coursework to expect, including whether implementation is required. E.g., "Coursework will involve implementing some of the methods discussed" or "The coursework will assess students' analysis and proof skills. No implementation is required." More specific information can be useful, but please keep it high level and do not include details that are likely to change from year to year.

Coursework will include weekly brief responses (20%), an essay in first semester (40%) and an oral presentation in second semester (40%). Students/groups will also have a formative oral presentation in the first semester.

Learning Outcomes (MAXIMUM OF 5; for DRPS)

*List the learning outcomes (LOs) of the course. These must be assessable (i.e., observable), so must specify what the student should be able to do concretely, not simply what they should "understand". Use concrete verbs that indicate (a) what type of assessment would be appropriate, and (b) what level of knowledge/thinking is expected (from recall to analysis to novel creation). **Example verbs:** define, explain, implement, compare, justify. Assessments (described later) should be tied to the LOs.*

*LOs should focus more on the types of thinking/skills developed than on the detailed course content, and should be appropriate to the level of the course: e.g., LOs at Level 11 should include more higher-level thinking skills than at Level 8. See [how to write good learning outcomes](#) and the [descriptors of the SCQF Levels](#). Also, please consider including LOs related to **social or ethical implications** or **meta-skills** as well as technically-focussed LOs.*

On completion of this course, the student will be able to

- 1) Demonstrate understanding of classic and current articles in cognitive science/modelling by summarizing their central ideas and/or results.
- 2) Demonstrate understanding of the relationship between computational models and cognitive theories, by being able to critically assess the theoretical adequacy of a given model.
- 3) Compare and contrast the strengths and weaknesses of different models of

the same behaviour.

4) Synthesize information from several papers on the same topic and create a coherent presentation on that topic.

5) Communicate key findings in cognitive science/modelling to relevant stakeholders and inter-disciplinary audiences.

Graduate Attributes, Personal & Professional Skills (for DRPS)

Please list the generic transferrable skills that this course will develop, as aligned with the [UoE's Graduate Attributes framework](#). Examples from the four skills categories in the framework include:

- **Research and enquiry:** *problem-solving, critical/analytical thinking, handling ambiguity, knowledge integration*
- **Personal effectiveness:** *leadership, planning and organizing, flexibility and change management, entrepreneurship*
- **Personal responsibility and autonomy:** *ethics and social responsibility, independent learning, self-awareness and reflection, creativity, decision-making*
- **Communication:** *interpersonal/teamwork skills; verbal, written, cross-cultural, or cross-disciplinary communication*

critical/analytical thinking, knowledge integration and application, independent learning, creativity, interpersonal skills, verbal, written and cross-disciplinary communication

2. Additional information on course design and resourcing (for BoS only, except where noted)

Breakdown of Learning and Teaching Activities (for DRPS)

Please fill in the number of timetabled hours per student for each type of activity. Do not include non-timetabled hours.

A typical 10pt Informatics course has:

- 18-20 lecture slots (2/wk), but only ~15h should be examinable lectures, with the rest used for guest lectures, revision sessions, assignment feedforward/feedback, etc. If unsure of plans, count these under 'lecture hours' but please explain tentative plans in the free text below.
- No more than 4-5 lab or tutorial hours. Please consider whether fewer can be used, e.g. by using some lecture hours for whole-class discussion/feedforward.

A typical 20pt course has 30 lecture slots (3/wk) and no more than 8 lab/tutorial hours.

Timetabled Hours

Type

6	Lecture Hours
32	Seminar/Tutorial Hours
0	Dissertation Project Supervision Hours
0	Supervised Lab/Workshop/Studio Hours
0	Feedback/Feedforward hours
0	Summative assessment hours [Normally 2h if using an exam; otherwise 0]
0	Revision Session Hours

(Note for ISS: Remaining hours should be allocated to Directed and Undirected Learning Activities.)

Use of timetabled activities (not to be included in DRPS)

If labs or tutorials are planned, please describe their role in the course (e.g., as support for assessed coursework, review of exercises, discussion of ethical questions, etc). If a non-standard pattern or style of lectures is planned, please explain.

The course is modelled after a US style seminar. Each semester will begin with lectures and then transition to student presentations and class discussions.

Summative assessment and time spent on assignments (not to be included in DRPS)

Please describe your plans for summative assessment, in more detail than in the student-facing description: How many and what types of assessment are planned (oral presentation, report, programming, etc)? For each piece of assessment, please indicate **(a)** which learning outcome(s) it assesses; and **(b)** how many hours students are expected to spend on it.

Please minimize the time spent on summative assessments (for both students and markers) while robustly assessing the learning outcomes. See the [School policy on Workload and Assessment](#), which places limits on the number of summative courseworks and time expectations: to ensure a 35-40h working week, we must limit time asked of students to **6-7h/wk in total per 10 credits, including contact hours, self-study, and coursework.**

Weekly brief (1 paragraph) paper responses assess LOs 1-3. They should take no more than an hour each.

Essay (5 page max) will assess LO 1,2 & 5. Should take 8-12 hours.
 Oral presentation (45 min) will assess LO 1-5. Should take 8-12 hours.

Tentative plans for feedback/formative assessment (not to be included in DRPS)

Please describe your current plans for providing feedback to students: e.g. oral feedback during labs/tutorials, automarked solutions to in-lecture or online quizzes, peer feedback, etc. We also encourage submission of at least one piece of (individual or group) written work, with formative feedback emphasizing how students can improve.

Some useful guides for planning effective and efficient feedback:

- Two short IAD web pages: [Five basic principles for feedback](#) and [Tips for improving feedback](#)
- [EngagED in... assessment and feedback](#). This flyer from IAD discusses assessment **of, for, and as** learning, and includes examples of innovative approaches that could help both with scaling to large courses and with causing students to reflect on and become engaged with their own assessment.
- Considerable further reading is available at the [University pages on Enhancing Feedback](#).

Brief paper responses will be incorporated into the discussion and feedback will be provided then. One brief paper response will receive written formative feedback about the writing in prep for the essay.

The essay will receive written feedback.

In the first semester, the student/group will have an oral presentation and receive peer/instructor formative feedback directly after the presentation. The group will also be provided with instructors written comments wrt the rubric. In the second semester, the students/group will just receive the written comments wrt the rubric.

Decolonisation and Inclusivity (not to be included in DRPS)

*What actions are you taking towards making your course inclusive for all students, in terms of both **content** and **delivery**? Please be as specific as possible. If you are not taking any action, please justify. [See suggestions and guidance here](#).*

Content: The course will highlight contributions from a diverse set of researchers across the cognitive sciences. The suggested topics and readings will span different cultures, geographic regions, viewpoints and times. Students will also be allowed to bring forward their own readings and diversity will be encouraged. Lastly, student will be taught how to make their presentations and ideas accessible to diverse stakeholders.

Delivery: Inclusivity is vital to the success of this kind of seminar course. Every student will be expected to contribute both by presenting papers and by taking part in discussion following presentations. Active learning is built into the course. The first two weeks of lectures will include exercises modelling behavior and expectations for participation and feedback. Further, course materials will be prepared with accessibility in mind. Lastly, our assessment will be framed in terms of real world applications following the purpose, task, criteria framework. Students will also receive formative feedback before summative assessment.

Anticipated Resource Requirements

If tutorials are needed, how many

No tutorials

students per tutors? (<i>Please provide your desired number, and the maximum feasible number.</i>)	
If labs are needed, how many students per demonstrator? (<i>Please provide your desired number, and the maximum feasible number.</i>)	No labs
Please estimate the number of hours required for marking, per student.	2 hours / student
If any other teaching support resource will be requested in order to develop or maintain the course, please provide an estimate of that here.	
Do you anticipate any difficulty recruiting enough teaching support? (<i>For example if the course is very large or very specialized.</i>)	Possibly.
Does the course have any scaling limits due to available space or equipment?	As the course is a seminar, it doesn't scale greater than 50 students. Ideally ~30
If equipment is required, please state how it will be procured and maintained.	N/A
Does the course have any external funding? (<i>Typically only for CPD courses</i>)	N/A
Does the course need any special arrangements such as quotas, agreements with other schools, or registration arrangements? Does it have any atypical characteristics that may affect finance or student registration? Please specify if so.	Quota: 40

3. **Further information for BoS consideration**

A full proposal for a new course must include examples of exercises and assessment. Please provide these below, along with publicity information.

Course information and publicity

The course web page (typically the Learn landing page) will be linked from the Sortable Course List, and information such as timetables and assignment deadlines must be made available prior to the start of the academic year. Please specify here if any additional info/publicity is needed for your course, especially if it is aimed largely at non-Sol students.

The course will be on the DPT as optional for a few MSc programs in PPLS. We should keep them in the loop to any changes.

Sample tutorial/lab sheet questions

Provide a list of tutorial questions and answers and/or samples of lab sheets. These need not be fully fleshed out but should indicate what sort of exercises will be provided to help students learn the material.

N/A

Sample assessment materials

*If the course is primarily assessed by **exam**, provide a sample exam question with model answers. The [online list of past exam papers](#) gives an idea of typical and alternative exam formats.*

*If the course is largely or primarily assessed by **coursework**, provide a sketch of a possible assignment with an estimate of effort against each sub-task and a description of marking criteria.*

attached

Any other relevant materials

Include anything else that is relevant, possibly in the form of links. If you do not want to specify a set of concrete readings for the official course descriptor, please list examples here.

4. **Additional Course Details for DRPS**

Except where otherwise noted, these fields are required for entry into EUCLID and will be visible to students in the DRPS entry.

Planned Academic Year of Delivery <i>(The first year you anticipate the course running, e.g. AY 2019-20)</i>	AY 2022-2023
Keywords <i>Give a list of searchable keywords for the course.</i>	Cognitive science, cognitive modelling, science communication
Course Organiser <i>(By default, the course proposer)</i>	Frank Mollica
Intended Delivery Period	<input type="checkbox"/> Semester1 <input type="checkbox"/> Semester 2 <input checked="" type="checkbox"/> Full Year <input type="checkbox"/> Summer <input type="checkbox"/> Other (please specify):
Timetable considerations/conflicts <i>For School use. Please specify any constraints to be considered (e.g. overlap of popular combinations, other specialism courses, external courses etc). Include whether the semester delivery is constrained or could be flexible.</i>	Student will be on the CogSci MSc so the core cogsci courses: CCS, IPP, ANLP, NLUGMT, HCI, HF, CCN, SP (PPLS), ASR, Simulating Language (PPLS), Speech Recognition. Also likely MLP, IAML, Natural Computing.
Reading List/Learning Resources (for DRPS) <i>You are encouraged to create resource lists using LEGANTO</i>	
Feedback Information <i>Provide a high-level description of how and what type of feedback will be provided to students, for inclusion in DRPS.</i>	Written feedback on essays. Verbal feedback on presentations.
Is this course available to visiting students?	<input checked="" type="checkbox"/> Yes (default) <input type="checkbox"/> No If no, please provide a justification here:
Required pre-requisite courses <i>Use sparingly: these are enforced in PATH and can only be waived by approval from the School's Curriculum Approval Officer. Note that cross-year required pre-requisites may prevent</i>	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (please specify full course name(s) and code(s)):

<p><i>MSc students from registering; consider using recommended pre-requisites or "other requirements" instead.</i></p>	
<p>Recommended pre-requisite courses</p>	<p><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (please specify full course name(s) and code(s)): Computational Cognitive Science (INFR10054)</p>
<p>Required co-requisite courses <i>Specify any courses that must be taken in parallel with the existing course. Note that this leads to a timetabling constraint that should be mentioned elsewhere in the proposal.</i></p>	<p><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (please specify full course name(s) and code(s)):</p>
<p>Prohibited Combinations <i>Specify any courses that may not be taken in combination with the proposed course].</i></p>	<p><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (please specify full course name(s) and code(s)): Informatics Research Review (INFR11136)</p>
<p>Other Requirements/Additional Information <i>This information is often used by MSc students and students from other Schools to see if they have appropriate background without having done our School's courses. So please avoid course titles, instead list specific knowledge and skills (such as mathematical concepts, programming ability or specific languages, etc).</i> <i>Also list any other constraints on registration, for example: "Only available to 4th Year Informatics students including those on joint degrees." or "This course is open to all Informatics students including those on joint degrees, and to students in the School of Mathematics. Other external students whose DPT does not list this course should seek permission from the course organiser."</i></p>	<p><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (please specify): The course assumes knowledge of cognitive science and, by the second semester, knowledge of linear algebra, probability theory, statistics (linear/logistic regression) and model evaluation as would be acquired in Computational Cognitive Science. Data visualization and programming experience will be useful but there is no assessed programming. This course is open to 4th Year Informatics and PPLS students and to MSc students whose DPT lists this course. Other external students whose DPT does not list this course should see permission from the course organiser.</p>
<p>Visiting Student Pre-requisites</p>	<p><input checked="" type="checkbox"/> Same as "other requirements" <input type="checkbox"/> Different than "other requirements" (please specify):</p>

5. Placement in degree programme tables: for level 9-11 courses only (except EPCC)

This section is for consideration by the Board of Studies and will be used later by ITO to determine where the course will be added to existing degree programme tables.

<p>Is this course restricted to students on a specific degree? <i>E.g., some courses are only available to students on a specific CDT or MSc.</i></p>	<p><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (please specify and provide justification):</p> <p>The course is restricted to students on the Cognitive Science BSc, MSc and MA. The goal is to build a cohort which requires a small size. As this course replaces IRR for MSc students, restricting it is also for administrative convenience.</p>
<p>Is this course compulsory for students on any degree(s)?</p>	<p><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (please specify and provide justification):</p> <p>MSc Cognitive Science – to provide cohort experience and to standardize the graduate attributes of the specialized degree.</p>
<p>Any issues for part-time students? <i>Normally, part-time students have access to the same courses as full-time students on the equivalent degree. If you anticipate any problems with this, please specify here.</i></p>	<p>No.</p>

For optional courses:

If this course is available but non-compulsory for students on various degrees (most courses), please fill in this section. The choices here determine where the course appears in degree programme tables (DPTs) and the 2-3 character tags are displayed in the Informatics sortable course list.

<p>Should this course be tagged as 'ML' (machine learning foundations and methods)? <i>Courses with the ML tag are typically very high-demand and most degrees limit the number of ML credits. If your course might appeal to a similar audience but draw off students from these large courses, please select 'no' and choose one of the tags below.</i></p>	<p><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes</p>
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<p>If you chose 'no', please choose at least one of the following tags...</p> <p><i>Ideally, select exactly one, unless there is a good argument for more than one. These three are used in various combinations for many of our degrees.</i></p>	<p><input type="checkbox"/> FSS (CS foundations, systems, and software)</p> <p><input type="checkbox"/> AIA (artificial intelligence applications and paradigms)</p> <p><input checked="" type="checkbox"/> COG (cognitive science: including HCI and NLP courses, but not most other AI courses. Please restrict to courses most relevant to natural cognition.)</p>
<p>...and also tick if any of the following tags or categories apply.</p> <p><i>Do not tick any of these if you selected 'ML' already.</i></p>	<p><input type="checkbox"/> SE (software engineering: including courses that are highly relevant to SE degrees. All SE courses should also be FSS. This tag is mainly relevant for UG SE degrees.)</p> <p><input type="checkbox"/> Databases and data management systems (used for Data Science MSc and MSc(R))</p> <p><input type="checkbox"/> Unstructured data and applications (used for Data Science MSc and MSc(R))</p> <p><input type="checkbox"/> Level 11 Security courses (used for Security MSc)</p> <p><input type="checkbox"/> ATFC Optional courses (used for ATFC MSc)</p>
<p>If you are not sure which tags are most appropriate or have other questions about this section, please note any comments/issues here.</p>	

Guide to preparing your presentation

Format

- Each presentation is given by 2-3 people, who will present at least two papers (approved by instructor).
- Plan on presenting for around 35 mins, followed by discussion/questions. We will give you time indicators and cut you off after 40 minutes regardless of whether you are done; if you aren't, it is likely to affect your mark.
- After the presentation itself, your group should provide 3-4 prompts for class discussion. These can be questions that the target articles leave unanswered, claims in target articles that would be interesting to debate, or anything else that you believe would lead to a fruitful discussion related to the week's topic.
- You may use slides or whiteboard, but should be organized and use visuals clearly and effectively (see AV section below).
- All students in the group should present some material, you can choose how to divide it up.
- Presentation should be coherent. This means you will need to discuss and plan with your group. You may decide that one person should be primarily responsible for each paper, but to create a coherent presentation, you will all need to be familiar with both papers and will need to discuss the overall presentation of both papers and how they relate to each other.

Logistics

- You must email us your slides by 7 p.m. the night *before* your presentation. This is both to ensure a backup copy in case your laptop/USB fails, and also for marking purposes. If you do not do this, and you have a technical problem that prevents you from presenting, you will receive a 0 on the assignment. In any case, if we do not have your slides by the 7 p.m. deadline, you will receive a 5 mark penalty on the assignment. We have intentionally set the deadline on the previous night so that you will not be tempted to stay up late working on your slides. Not sleeping enough is a great recipe for a poor presentation.
- When sending slides, PDF files are preferable.
- If you plan to make extensive use of the whiteboard rather than slides, you must speak to us well ahead of time (at least 4 business days). Some use of the whiteboard is fine without advance notice.
- Please arrive five minutes early on the day of your presentation, to allow time to set up.

Content

Presentations should include:

- An introduction to the topic: what is the psychological phenomenon being modelled, and what question(s) are being addressed in the papers? How do they tie in with some of the big questions we've discussed?
- An explanation of the models presented and results obtained.
- Some analysis or comparison of the models, e.g. What are their strengths and weaknesses? Do you find one more believable, and why? Are there remaining issues that neither addresses?

Good presentations will also normally include examples, figures, or diagrams to illustrate important concepts or results.

NOTE: 35 minutes is not a long time for two papers! You will need to decide how much detail is appropriate, and which information is most important. Please *do not* try to present everything from both papers. Remember, all students in the class should have read at least one paper on a similar topic, normally one of the two presented. Prepare your background material with this in mind.

Delivery

Part of your mark will be based on your delivery. If you wish to do well on this part of the assignment, one word will tell you how: **practice!** Practicing your presentation out loud will not only help you figure out how long it will take, but will also make you more confident and will allow you to work out how to explain difficult concepts ahead of time. See the marking sheet for the criteria we will be using to assess your delivery. Since you already have a group to work with, you would do well to use the other students in your group as a practice audience and give each other feedback on delivery.

Having a well-organized talk is a very good start to keeping your audience engaged and your message understood, but it's important to understand that people have limited memory and attention. That means they will not remember everything you said in the beginning of your talk by the end (or even the middle). You need to help them out by providing verbal cues (rarely, if ever, are bullets needed!) reminding them what you have already told them, what's coming up, and how everything fits together. I've heard these referred to as "signposts". Examples include: "OK, so that's the overview of the system, now I will talk about each of those parts in more detail", "I've now explained how they use X and Y to produce Z. Remember that what they are going to do with Z is A, so I'll now give you some more detail about that.", "I'm not going to talk about this part of the paper in any detail, but if you have questions about it I can answer them in the discussion after the presentation." In other words, think about your transitions, not just your slides. It is also often a good idea to include actual summary slides after each major section of your presentation, recapping the main points before moving on. You should not need more than one or two of these.

Audio-visual aids

You will also receive a mark for your use of audio-visual aids (slides, whiteboard, or any additional media). Here are some tips on appropriate use of these tools:

- Perhaps the most common mistake for beginning presenters is to put too much information (especially text) on the slides. If you practice your presentation (see above), you should

know it well enough that you do not need to use the slides to remind you of every single thing you want to say. You should especially try to avoid the trap of reading text directly from your slides. Slides are better used for highlighting key points and showing pictures (examples, figures, etc.)

- Make sure your slides are easy to read. Fonts should be no smaller than 20-24 point. Different colors can be used for emphasis, but should be used sparingly. Remember that color-blindness is fairly common, so try not to rely on color to distinguish things.
- If you reproduce a figure or table from a paper, make sure any labels or text are still visible, or add your own labels in larger fonts.
- Sometimes it can be easier to go through an example or draw a picture on the whiteboard than on the slides. This is ok as long as you are prepared: know how the whiteboard is set up in the room and how to switch between the projector and whiteboard without taking lots of time. And know what you are planning to draw!

Citations

- You may find that it is useful to include images, figures, or tables from the papers you are discussing or other sources. If you do so, **you must cite your sources**, even if the source appears to be clear from context. Papers should be cited as (Lastname, year) on the slide, with a full citation on a separate References slide at the end. Web sources should be cited by URL. See our lecture slides for examples.
- Direct quotations may also be used if cited (as above), but note that long quotations are usually a crutch used by students who do not understand the material enough to restate it in their own words. Use quotations with care.

Marking

- Students will receive separate marks for the presentation, however since all students in the group are responsible for the content and organization of the presentation, these marks will clearly be correlated.
- Do not expect that you can get a good mark by preparing "your" part of the presentation well. If you haven't discussed anything with your group, it will show.
- You can expect to receive your marks on the presentation by email, typically within a week of the presentation date.

Tips to avoid common mistakes

The following list of pointers is intended to help avoid common pitfalls in presentations.

- Explain all important technical terms that won't be obvious to your fellow students.
- Be sure to provide motivation for the models and experiments. Why did the authors do what they did? Why should we care?

- Make sure that fellow students who haven't read your specific paper can still follow the presentation.
- Don't necessarily describe every experiment in a paper if it would come at the cost of clarity or coherence.
- Always give citations for figures, quotations, and anything else you get from an external source, even if that source is the paper you're presenting.
- Practice your presentation, to ensure good pacer and transitions.
- Don't read directly from your slides.
- Only include figures or tables copied from the original paper if you can clearly explain their contents. If you're only going to talk about a small part of the figure, it may be better to create your own.

Date: _____

Student: _____

Scoring Rubric for Presentation

	Poor			Excellent	
	1	2	3	4	5
PRESENTATION SKILLS					
Was the introduction clear and attention grabbing?	·	·	·	·	·
Were the main ideas presented in an orderly and clear manner?	·	·	·	·	·
Were the visuals appropriate and helpful to the audience?	·	·	·	·	·
Did the talk maintain the interest of the audience?	·	·	·	·	·
Was there a theme or take-home message to the presentation?	·	·	·	·	·
Did the presentation fit into the time allotted?	·	·	·	·	·
Was the presenter responsive to audience questions?	·	·	·	·	·
KNOWLEDGE BASE					
Was proper background information on topic given?	·	·	·	·	·
Was the material selected for presentation appropriate for this topic?	·	·	·	·	·
Was enough essential information given to allow the audience to	·	·	·	·	·
effectively evaluate the topic?					
Was irrelevant or filler information excluded?	·	·	·	·	·
Did the presenter have a clear understanding of the material presented?	·	·	·	·	·
CRITICAL THINKING					
Were the main issues in this area identified?	·	·	·	·	·
Were both theoretical and empirical evidence presented?	·	·	·	·	·
Were the strengths and weaknesses of these theories, and the methods	·	·	·	·	·
used to gather this evidence adequately explained?					
Did the main points of the presentation follow from the material presented? ..	·	·	·	·	·
Were competing explanations or theories considered and dealt with properly? ..	·	·	·	·	·

OVERALL IMPRESSION ____/ 15

COMMENTS

TOTAL SCORE: ____/100

Guide to preparing final essays

Content and Format

Your essay should be based around one or two papers of your choice on a topic in cognitive modelling. It must discuss empirical findings in the context of a computational model or models to a non specialist audience. The easiest way to do this is to find a single paper that includes both empirical and modelling results, but the paper in question should be very meaty, i.e., fairly long and including many experiments or a thorough comparison with other approaches. If you cannot find a suitable single paper, you can look at two shorter papers covering different models of a single phenomenon, or additional experiments testing the same model. Marking will take into account the difficulty of the chosen article(s)/theme(s), but we find that stronger essays tend to be those that focus on a single article. It's okay to choose an older paper, but in that case you should explain how it relates to more recent work.

You must have your choice of paper(s) approved by the deadline given below. For help choosing papers, see the tips on the website in the first instance. If you are still having trouble, feel free to contact one of the instructors well *before* the deadline. *Essays may not focus on papers that are the subjects of student presentations.* In other words, if a paper is on the main reading list and its topic has been chosen for a presentation, it is not suitable as the main subject of an essay.

Whether you choose one or two main papers, your essay should discuss the context of the work (i.e., behavioural findings or philosophical questions addressed), summarise the model(s) and experiment(s), and critically evaluate the work. A good essay will include some material you get from "reading around" the topic. You may also wish to address one or more of the following questions: how does this work relate to other models/approaches we have studied in class? What questions are raised by this work? What further experimental or modelling work might help to address these questions? Your goal is to demonstrate that you can read a cognitive modelling paper, understand its methods, evaluate its claims and place it in context in the field.

Your essay should be between 2500 and 3000 words, including headers and figure captions but not the bibliography, and should be written at a level that an interested but non-specialist reader would understand -- someone who has some background in cognitive science but not necessarily in the specific area you are discussing. Articles in the journal *Trends in Cognitive Science*, many of which have been included as background readings in this course, are good examples of this level of writing (although the format/content of these articles is different from what you will write). Do not include an abstract.

[Insert Good Scholarly Practices Here]

Marking

Basic Criteria

1. Provides a clear description of the phenomena motivating the work and relevant empirical data from this and/or previous works.

2. Clearly states hypotheses being tested by the model(s) and their relevance to the field of cognitive science.
3. Clearly summarises the model(s), including any key technical details and assumptions that are made.
4. Summarises key experiments and results obtained in the chosen paper(s) and explains how these bear on the hypotheses being tested.
5. Demonstrates a detailed understanding of the chosen paper(s).
6. Discusses strengths and weaknesses of individual model(s) and evaluation(s).
7. Well written

Additional Criteria (beyond chosen papers)

1. Includes original discussion.
2. Explicitly compares alternative approaches or competing hypotheses.
3. Reviews additional behavioral evidence.
4. Reviews other uses of the model.
5. Relates the topic/model to broader issues and themes from the course/cognitive science or society.
6. Proposes useful extensions to the model or further ways to test them