

CS-200 – Introduction to Human-Computer Interaction

Module Coursework, 2021

Introduction

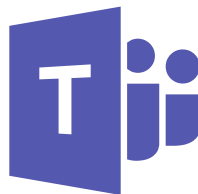
The coursework for this module is a group-based project that aims to provide a realistic example of how interaction design processes can work in the real world. For this task you will be working in groups of 4 or 5 people to complete an interaction design task. You may select groups yourself, or we can assign you to one.

This coursework specification document is handed out in the first week of the module, and your final group report is due at the end of the course, 13 weeks later. There are also two smaller milestone deliverables during the module (see below).

Deliverables, deadlines and marks

In total, the coursework is worth 40% of your CS-200 grade. There are 100 marks available, broken down as follows over three submissions:

1. 20 marks for milestone 1: *Understanding the User* (60s video), **due 17th February, 11am**
2. 20 marks for milestone 2: *Prototype Demo* (60s video), **due 17th March, 11am**
3. 60 marks for your final report (10 pages maximum, one of which outlines each team member's contributions towards the project), **due 27th April, 11am**



Specification

For most people worldwide, the time since late March 2020 has been a very unusual period in their lives. All of the normal everyday activities that people took for granted have been cancelled or severely restricted, and rather than in-person meetings and events, Zoom and other digital alternatives have become the norm.

The CS-200 coursework is focused on this interaction. By now you will have had plenty of experience using Zoom as part of your university learning, and perhaps in other situations, too. As a result, you will probably have plenty of ideas about how it could be improved. So, for the next three months, your group of interaction designers has been tasked to **design and evaluate a way of improving the Zoom experience**, going beyond what it currently offers.

To achieve this you will need to undertake a series of exercises, as described on the following pages. As part of the initial stage of this work, you will be reflecting individually on your own experience of connectivity and Zoom usability during the pandemic. For example: what worked; what didn't? What tools have you tried? What behaviours and interactions are possible; what is not?

Following this, you will come together as a group to compare experiences, then prototype a redesign or supplement to Zoom that you think would help, given your findings. Finally, you will show this to a group of users, getting their feedback and evaluating your design, and write a report about your work.

The challenge, then, is not simply to propose general or highly precise improvements (e.g., “faster internet connections”; “move this button 20 pixels higher”), but to make a real improvement to the design of Zoom and the overall videoconference experience. Think about how people will interact with your design and what real, measurable benefits it could bring. The developers behind tools like Zoom and Teams have already thought about these things on one level – see, for example, the “Virtual Theatre” mode that is available on Teams (right); or, Zoom’s here are Zoom’s video filters (below)

What could you do?



Note that you do not actually need to *build* your design; you only need to be able to make an early prototype that you could demonstrate to users, so keep an open mind, and think outside the box.

You will undertake each of the following key stages of the interaction design process, primarily as a group, and produce a range of artefacts, outputs and documentation that will come together in your final report. Each of these will be covered in detail as the course progresses, though note that the coursework is not directly mapped to lectures: the lectures give more detail about a range of topics, and the workshops are the primary place for coursework support. The stages and outputs are:

1. Group selection (due before 5pm, 1st February):

Form a group of 4-5 people (each of whom must be enrolled on CS-200). Use the following link: <https://goo.gl/AiYVQZ> to register your groups. Do this by **1st February, 5pm**. You will be allocated a group number and registered into groups on Canvas once allocation is complete. If you cannot find a group, use the Canvas “group members wanted” discussion board to find people to work with. If that fails, email us (see the end of this handout) and we will allocate you to one.

2. Personal reflection and autoethnography:

Autoethnography is a methodology and way of reflecting on and documenting your own experiences and behaviours as part of the process of understanding users.¹ Think about and make notes

¹ More details and full description in “Autoethnography - A tool for practice and education”, Cunningham and Jones, 2007; DOI: 10.1145/1073943.1073944. See PDF on Canvas: <https://canvas.swansea.ac.uk/files/1690468>.

about your experience using videoconferencing tools such as Zoom over the past ten months of the Covid-19 pandemic. Here are some starting points for your thinking:

- What tools have you tried? How do you use them? What do you do differently to in-person meetings?
- What behaviours and interactions are possible; what is not? How have normal human experiences been changed and made better or worse by the switch to video communication?
- What other tools or improvements have been proposed or developed by researchers or companies? What worked; what didn't?

Make notes during this task, creating a brief summary of your experiences to help feed into the next aspect of the group work.

3. Phase 1 – Understanding the User:

3.1. Project planning and ideation:

Meet in your group to talk about the coursework tasks. Make a plan for regular meetings, and schedule key actions. Use this first group meeting to begin discussing and analysing the results of your individual autoethnographies. Compare notes and experiences and think about the range of possibilities for improvements or additions to the videoconference experience. Write down your ideas and discuss how they might work. At this stage you should be willing to consider any idea, however strange it might seem.

3.2. Personas:

Personas are a fictional people that help you imagine and relate to key users of your potential designs.² Identify the range of user types and create personas of some typical people who might use the ideas you have come up with. Try to think about at least two distinctly different types of user here. Your designs may well change as a result of this process, as you consider the range of different potential users and interaction contexts.

3.3. Scenario:

Write one or more scenarios describing how your design (or designs) behaves. Make sure you set the scene and describe your idea in enough detail for the reader to know exactly how it would work. As with the personas task above, your design may well change as you do this. This is part of the design process, and helps improve your ideas. Do make sure to talk through and document the various ideas you come up with, though, in order to help form the final report at the end of the project.

4. Milestone 1 – 60-second *Understanding the User* video (due 17th February, 11am):

Create a video that a) briefly describes your group's key findings from the autoethnography exercise; and, b) presents your most promising scenario from Phase 1, making sure you explain how your idea would improve the Zoom experience.

5. Phase 2 – Prototyping:

5.1. Design prototype:

Create a prototype that gives users an idea of how your design would behave in practice. For example, depending on what your design does, you will need to indicate how the system will look or behave when a user is interacting with it, or when it is providing feedback. It is **not** a requirement for this to be a real working prototype (though that is

² More details in "Personas: Practice and Theory", Pruitt and Grudin, 2003; DOI: 10.1145/997078.997089. See PDF of associated book chapter at <http://www.jonathangrudin.com/wp-content/uploads/2017/03/DesignChapter.pdf>.

an option if you prefer); rather, you should design a hardware or software mock-up that gives the illusion to the user that the system is behaving in a certain way. The course workshops will cover a range of prototyping techniques that will be useful here, such as Wizard of Oz, and various low- and high-fidelity prototyping techniques.

6. Milestone 2 – 60-second Prototype Demo video (due 17th March, 11am):

Create a video that demonstrates how your prototype works, making sure to show how a user interacts with it, and how it behaves in the use-case situations relevant to its design.

7. Phase 3 – Evaluating:

7.1. Without users (expert evaluation):

Zoom aims to provide synchronous (i.e., realtime) interaction, and make it feel as much as possible like participants are collocated (i.e., in the same place). Researchers have previously found key characteristics for collocated synchronous interactions³. Evaluate your new design against this list of properties. For each one, investigate and explain either how your design aligns, or how it violates the desirable characteristic, and how this could be addressed (or, if applicable, why you feel this is not necessary or relevant to your use-case). Write up your results to be included in your final report.

7.2. With users (user study):

Design and run a user evaluation of your prototype with a group of people who are **not** taking CS-200. For example, this could be participants you recruit, or family and friends you know. You can screen share or use any other software or tools to help show your prototype. Gather feedback from your participants in a structured way.

As part of this you should create a study plan, including any pre-study data gathering (such as demographic information), the tasks your participants will undertake during the session (which will help you assess your system), any data you are recording during the trials (e.g., timings, recorded data, comparison tasks or systems) and any post-study data collection (e.g., questions, interviews). Make sure you also consider potential ethical issues, and obtain participants' informed consent. The results and analysis from your evaluation should be included in your final report.

8. Final report and individual reflection (due 27th April, 11am):

Compile a 10-page report documenting the entire process that you have undertaken. The write-ups, images and other outputs you have created as you have undertaken each part of the process will form the core of your report document. We suggest you use the headings in this specification document as a writing guide (i.e., *Understanding the User, Prototyping, Evaluating*) to help make sure you report on each aspect of the process.

The first page of your final report must have a foreword explaining what each group member did. The purpose of this is to acknowledge that you are a team and each made individual and often different contributions. By submitting the final group report you agree that this page is an accurate reflection of the work you each did. Your final report will be given a single mark for the whole group unless there are significant issues with this part of the document.

³ Full details in "Improving Remote Collaboration With Video Conferencing and Video Portals", Karis, Wildman and Mané, 2014 (pg 52); DOI: 10.1145/962081.962106 and "Distance matters", Olson and Olson, 2000 (pg. 149); DOI: 10.1207/S15327051HCI1523_4. See PDF table on Canvas: <https://canvas.swansea.ac.uk/files/1693664>.

Support

Each lecture in this course focuses on a particular aspect of interaction design. The aim, then, is to ensure that you are familiar with the entire process by the end of CS-200. Don't worry at this stage if some of the tasks listed above are unclear – in each lecture we will link the material back to the coursework (where applicable) to help you complete the tasks.

There is a significant amount of dedicated coursework support in this module. In particular, there are several coursework workshops, run by experienced HCI researchers, which are designed to give you practical information about each aspect of the coursework. These workshops will cover:

- Introduction and Autoethnography: **29th January, 1pm**
- Understanding the User: **5th February, 1pm**
- Prototyping: **5th March, 1pm**
- Evaluation: **23rd March, 1pm**

In addition, there are regular coursework support sessions throughout the semester. These are primarily drop-in sessions, similar to the unassessed labs in other modules, where you can ask questions, go through ideas or discuss any challenges with the coursework. They will also be used to give feedback for the two video milestones, and to help you with coursework-specific learning, such as making a good video, or writing a good report. For each of the deliverables there will also be supporting resources which will be given out at the appropriate time throughout the course. See also the **Course Summary** sheet on Canvas for more information about the workshops and other support sessions.

If you have questions it is always best to first check the CS-200 coursework discussion board on Canvas. This is the primary location for additional support – you may find that your question has already been answered, or that others also have the same question, so can benefit from seeing the answer.

If your questions or concerns relate to personal or private matters, or you are experiencing challenges related to working in your group, you can also contact Jen (j.pearson@swansea.ac.uk) or Simon (s.n.w.robinson@swansea.ac.uk) directly to arrange a meeting.

Formatting requirements

Milestone videos

Each group is required to submit two 60-second videos as part of this coursework. Only one video is required per group for each of the milestones. Your video should describe your progress towards the milestone objective via your choice of voiceover, audio, subtitles, video, animations and/or images.

These videos **must** be:

- In MP4 format (i.e., MPEG-4)
- No longer than 60 seconds (any additional content will be skipped and not marked)
- Named with your group number (i.e., group 25 would submit a file named "25.mp4")

The two video submissions are to help check on your group's progress. There will be showcases of all video submissions in the coursework support session following their submission. While your attendance at these showcases is optional, we highly encourage you to come along to get an idea of other groups' ideas and progress, as this will help encourage and guide you in your own work.

Please note that your videos do not need to be produced to a professional level, and having little or no experience of video editing should not be a barrier to creating a high-quality submission. A good video will have strong content at its core, which is reflected in the marking scheme at the end of this specification document.

The supporting resources on Canvas will be updated as the course progresses with examples to help illustrate the sorts of videos you could create. Note that the examples are intentionally not for this particular project specification!

Final report

Your final report **must** be in PDF format, and no longer than 10 pages. It must also include a foreword that explains each group member's contribution to the work (see details at the end of page 4, above). You should include an introduction and conclusion, and structure your submission as a written report, rather than just a collection of outputs. So, the format and section headings you use will probably closely match the tasks given in the Specification, above.

More guidance about how to bring together and lay out your report will be given in lectures, further support resources and the coursework support sessions and workshops, as detailed in the course schedule document.

Academic misconduct

By submitting work, both electronically and/or hardcopy, you affirm that you fully understand and are complying with the university's policy on Academic Misconduct. The policy can be found at <https://my.uni.swansea.ac.uk/academic-life/academic-misconduct/>.

CS-200 Coursework 2021: Milestone 1 Marking

	Little to no evidence (0% – 39%)	Partially met (40% – 69%)	Well / fully met (70% – 100%)
Content (80%)			
Summary of key findings from the individual autoethnography exercise			
Description of a meaningful new Zoom interaction scenario			
Explanation of how your idea would improve the Zoom experience			

Video (20%)

Clear, concise, well-presented information			
Appropriate use of audio and/or subtitles			
Correct length (60 seconds)			

Feedback:

Group number:

Overall mark: %

CS-200 Coursework 2021: Milestone 2 Marking

	Little to no evidence (0% – 39%)	Partially met (40% – 69%)	Well / fully met (70% – 100%)
Content (80%)			
Presentation of a believable mock-up / prototype of your design			
Demonstration of how a user will interact with your prototype			
Examples of your design's behaviour in a range of use-case situations			

Video (20%)

Clear, concise, well-presented information			
Appropriate use of audio and/or subtitles			
Correct length (60 seconds)			

Feedback:

Group number:

Overall mark: %

CS-200 Coursework 2021: Final Report Marking

Understanding the user (25%)

Bad fail (0-30)
Fail (30-39)
3rd (40-49)
2ii (50-59)
2i (60-69)
1st (70-85)
High 1st (85-100)

- Summary of key findings from the individual autoethnography exercise
- Description of one or more meaningful new Zoom interaction designs, and explanation of how these were informed by your results, providing real benefits
- Description of two or more distinct personas of typical users of your new design
- A scenario describing how your final system design behaves, and how users interact with it in various use-case situations

Prototyping (25%)

- Description and presentation of a believable mock-up / prototype of your design
- Clearly explained examples (e.g., using labelled images or diagrams) of your design's behaviour in a range of use-case situations
- Explanation of how you will test your prototype in a way that gives users the impression it is working

Evaluating (40%)

- Present a complete expert evaluation that includes all 11 characteristics
- Show you understand each characteristic (e.g., more than just yes/no answers), via instances of where each one is well applied or broken
- Present a practical, realistic and ethically-sound plan that will collect useful data, and could be used by others to replicate your study
- Detail pre-, during- and post-study data collection methods, including a range of valid and useful questions that would lead to useful responses
- Summarise the findings from your study, reflecting on its success, any issues arising, and implications for your design

Presentation (10%)

- A complete, well-presented standalone report (with introduction, conclusion, etc.), including a foreword outlining each group member's contribution to the project
- High standard of spelling and grammar

Overall mark: %

What went well:

How to improve: