SCC.241 Human-Computer Interaction 25/26
Assessment and Coursework

This document explains how you will be assessed on this module, and it provides you with a complete specification of your coursework assignments. <u>Make sure to read the guideline at the start of the term so that you know exactly what the coursework expectations are</u>!

PART 1 – What do you have to do and how will you be assessed?

Coursework components
Coursework in SCC.241 accounts for 30% of your overall grade, split into:
- CW1: an individual test in-lab test in week 5 that is worth 10%.
- CW2: Group coursework: two assignments (A1 and A2, each worth 10%) on which you will work through the term with weekly feedback, for submission in week 10.

In addition to graded coursework, we provide an online tutorial in week 1, and week-on-week exercise sheets (E1-E9). These are not marked but you can earn a bonus points every week, which we will use to bump up your final CW grade.

Individual test (CW1, 10%)
This is a 30-minute Moodle quiz that you take in your workshop in week 5. It will test your ability to apply what you learned in weeks 1-4, to give you an idea of how are progressing.
- <u>Even though this will be set up as quiz, it will require application of knowledge, for which the exercises that we hand out every week are an important preparation</u>.
- You will receive your grade within a week, and there will be detailed feedback on the test in your workshop in week 6.

Group coursework (CW2, 20%)
You will work in groups of 5-6 that will be set up in your workshop in week 1. <u>Make sure to attend, so you can influence who you will work with</u>. Anyone not attending their first workshop will be allocated a group by us. All workshops will have a Teams space for sharing of workshop material, and each group will have a Teams channel for their collaboration.
- You will work on two practical assignments in your group: a reaction time experiment (A1) and a user study (A2). <u>A1 involves a little programming in Javascript, for which you have to complete an online tutorial in week 1</u>.
- You will work on A1 in weeks 2-4, and on A2 in weeks 6-10, and the workshops provide you with opportunity for feedback on your progress. You will need to allocate substantial time every week, for joint work on your tasks, in between the workshops.

CW2 Submission: Friday, week 10, at 5.00 pm
- The group submission must be a single presentation video that follows the Coursework Template provided on Moodle.
- Each group member must also submit an individual peer-review in which they rate the contribution of others in their group.

CW2 Assessment and Feedback:
- Groups receive written qualitative feedback on their work via Moodle.

- Each group member will receive an individual grade, published on their transcript.
- The individual grade will be determined by a mark for the quality of the submitted group work and a multiplier that reflects individual contribution, to ensure fairness. This means, group members may not receive identical marks for their group work. It is the responsibility of each group member to consistently demonstrate their contribution and performance to both their group and to teaching staff in workshops.

Exercises/Tutorials (0%, but you can earn bonus points for your CW2 grade)

In addition to graded coursework, we provide exercise sheets week on week (and in week 1 an online Javscript tutorial). The exercises support lecture revision and provide complementary material.

- We expect you to complete exercises BEFORE your next workshop (i.e. complete exercises on week 1 material before your week 2 workshop, etc).
- Exercises will not be marked but TAs will check whether you have done them.
- We incentivise week-on-week engagement by giving a bonus point every week if you come prepared (exercises completed) and contribute to discussion.
- Bonus points are not marks (i.e. you can get 100% for your CW without any bonus points) but we will use them to bump up your final grade for CW2. They will not be a massive factor but can lift your grade a little, to honour week-on-week engagement.

PART 2 – Practical assignments: Specification of group work tasks (CW2)

A1. Reaction Time Experiment

In this assignment you will study and learn how basic cognitive processes affect the reaction time of people. It tests your ability to implement, conduct and report an experiment on human performance.

As a basis, we provide you with an HTML/Javascript application that works as follows:
- The user starts a run of the experiment by pressing the SPACE bar
- After a random delay (2-6 seconds), the colour of a text field changes.
- The user's task is to react as quickly as possible by pressing SPACE.
- The program measures the time between colour change (= the stimulus) and the user's reaction. The measured time is stored in an array and displayed on the screen.
- The experiment ends when the user presses 'a' on the keyboard.
- The experiment starts again with 'SPACE'.

Task Description
Your task is to test a specific aspect of perception and cognition, for which you need to extend or modify the provided program. The exact choice of experiment is yours. Here are some examples, for inspiration:
- A visual perception test with different forms, shapes, symbols
- A hearing test with acoustic signals that are varied in volume/frequency.
- Reaction time for something that involves a decision (e.g., is the displayed stimulus a letter or a number?)
- Reaction when the task requires more cognitive processing (e.g., is a statement or a math equation true or false?)

<u>Keep the experiment simple: focus on one specific aspect (one variable)</u>. You will be assessed for how well you conduct and report your experiment, <u>not</u> for how complex it is.

You must complete the following four steps for this assignment. Document each step in the coursework presentation, using the template provided:

1. State the objective of your study clearly (what exactly are you testing?) and describe the design of the experiment (how you plan to conduct the test) in bullet points.

2. Implement your experiment by modifying the Javascript provided. Document your source code, so that it is clear what you added or changed (there is no expectation that this should be much!). Paste the relevant parts into the groupwork presentation.

3. Take a quick smartphone video of one of your team executing the experiment and copy it as evidence into the groupwork presentation.

4. Run your experiment with at least 6 participants (<u>use fellow students in SCC.241</u>). Each participant should do 10 trials for training, and then at least 10 trials that you use for data collection. Plot the results in a bar chart. Add the plot to your presentation and describe what the results show (1-2 sentences).

Timeline
- Week 2: introduction of the assignment in your workshop.
- Week 3: groups present their objective and plan, for feedback in their workshop.
- Week 4: groups present their experiment and results, for discussion and feedback.
- Work can be improved until submission in week 10 but there won't be any feedback on it after week 4, as we then move on to the next assignment.

Assessment Criteria
- Completeness – have you successfully addressed all steps?
- Clarity of description – could others easily reproduce your experiment?
- Quality of reporting – are the results presented adequately?

A2. Usability Evaluation

In this assignment you will compare the usability of two interfaces in a user study. It tests your ability to design, conduct and report a usability study with human participants.

Task Description
Your task is to compare the usability of two interfaces in terms of their effectiveness, efficiency and user satisfaction. You can choose any two interfaces that can be meaningfully compared in their usability. Here are a few examples:
- Comparing systems people use to complete transactions through a sequence of steps, e.g. booking systems
- Online shops for anything specific, for example buying shoes
- Different smartphone apps for the same purpose, e.g. for managing to-do lists
- Web sites or systems where the focus is on finding information
- Specific functionality of larger software packages or systems
- Tools for any special purpose or any specific user group

Along with choosing what to compare, you are also free to choose a particular focus for your evaluation e.g. on first-time use, or on expert performance. <u>It is important to have a clear focus and objective!</u> For guidance, your evaluation must meet the following criteria:

- The evaluation must be based on one or multiple clearly defined tasks that users have to complete. If the tasks you study are short, make use of variation and repetition.

- The study should take no less than 15 min. and no more than 30 min. for the user, including introduction, performing tasks, and filling in questionnaires.

- The study must provide data on effectiveness, efficiency and user satisfaction in accordance with your study objective. You can combine quantitative and qualitative data, or different types of quantitative data.

You must complete the following steps:

1. Plan your study: identify the interfaces that you will compare, and specify the task(s) that participants will be given and the study procedure. Also plan what data you will collect, how you will do that, and how plan to analyse and present the data.

2. Obtain ethics approval for your study, using a template we provide. This must clearly specify what will you study, what participants will be asked to do, and what data you plan to collect, and include a consent form and participant information sheet.

3. Take a quick smartphone video in which you show the interfaces you compare, and the kind of task(s) that participants will need to complete.

4. Carry out the study with at least 6 participants based on informed consent. <u>You must have ethics approval before you do this</u>. Report the participant demographics. Present your results in an appropriate form. <u>The data must be anonymised and not reveal names or identity of users</u>. Discuss what you can conclude from the data.

Timeline
- Week 6: Introduction and tutorial on usability evaluation in TA class
- Week 7: Groups present their study details in class, for feedback .
- Week 8: Groups present revised plan to obtain ethics approval in class.
- Week 9: Present results for feedback in class.
- Week 10: Submission as part of the complete groupwork presentation

Assessment Criteria
- Ethics – ethics approval is precondition for receiving any marks
- Completeness – have you successfully addressed all steps?
- Study design – could someone replicate your study? Are the methods appropriate?
- Evaluation – quality of analysis and reporting of results.