

Teaching Block 1 – Coursework Brief

Part A – Unit Specific Coursework Details (please complete as appropriate)

Unit Number: COMS30029

Unit Name: Human-Computer Interaction

Unit Director: Jon Bird

Assignment Name: Human-Computer Interaction Coursework

Assignment Weighting: %100

Assignment Description:

In this coursework you will work in groups to collect data on how real people interact with and through a real interactive system and then to analyse and reflect on their interactions.

You will collect observations about conventions and behaviours, analyse them using some of the theoretical frameworks we introduced in this unit, then reflect on the design insights and implications that you extract from this process.

Choose **ONLY ONE** of the following contexts to work on:

- Checking out and returning books at one of UoB's libraries
- Picking up and parking a Tier scooter



Library kiosk



Voi scooters (RIP), now Tier

In both contexts, arrange a time to be at the location and collect notes on how users use the range of interactive devices to achieve their objectives. For example, in the library, they might use the web-based catalogue to search for books or use the kiosk to check out books. With Tier scooters, users use an app, scan QR codes, and use controls on the scooters themselves. Following data collection, select some of your group members to go through the tasks you decided to observe, do the tasks yourselves in order to collect deeper reflections on the processes you observed.

In your groups, conduct and reflect on three separate analyses and apply them to the interaction scenarios experienced in these contexts, using first, second and third wave HCI theoretical frameworks and models.

Phase 1: “First Wave” Analysis

Consider the range of interactive devices available in each context and their various functionalities, tasks and features:

- Choose a particular task scenario that user do. **Describe what the task is** and then **analyse it using the KLM-GOMS model**. This could be any task you want to focus on, e.g. searching for a book, or locating the availability of a scooter.
- What **advantages** and **disadvantages** did your analysis process reveal about the design of the part of the interface that supports your chosen task?
- Suggest **design recommendations** based on your analysis to improve the design of the interface that supports your chosen task

Phase 2: “Second Wave” Analysis

Building on the task that you have chosen in Phase 1; we will now consider how the broader context of interaction impacts users. Here, you may consider how your choice of task from Phase 1 fits with other people, other users of the library or the scooters.

- **Describe your choice of task** and why it is a good candidate for a second wave HCI analysis
- Use EITHER **Activity Theory** or **Distribute Cognition** to perform an analysis of that task.
- You then have two options:
 - If you chose to use Activity Theory, suggest design recommendations based on your analysis, highlight **contradictions, primary or secondary**, you identified and how a redesign might resolve those contradictions.
 - If you chose to use Distributed Cognition, apply a **phenomenological breakdown analysis** to outline issues and **levels of breakdowns** as well as possible redesign solutions to them
- **Discuss** how your findings and articulate them in terms of how they relate to principles from **affordances** and **external representation**.

Phase 3: Third Wave Analysis

Continuing with the task scenario from Phase 2, consider the dimensions of **Flow experiences**:

- **Analyse** the extent to which the design of the interactive devices that support the task you analysed in Phase 2 targets dimensions of Flow
- **Describe** how you might re-design their features to target a **Self- Determination Theory** driven design instead of Flow
- **Reflect** on your analyses by contrasting how you applied Flow and SDT approaches in this context, and the extent to which the insights you discovered are similar or different from one another

Final reflections

Having conducted a KLM-GOMS analysis, an Activity Theory OR a Distributed Cognition analysis with reflections on phenomenological breakdown situations, and an analysis of engagement in terms of Flow experiences and SDT:

- **Extract and discuss** high level reflections to contrast findings from each analysis, with a particular focus on the design insights gained from each, and how they relate to the notion of “interaction” as outlined by **Hornbaek and Oulasvirta (2017)**

Deliverable

The main deliverable for the coursework is report (**max 10 pages, excluding references**) documenting your work using the following structure:

1. Introduction
2. Section 1: KLM-GOMS analysis and reflections (*Max 2 pages*)
 - a. KLM-GOMS analysis
 - b. Advantages/disadvantages outline
 - c. Design reflections
3. Section 2: Activity Theory/Distribute Cognition analysis and reflections (*Max 3 pages*)
 - a. Task description
 - b. AT/DT analysis
 - c. Contradiction/Breakdown analysis
 - d. Design reflections
4. Section 3: Flow/SDT (*Max 3 pages*)
 - a. Flow dimensions analysis
 - b. SDT re-design
 - c. Design reflection
5. Section 4: Final reflections
 - a. Reflections on interaction notions and design insights, contrasting findings from first, second and third wave analyses.

Support provided to students during coursework period:

- Fridays 11am-1pm: Drop-ins with TAs, use your Teams channels to book a slot TAs (tag head TA)
- Mondays 11am-12noon: Office hour, open chats with the unit director on Teams or in-person

Submission Details:

You must submit the coursework on the Blackboard page for the assessment unit COMS30029. On the assessment unit, go to the menu item “Assessment, Submission and Feedback” and follow the instructions there.

Marking Criteria (to be provided to students):

		Y3 Mark
Phase 1 (Max 2 pages)	KLM-GOMS analysis	15
	Advantages/Disadvantages	5
	Design reflections	5
Phase 2 (Max 3 pages)	Task description	5
	AT/DT analysis	15
	Contradiction/Breakdown	5
	Design Reflections	5
Phase 3 (Max 3 pages)	Flow dimensions	15
	SDT re-design	15
	Design reflections	5
Reflections (1-2 pages)	Reflections	10

Note on Marking:

- How individual marks will be derived for each student in a group:
 - There is one report per group, the group mark is the individual mark, modified as per the point below for engagement/contribution
- How do we deal with students who don't engage at all with groupwork:
 - We will ask groups to sign a joint contribution sheet where they agree on percentages of contributions, marks will be adjusted according to the joint contribution agreement. In case of disagreement, we will hold a mediation meeting to reach a consensus.
- What if a group member become ill and have to re-sit the unit (e.g. do all members of the group need to re-sit):
 - No. Only individuals concerned will need to re-sit the coursework. The complexity of coursework resit will be adjusted accordingly.

Guidelines for content and marks**40-49**

- Some effort to analyse using the theories and methods requested, but with errors in the analysis. The task chosen may be excessively simple, or not analysed at an appropriate level of detail.
- Some basic effort to list 2 or 3 points in each section of discussion, with some description and explanation, connecting them in a basic way to the analysis results.
- But with the following problems: Perhaps the discussion is very low on detail, perhaps the description is unclear, perhaps the recommendations are not plausible. Little effort to connect the recommendations and discussion to the analysis and the theory behind it.

50-59

- As above, but improved in the following ways
- Analyses are conducted with a few errors, but shows understanding. Analyses are conducted at the relevant level of detail
- the discussion is plausible and described in reasonable detail. Points are connected to the theories in some plausible way.
- There is understanding of the high-level features of the theories, but perhaps no in-depth understanding.

60-69

- All of the above, but improved as follows:
- The tasks are analysed correctly, with perhaps a few minor errors. Analyses are insightful and have depth, showing understanding of the relevant theories beyond their superficial features
- The discussion: (Design recommendations, advantages, disadvantages, contradictions) is fairly clear, and there is an effort to relate it to the results of the analyses and to the theories.
- References are made to papers and materials discussed in the course, and these references are relevant and appropriately cited
- The writing is good (see below), and use is made of relevant diagrams which add to the clarity. Either 1. there are a larger number of points made (e.g. recommendations, advantages, contradictions, reflections) - and these are plausible, relevant and related to the analyses and theories, or 2. these are discussed in greater (meaningful) detail, engaging with more than the superficial features of the theories

70+

- All of the above plus no significant errors in analysis.
- Original insight into the theories used
- Extensive references are made to papers discussed in the course, and citations are formatted consistently, using one of the major citation formats (we recommend ACM format).
- Different theories are related to one another intelligently, and with critical insight - weighing their relative qualities, merits and disadvantages, and understanding the value they bring to the analysis.
- The writing may reference the theories of human behaviour which lie behind the various approaches. It may engage with practical matters relevant to the application of theory in design work.
- Presentation is very clear, a pleasure to read, and includes relevant diagrams which are polished and add real clarity to the discussion.

General guidelines for writing and presentation

<50: Writing / Presentation is unclear and completely ungrammatical. Few images or illustrations, or they are not very relevant and don't help us understand the point.

50-59: Mostly grammatical, but sentences are long and not very clear. Arguments and paragraphs are badly structured. ratio of relevant-to-filler material is low. Not much in the way of headings etc. Use of images and illustrations, but they could be clearer.

60-75: Grammatical. Language is not excessively complex. Sentences are the right length flow well and are structured intelligently into paragraphs or sections (a good tip here is to aim for a series of short, simple, direct statements that each build upon one another to make a point). Section headings, images, formatting are used to improve clarity and break up the text or video. **7**

5+: All of the above, but now approaching publishable, ability to draw the reader in and communicate key information without excessive effort by the reader. Your marker is unbelievably grateful.

Part B – Universal Coursework Details (please do not alter)

Deadline

The deadline for submission of all optional unit assignments is 13:00 on Thursday 8th of December (the University discourages Friday deadlines !). Students should submit all required materials to the "Assessment, submission and feedback" section of Blackboard - it is essential that this is done on the Blackboard page related to the "With Coursework" variant of the unit.

Time commitment

You are expected to work on both of your optional unit courseworks in the 3-week coursework period as if it were a working week in a regular job - that is 5 days a week for no more than 8 hours a day. The effort spent on the assignment for each unit should be approximately equal, being roughly equivalent to 1.5 working weeks each. It is up to you how you distribute your time and workload between the two units within those constraints.

You are strongly advised NOT to try and work excessive hours during the coursework period: this is more likely to make your health worse than to make your marks better. If you need further pastoral/mental health support, please talk to your personal tutor, a senior tutor, or the university wellbeing service.

Academic Offences

Academic offences (including submission of work that is not your own, falsification of data/evidence or the use of materials without appropriate referencing) are all taken very seriously by the University.

Suspected offences will be dealt with in accordance with the University's policies and procedures. If an academic offence is suspected in your work, you will be asked to attend an interview with senior members of the school, where you will be given the opportunity to defend your work. The plagiarism panel are able to apply a range of penalties, depending the severity of the offence. These include: requirement to resubmit work, capping of grades and the award of no mark for an element of assessment.

Extenuating circumstances

If the completion of your assignment has been significantly disrupted by serious health conditions, personal problems, periods of quarantine, or other similar issues, you may be able to apply for consideration of extenuating circumstances (in accordance with the normal university policy and processes). Students should apply for consideration of extenuating circumstances as soon as possible when the problem occurs, using the following online form:

<https://www.bristol.ac.uk/request-extenuating-circumstances-form>

You should note however that extensions are not possible for optional unit assignments. If your application for extenuating circumstances is successful, it is most likely that you will be required to retake the assessment of the unit at the next available opportunity.