Student Guide to SDP Week One

Timetable

Day	Time	Event
Monday	13:30	Arrive at G.07
	13:45	Welcome and Introduction
	14:10	Talk about UCreate
	14:20	Meet team members, mentors and clients
	14:30	Brainstorming 1
	15:10	Break
	15:20	Brainstorming 2
	16:00	Closing and Questions
Tuesday	See email	Kit handouts
Wednesday	11:00	Guest Lecture 1: Chris Paton, Amazon (DHT LTB)
	12:00	Guest Lecture 2: Mike McQuaid (GitHub)
	14:00	Robot Building Workshop (AT lvl 3)
Thursday	13:00	EV3 Workshop (AT lvl 3)
	15:00	Arduino Workshop (AT lvl 3)
Friday	14:00	Pitches (back in G.07)

Details

Monday afternoon: Opening Session in the Informatics Forum Room G.07 from 1:30pm

- Introduction to the aims of the course, the task and the resources
- Getting to know your group, mentor and client
- Brainstorming - by the end of this session you should have:
    - A team name
    - A target application area to research and refine for your pitch on Friday
    - Initial agreement on team working methods (how will you organise and manage tasks), communication methods, individual roles etc.
    - One member of the team must be nominated as the key contact.

Tuesday: Collection of your robotics kit. A timetable detailing when each team should attend for their kit hand-out will be posted. This will also include an introduction to the SDP space, on level 3 of AT. We expect most groups will also have a group meeting to update their ideas given the constraints of the available resources.

Wednesday morning: Guest lectures at 11am and 12am.
Wednesday afternoon: Robot building workshop - max 2 members from each group. This will focus on the practicalities of building a robust robot (one that does not break, suffer from electrical failures, etc.) from the components in the kit.

Thursday: refining your ideas and planning your pitch. A single static slide in ppt format should be prepared, and must be sent to the Main TA (james.garforth@ed.ac.uk) before 9am on Friday.
Thursday afternoon: Software workshop - max 2 members from each group, to learn about using the EV3 and relevant software libraries.

Friday afternoon:

- Presenting your pitch: each group will have (a strictly timed) two minutes to present and two minutes to answer questions. The aim is to give all groups an overview of what the other groups plan to attempt, so you can decide if you need to be more (or less!) ambitious.

- Debrief from your client: each group will meet with their client for feedback on the plausibility of their plans.

With Your Mentor

- What will your management structure look like?
- What specific roles will individuals have?
- What approach will you take to communications?
- How will your organise your meetings with each other / your mentor?
- How will you allocate and track tasks?
- How will you share code?

With Your Client

Brainstorming

Assistive Robotics: robots processing sensory information and performing actions on behalf of people with disabilities, the elderly, or others who are unable to perform the task for themselves.

Try to think about the ways in which people lose some of their physical or mental autonomy.

- What tasks might these people find difficult?
- Are there things in their lives that they now have to do differently, which present them with more risk, or simply take a lot longer?
- Are any of these tasks repetitive or otherwise easily automated?

Thinking About Design

Designing the System:

- Who is the intended user of your system?
- What task(s) is it assisting them with?
- How does it do this?
- How does your user interact with the system?
- How is the physical robot designed and how does this assist in its functionality?
- How does the robot sense the world around it?

Minimum Requirements:

- There should be an actual physical robot component
- The robot should sense and react to its environment rather than just running a set of fixed instructions
- There should be a user-friendly interface for interacting with the robot
- Note that the robot is meant to be a prototype, demonstrating the core functionality, not a fully developed system.

Things to Consider:

- What parts of your system are dependent on each other? How will this affect their development?
- How are you going to demonstrate your system's capabilities effectively with limited time and resources?
- What things might go wrong in the context of your demos and how will you recover from them?
- How does the design of your robot fit into its marketing? Does it have a really recognisable shape, for example?

Kit Handout

Group numbers	Time
1,2	09:30
3,4	09:40
5,6	09:50
7,8	10:00
9,10	10:10
11,12	10:20
13,14	10:30
15,16	10:40
17,18	10:50
19,20	11:10

Pitch Checklist

You will not have very long to give your pitches (two minutes) so you should be clear and concise in what you include in it. The following information is key:

- Who is the intended user of your product?
- What does it help them with and why is this important?
- What are the key features it will have to achieve this goal?

Also: what is your team name!