

COURSE CONTENT

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| Course Code | DM3014 |
| Course Title | Interactive Devices |
| Pre-requisites | DM2007 Interactive II |
| No of AUs | 3 |
| Contact Hours | 39 hours studio contact |

Course Aims

This intermediate level course will introduce you through practice-based learning to an ability to design and implement device-based solutions for the presentation of media content.. This learning forms the foundation for further studies in Interaction Design and Media.

Intended Learning Outcomes (ILO)

By the end of the course, you should be able to:

1. Describe interaction and product design methods used in the design and development of an interactive product or device.
2. Generate interactive product and device concepts using various digital and/or physical media.
3. Apply interaction and product design methods and physical computing to conceptualise, design and develop interactive products or devices.
4. Present your interactive products and devices in a clear and cohesive manner through visual presentations and virtual/ physical objects.
5. Constructively discuss and critique interaction and product design methods and physical computing techniques employed in your own work and the work of your peers.

Course Content

In this course you will learn how to design and develop a device or an interactive product that will serve as a vehicle for any type of media content. This device can take any form and can utilize such media as screen, audio, DVD, physical computing (stepper motors, LED lights, etc.) or any combination thereof. You are encouraged to think of new ways of interaction that challenge existing models in interactive media. You will learn by practically engaging with the material substance of your projects.

Physical Computing

You will receive a basic introduction on how to design a digital object that reacts to analogue and real world settings and what humans can physically do.

Interaction Design/ Interactive Media

You will be introduced to concepts of interaction design, mobile media, and designing for environments/ locations.

Product Design

You will be introduced to the product design process for taking an idea through to execution as a complement to the creation of interactive objects and media, while considering factors such as designing for users and the human body, form giving and refinement of form. You will also

experience how to refine and develop a design concept for physical prototyping/ production and demo purposes.

Class assignments

You will produce creative projects that deal with designing for the human senses and body, interaction with environments, and speculative design. Classes will include mini-lectures, demonstrations, and activities that may be included in the assessment.

Assessment (includes both continuous and summative assessment)

| Component | ILO Tested | Programme LO | Weighting | Team/ Individual |
|--|------------|--------------|-----------|------------------|
| Continuous Assessment Low fidelity device prototype Refined device prototype | 1,2,3,4 | N.A | 40 | Individual |
| Main Project: Create an interactive object or device with a speculative and novel approach | 1,2,3,4 | N.A | 40 | Individual |
| Continuous Assessment: Participation | 5 | N.A | 20 | Individual |
| Total | | | 100% | |

Reading and References

1. Galloway, Alexander R. *Protocol: How control exists after decentralization*. MIT press, 2004.
2. Igoe, Tom. *Making things talk: Practical methods for connecting physical objects*. " O'Reilly Media, Inc.", 2007.
3. King, Simon, and Kuen Chang. *Understanding industrial design: principles for UX and interaction design*. " O'Reilly Media, Inc.", 2016.
4. Manovich, Lev. *The language of new media*. MIT press, 2001.
5. Wiener, Norbert. *Cybernetics or Control and Communication in the Animal and the Machine*. Vol. 25. MIT press, 1965.

Course Policies and Student Responsibilities

(1) General

You are expected to complete all assigned readings, activities, assignments, attend all classes punctually and complete all scheduled assignments by due dates. You are expected to take responsibility to follow up with assignments and course related announcements. You are expected to participate in all project critiques, class discussions and activities.

(2) Punctuality

You are expected to be punctual for all classes. If you are more than 30 minutes late, you will be

deemed as absent and will not be able to sign on the attendance register.

(3) Absenteeism

In-class activities make up a significant portion of your course grade. Absence from class without a valid reason will affect your participation grade. Valid reasons include falling sick supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies. There will be no make-up opportunities for in-class activities.

Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the [academic integrity website](#) for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Planned Weekly Schedule*

*Subject to adjustment by instructor according to the teaching situation, students' progress, public holidays and unforeseeable circumstances. A revised schedule will be issued to students at the start of the semester.

| Week | Topic | Course LO | Readings/ Activities |
|------|-------------------------------|-----------|---|
| 1 | Introduction | 2, 3 | Introductory Lecture: Introduction, timeline and conceptual outline Seminar introduction: Device of the week Project 1: Low fidelity prototype with one input and one output. |
| 2 | Low Fidelity Device prototype | 2,3 | Seminar: Device of the week presentation Project 1: Students in studio work. Continuous assessment and feedback throughout production. |

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| 3 | Student Presentations Low Fidelity Device prototype | 1, 3, 4, 5 | Project 1 presentation: Student presentations of low fidelity prototypes. |
| 4 | Refined device prototype | 1, 2, 3, | Lecture: Input devices, analogue to digital transformations Seminar: Device of the week presentation Project 2 : Refined device prototype with physical input and interaction |
| 5 | Refined device prototype | 1, 2, 3, | Lecture: Physical computing Seminar: Device of the week presentation Project 2: Students in studio work. Continuous assessment and feedback throughout production. |
| 6 | Refined device prototype | 1, 2, 3, | Project 2: Students in studio work. Continuous assessment and feedback throughout production. |
| 7 | Student Presentations Refined device prototype | 1, 3, 4, 5 | Project 2 presentation: Student presentations of refined device prototypes |
| 8 | Main Project | 1, 2, 3, | Lecture: Interaction design and environments Seminar: Device of the week presentation Project 3: Main project to create an interactive device with a speculative and novel approach |
| 9 | Main Project | 1, 2, 3, | Lecture: Product and Interface design Seminar: Device of the week presentation Project 3: |

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| | | | Students in studio work. Continuous assessment and feedback throughout production. |
| 10 | Main Project | 1, 2, 3, | <p>Lecture: Demo, proof of concept</p> <p>Seminar: Device of the week presentation</p> <p>Project 3: Students in studio work. Continuous assessment and feedback throughout production.</p> |
| 11 | Main Project | 1, 2, 3, | <p>Project 3: Students in studio work. Continuous assessment and feedback throughout production.</p> |
| 12 | Main Project | 1, 2, 3, | <p>Project 3: Students in studio work. Continuous assessment and feedback throughout production.</p> |
| 13 | Final student presentations Main project | 1, 3, 4, 5 | <p>Project 3 presentation: Student presentations of main project with critique and feedback</p> |