STUDY GUIDE

INTERFACE DESIGN

Organised by

Polytechnic University of Viseu

1. IDENTIFYING DATA.	
· Course Name.	Interface Design – the design Cycle Process
· Coordinating University.	Polytechnic University of Viseu
· Partner Universities Involved.	N/A
· Course Field(s).	Human-Computer Interaction; Innovative Systems; Usability; Interface Design; Creativity and Communication

· Related Study Programme.	Informatics Engineering
· ISCED Code.	0613/0211
· SDG.	3, 9, 10, 11
· Study Level.	Bachelor (B), Master (M)
· EUNICE Key Competencies	

Problem Solving	Strongly
Teamworking	Strongly
Communication	Moderately
Self-management	Strongly
Cognitive flexibility	Strongly
Digital competence	Not at all
Technical competence	Not at all
Global intercultural competence	Partially

· Number of ECTS credits allocated.	4
· Mode of Delivery.	Online live (synchronous) and self-study (asynchronous and/or a mix of both).
· Language of Instruction.	English
· Course Dates.	02/02/2026 - 29/05/2026
· Precise Schedule of the Lectures.	Synchronous sessions: Wednesday from 10 am to 12pm (CET time): 1. 4/2

	2. 11/2 3. 18/2 4. 25/2 5. 4/3 6. 11/3 7. 18/3 8. 26/3 9. 1/4 10. 8/4 11. 15/4 12. 22/04 Changes in the Schedule can be made due to contrains related to the start of the second semester in the partner institutions. Live classes will be through the ZOOM platform.
· Key Words.	Human-Computer Interaction; Innovative Systems; Usability; Interface Design; Creativity and Communication
· Catchy Phrase.	User Centered Design for Disruptive Interfaces

· Prerequisites and co-requisites.	- B1 Level of English - EUNICE student - Previous knowledge on the design process cycle is important, but not mandatory - Knowledge on human perception, color usage, design patterns is also important but not mandatory
· Number of EUNICE students that can attend the Course.	3 per partner
· Course inscription procedure(s).	EUNICE Application Portal

2. CONTACT DETAILS.	
· Department.	Department of Informatics, School of Technology and Management of Viseu
· Name of Lecturer.	Rui Pedro Monteiro Amaro Duarte
· E-mail.	pduarte@estgv.ipv.pt
· Other Lecturers.	

3. COURSE CONTENT.

The course will be delivered as a practical workshop based on the design process cycle, where students are invited to present their own solutions for a given problem. As the concepts are presented, students are invited to make decisions and create solutions. The challenge is to design an application (web and mobile) The design process cycle is a methodology based on a cyclic process of analysis, prototype and testing of a product or a process. When a client defines a need, the full cycle of the design process begins. First, personas and their tasks in the real system are identified. Next, representative tasks are extracted to prototype the solution. The next step is to design the mental model, based on the conceptual model. This requires the definition of metaphors for the system. The final step is to create storyboards based on the metaphor and the tasks and design low and high-fidelity prototypes.
The subjects to be addressed in the course are:

1 – Human perception and emotions
2 –Task Analysis
3 – Conceptual Models
4 – Prototyping
5 – Heuristic Evaluation
6 – User testing

4. LEARNING OUTCOMES.

The course on interface design based on the design process cycle aims at providing students with a set of techniques that allow them to create user-centred interfaces. The focus will be on the user and their needs and a practical approach. Concepts are given and applied to the problem to be solved in real-time. With this, students are expected to improve their skills in the design sprint process and realize the importance of user-centred design in disruptive interfaces.
At the end of this course, it is expected that students have high-quality prototypes of mobile app and web app designed by them.
Students are able, consequently, to apply these strategies in the design of interfaces, namely:

- Define tasks and Personas;
- Identify system metaphors;
- Prototype with wireframing;

Create high fidelity prototypes.

5. OBJECTIVES.

- Recognize the importance of studying the interaction between user and machine.
- Identify the physical and mental characteristics of the human being which are directly related to the quality of their interaction with the machines.
- Acquire mastery of principles, models and interaction techniques that allow analyzing, evaluating and improve the interfaces between humans and machines.
- Apply design principles.

Exercise the concepts discussed in real situations or simulations of reality.

6. COURSE ORGANISATION.	
UNITS	
1.	Human perception and emotions
2.	Task Analysis
3.	Conceptual Models
4.	Low Fidelity and High Fidelity Prototypes
5.	Heuristic Evaluation
6.	User Testing

LEARNING RESOURCES AND TOOLS.

The professor will provide PPT, articles and supporting documents.

PLANNED LEARNING ACTIVITIES AND TEACHING METHODS.

Several online tools will be used during the course:

- Material Design Website: https://material.io/
- Convert ideas icons: https://thenounproject.com/
- Icons: https://www.flaticon.com
- User Experience Questionnaire (UEQ): https://www.ueq-online.org/
- FIGMA software: https://www.figma.com/

7. ASSESSMENT METHODS, CRITERIA AND PERIOD.

*L*ectures, short weekly assignments, personal research. The evaluation of assignments is done individually. The group project is evaluated as a product to be delivered to a client.

OBSERVATIONS.

8. BIBLIOGRAPHY AND TEACHING MATERIALS.

- The professor will provide PPT, articles and supporting documents.
- online material
- Donald A. Norman, THE PSYCHOPATHOLOGY OF EVERYDAY THINGS, In Interactive Technologies, Readings in Human–Computer Interaction, Morgan Kaufmann, 1995, Pages 5-21, https://doi.org/10.1016/B978-0-08-051574-8.50006-6

- Issa, T., Isaias, P. (2022). Usability and Human–Computer Interaction (HCI). In: Sustainable Design. Springer, London. https://doi.org/10.1007/978-1-4471-7513-1_2
- Patel, V.L., Kaufman, D.R., Kannampallil, T. (2021). Human-Computer Interaction, Usability, and Workflow. In: Shortliffe, E.H., Cimino, J.J. (eds) Biomedical Informatics. Springer, Cham. https://doi.org/10.1007/978-3-030-58721-5_5
- Alty, J.L., Knott, R.P. (1999). Metaphor and Human-Computer Interaction: A Model Based Approach. In: Nehaniv, C.L. (eds) Computation for Metaphors, Analogy, and Agents. CMAA 1998. Lecture Notes in Computer Science(), vol 1562. Springer, Berlin, Heidelberg. https://doi.org/10.1007/3-540-48834- 0_17
- Daniel Fallman. 2003. Design-oriented human-computer interaction. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '03). Association for Computing Machinery, New York, NY, USA, 225–232. https://doi.org/10.1145/642611.642652
- William Odom, Ron Wakkary, Youn-kyung Lim, Audrey Desjardins, Bart Hengeveld, and Richard Banks. 2016. From Research Prototype to Research Product. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16). Association for Computing Machinery, New York, NY, USA, 2549–2561. https://doi.org/10.1145/2858036.2858447
- Jakob Nielsen and Rolf Molich. 1990. Heuristic evaluation of user interfaces. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '90). Association for Computing Machinery, New York, NY, USA, 249–256. https://doi.org/10.1145/97243.97281
- D. Diaper, "Scenarios and task analysis," in Interacting with Computers, vol. 14, no. 4, pp. 379-395, July 2002, doi: 10.1016/S0953-5438(02)00005-X.