Program Content

Semester	IV		
Course Code:	IT4106		
Course Name:	User Experience Design (UXD)		
Credit Value:	3 (2L + 1P)		
Core/Optional	Core		
Hourly Breakdown	Theory	Practical	Independent Learning
	30 hrs	30 hrs	90 hrs

Course Aim:

- The main objective of this course is to provide a holistic understanding to User Experience Design and to introduce the state of the art design and evaluation techniques practiced the industry in designing interactions.

Intended Learning Outcomes:

After following this course, students should be able to

- Explain the difference between good and poor User Experience Design (UXD)
- Describe what interaction design is and how it relates to human-computer interaction and UXD
- Explain the main principles of a user-centered approach.
- Describe what a conceptual model is and how to begin to formulate one.
- Outline the core interaction types for informing the development of a conceptual model
- Explain what cognition is and why it is important for UXD
- Explain how our emotions relate to behavior and the user experience
- Discuss how to plan and run a successful data gathering program
- Discuss the difference between qualitative and quantitative data and analysis.
- Analyze data gathered from questionnaires, interviews and observation studies
- Interpret and present findings in a meaningful and appropriate manner.
- Develop personas and scenarios for user requirements
- Describe prototyping and the different types of prototyping activities
- Produce simple prototypes from the models developed during the requirements activity.
- Explain the key concepts user experience evaluation
- Conduct User Experience evaluations with various methods

Course Content: (Main Topics, Sub topics)

Topic	Theory (Hrs)	Practical (Hrs.)
1. Introduction to Interaction Design and User Experience	3	-
2. Conceptual Interaction	2	2
3. Cognitive, Social and Emotional aspects of Design	4	2
4. Interfaces focused in User Experience Design	2	2
5. Data Gathering in UX	3	6
6. Data Analysis and Interpretation in UX	6	6
7. Designing Prototypes	5	6
8. Evaluating Designs	5	6
Total	**30**	**30**

1. **Introduction to Interaction Design and User Experience (3 hours)**
   - 1.1. Modern day HCI [Ref 1: Pg. (01-09)] [Ref 2]
   - 1.2. Interaction Design [Ref 1: Pg. (10-13), Pg. (38-55)]
   - 1.3. User Experience and Understanding Users [Ref 1: Pg. (14- 17), Pg. (22- 31)]
   - 1.4. Introduction to User Centerd Design [Ref 4]

2. **Conceptual Interaction (2 hours)**
   - 2.1. Conceptualizing Interaction [Ref 1: Pg. (71-73)]
   - 2.2. Conceptual Models [Ref 1: Pg. (75-77)]
   - 2.3. Interface Metaphors [Ref 1: Pg. (78-88) Pg. (91-93)]

3. **Cognitive, Social and Emotional aspects of Design (4 hours)**
   - 3.1. Introduction to Cognition [Ref 1: Pg. (102-106)]
   - 3.2. Cognitive Aspects [Ref 1: Pg. (109-123)]
   - 3.3. Cognitive Frameworks [Ref 1: Pg. (123-133)]
   - 3.4. Social Interactions
     - 3.4.1. Remote Conversations [Ref 1: Pg. (143-149)]
     - 3.4.2. Conversations, Co-Presence and Social Engagement [Ref 1: Pg. (150-149)]
   - 3.5. Emotional Interactions [Ref 1: Pg. (166-172)]
   - 3.6. Emotional Design [Ref 1: Pg. (172-174)]
   - 3.7. Affective Persuasive Technologies [Ref 1: Pg. (179-186)]

4. **Interfaces focused in User Experience Design (2 hours)**
   - 4.1. Command line, GUI and Multimedia [Ref 1: Pg. (194-207)]
   - 4.2. Virtual and Augmented Reality [Ref 1: Pg. (212-216), Pg. (241-245)]
   - 4.3. Web Interfaces [Ref 1: Pg. (216-218)]
   - 4.4. Mobile Interfaces [Ref 1: Pg. (219-221)]
   - 4.5. Appliances [Ref 1: Pg. (222-223)]
   - 4.6. Voice and Pen based interfaces [Ref 1: Pg. (224-228)]
   - 4.7. Touch, Haptics and Gestures [Ref 1: Pg. (228-232)]
   - 4.8. Multimodal Interfaces [Ref 1: Pg. (232-235)]
   - 4.9. Shareable and Tangible Interfaces [Ref 1: Pg. (235-241)]
   - 4.10. Wearables [Ref 1: Pg. (245-247)]
   - 4.11. Robots and Drones [Ref 1: Pg. (247-249)]
   - 4.12. Brain Computer Interfaces [Ref 1: Pg. (250)]
   - 4.13. Smart Interfaces [Ref 1: Pg. (251)]
   - 4.14. Natural Interfaces [Ref 1: Pg. (252-253)]

5. **Data Gathering in UX (3 hours)**
   - 5.1. Data Gathering
     - 5.1.1. Issues in data gathering [Ref 1: Pg. (260-265)]
     - 5.1.2.Recording data [Ref 1: Pg. (266-267)]
     - 5.1.3. Interviews [Ref 1: Pg. (267-271), Pg. (272-278)]
     - 5.1.4.Focus Groups [Ref 1: Pg. (272-267)]
     - 5.1.5.Questionnaires [Ref 1: Pg.(278-286)]

5.1.6.Observations [Ref 1: Pg.(287-300)]

5.2. Data Gathering for Requirements

5.2.1.Different Kinds of Requirements [Ref 1: Pg.(390-391)]

5.2.2.Engaging Users with Probes [Ref 1: Pg.(398-399)]

5.2.3.Contextual Inquiry [Ref 1: Pg.(400-402)]

5.2.4.Brainstorming [Ref 1: Pg.(402-403)]

6. Data Analysis and Interpretation in UX (6 hours)

6.1. Quantitative vs Qualitative [Ref 1: Pg.(308-311)]

6.2. How to do a Quantitative Analysis [Ref 1: Pg.(312-320)]

6.3. How to do a Qualitative Analysis [Ref 1: Pg.(320-328)]

6.4. Analytic Frameworks [Ref 1: Pg.(330-341)]

6.4.1.Conversation Analysis

6.4.2.Discourse analysis

6.4.3.Content analysis

6.4.4.Interaction analysis

6.4.5.Grounded theory

6.4.6.Systems based frameworks

6.5. Analyzing Requirements with Personas and Scenarios

6.5.1.Personas [Ref 1: Pg.(403-408)]

6.5.2.Scenarios [Ref 1: Pg.(408-415)]

6.6. Interpreting and Presenting Findings [Ref 1: Pg.(342-346)]

7. Designing Prototypes (5 hours)

7.1. Prototyping

7.1.1.Introduction [Ref 1: Pg. (422-425)]

7.1.2.Low-Fidelity Prototyping [Ref 1: Pg. (426-428)]

7.1.3. High-Fidelity Prototyping [Ref 1: Pg. (429)]

7.1.4.Generating Prototypes

7.1.4.1. Storyboards [Ref 1: Pg. (447 -449)]

7.1.4.2. Card based prototypes [Ref 1: Pg. (449 -451)]

7.1.4.3. Participatory Design [Ref 3]

7.2. Developing Conceptual [Ref 1: Pg. (445-446)]

7.3. Conceptual Design to Concrete Design [Ref 1: Pg. (435-445)]

8. Evaluating Designs (5 hour)

8.1. Introduction to Design Evaluation [Ref 1: Pg. (496-500)]

8.1.1.Evaluating in Controlled Settings [Ref 1: Pg. (501-504)]

8.1.2.Evaluating in Natural Settings (In -situ) [Ref 1: Pg. (504-505)]

8.1.3.Evaluating without users [Ref 1: Pg. (505-506)]

8.2. Usability Testing [Ref 1: Pg. (524-533)]

8.3. Conducting User Experience Experiments [Ref 1: Pg. (533-536)]

8.4. Conducting Field Trials [Ref 1: Pg. (537-542)]

8.5. Other Evaluation methods

8.5.1.Heuristic Evaluation [Ref 1: Pg. (550-559)]

8.5.2.Walk Throughs

- 8.5.2.1. Cognitive Walk-Throughs [Ref 1: Pg. (561-565)]
- 8.5.2.2. Pluralistic Walk-Throughs [Ref 1: Pg. (566-565)]
- 8.5.2.3. Web Analytics [Ref 1: Pg. (567-570)]
- 8.5.2.4. A/B Testing [Ref 1: Pg. (574-575)]

Teaching /Learning Methods:

You can access all learning materials and this syllabus in the VLE: http://vle.bit.lk/, if you are a registered student of the BIT degree program.

Assessment Strategy:

Continuous Assessments/Assignments:

The assignments consist of two quizzes, assignment quiz 1 (It covers the first half of the syllabus) and assignment quiz 2 (It covers the second half of the syllabus). The maximum mark for a question is 10 and the minimum mark for a question is 0 (irrespective of negative scores). The final assignment mark is calculated considering both assignments. To pass the online assignment component, students will have to obtain at least 40% for each assignment. Students are advised to complete online assignments before the given deadline. It is compulsory to pass the online assignment component to qualify to obtain the Level II Higher Diploma in IT (HDIT) certificate.
In the course, case studies/Lab sheets will be introduced, and students have to participate in the learning activities.

Final Exam:

Final examination of the course will be held at the end of the semester. The course is evaluated using a two hour question paper which consists of 25 MCQ (1 hour) and 2 Structured Questions (1 hour).

References/ Reading Materials:

- **Ref 1.** Interaction Design Beyond Human-Computer Interaction 5th Edition by Helen Sharp, Yvonne Rogers AND Jennifer Preece, 2019
- **Ref 2.** The three paradigms of HCI - Steve Harrison and Phoebe Sengers (2007) [https://asset-pdf.scinapse.io/prod/47513853/47513853.pdf]
- **Ref 3.** https://uxdesign.cc/participatory-design-in-practice-bf5bfe3f529
- **Ref 4.** https://www.interaction-design.org/literature/topics/user-centered-design#:~:text=User%2Dcentered%20design%20(UCD),and%20accessible%20products%20for%20them.