UNIVERSITI TEKNOLOGI MARA

CSC799: USABILITY ENGINEERING

Course Name (English)	USABILITY ENGINEERING APPROVED
Course Code	CSC799
MQF Credit	3
Course Description	Usability engineering is a set of behavioural research methods and techniques that can be applied at every stage of the software development lifecycle. It is used to improve the usability of the developed artefacts. This course describes the concepts, methods and techniques of engineering usability in Web-based environments. Students are required to acquire practical experience in conducting usability studies for Web-based systems that includes designing usability test of such systems, recruit suitable participants, conduct the test, analyse the results and report the findings.
Transferable Skills	Engineering usable product skills developed through tests, assignments and projects.
Teaching Methodologies	Lectures, Discussion
CLO	CLO1 Explain the fundamental of usability engineering issues in Web-based systems and applications CLO2 Summarize the importance of usability in current computer-driven world CLO3 Analyse the selected methods and techniques of usability engineering in Web-based systems and applications CLO4 Identify the methods and techniques of usability engineering (based on selected case studies).
Pre-Requisite Courses	No course recommendations

Topics
1. FUNDAMENTALS OF USABILITY ENGINEERING 1.1) • An overview of usability engineering 1.2) • The issues in usability engineering
2. USABILITY ENGINEERING LIFE CYCLE 2.1) • Requirements analysis 2.2) • Design, testing, and development 2.3) • Installation
3. USABILITY HEURISTICS, GUIDELINES AND STANDARDS 3.1) • The Web Accessibility Initiative Guidelines. 3.2) • The IBM Guidelines for accessibility of websites 3.3) • Nielsen's heuristics 3.4) • Gerhardt-Powals' cognitive engineering principles 3.5) • Weinschenk and Barker classification
4. THEORY AND PRACTICE OF USABILITY ENGINEERING 4.1) • Scenario-based 4.2) • Activity-based
5. USABILITY ENGINEERING METHODS AND TECHNIQUES 5.1) • Heuristic Evaluation (HE) 5.2) • Cognitive Walkthrough (CW) 5.3) • Action Analysis (AA) 5.4) • Thinking Aloud (THA) 5.5) • Field Observation (FO) 5.6) • Questionnaires (Q)

6. PRACTICE OF ENGINEERING USABILITY
6.1) • Design a usability test plan.
6.2) • Implement the usability test plan
6.3) • Evaluate the usability test plan

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Assignment	Assignment 1	10%	CLO2
Assignment	Assignment 2	10%	CLO2
Assignment	Assignment 3	10%	CLO4
Group Project	Project	30%	CLO4
Quiz	Quiz	10%	CLO3
Test	Test 1	15%	CLO1
Test	Test 2	15%	CLO3

Reading List

Recommended Text

- **MUHAMMAD SAEED , Sami Ullah 2016, *Usability Engineering: Evaluating usability*, LAP LAMBERT Academic Publishing United Kingdom [ISBN: 978333000987.]**

Reference Book Resources

- **Peter W. Szabo 2017, *User Experience Mapping*, Packt Publishing Birmingham, United Kigdom [ISBN: 9781787123502]**
- **Sinan Ozdemir,Divya Susarla 2018, *Feature Engineering Made Easy*, Packt Publishing Birmingham, United Kigdom [ISBN: 9781787287600]**
- **Marcelo M. Soares,Francisco Rebelo 2016, *Ergonomics in Design*, CRC Press , Tylor & Francis Group Boca Raton, Florida USA [ISBN: 9781498760706]**
- **Koray Yitmen 2016, *Business Analysis, Software Testing, Usability*, Lutfi Koray Yitmen [ISBN: 9786056606113]**

Article/Paper List

Reference Article/Paper Resources

- **Soares, Marcelo, Falcão, Christianne, Ahram 2016, Advances in Ergonomics Modeling, Usability & Special Populations, *Proceedings of the AHFE 2016 International Conference on Ergonomics Modeling, Usability & Special Populations*, July 27-31, 2016**

Other References

This Course does not have any other resources