National Computer Education Accreditation Council NCEAC

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**INSTITUTION**

**PROGRAM (S) TO BE EVALUATED**

1. **Course Description**

**PAF-KIET**

BACHELORS OF SCIENCE IN COMPUTER SCIENCE BS (CS) FOUR YEAR DEGREE

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Code** |  | **CS204** |  |  |  |
|  |  |  | | |  |
| **Course Title** |  | Human Computer Interaction | | |  |
|  |  |  |  |  |  |
| **Credit Hours** |  | 3 + 0 |  |  |  |
|  |  |  | | |  |
| **Prerequisites by Course(s) and** |  | Object-Oriented Programming, Database Management Systems | | |  |
| **Topics** |  |  |  |  |  |
|  |  |  | |  |  |
| **Assessment Instruments with** |  | Midterm Exam | | 20 |  |
| **Weights** (homework, quizzes, |  | Final Examination | | 40 |  |
| midterms, final, programming |  | Quiz |  | 5 |  |
| assignments, lab work, etc.) |  | Assignment | | 5 |  |
|  |  |  |
|  |  | Project |  | 20 |  |
|  |  | Presentation | | 5 |  |
|  |  | CP |  | 5 |  |
| **Course Coordinator** |  | Afshan Saad | |  |  |
|  |  |  | |  |  |
| **URL (if any)** |  | [https://lms.pafkiet.edu.pk](https://lms.pafkiet.edu.pk/) | |  |  |
|  |  |  | | |  |
| **Current Catalog Description** |  | This course is designed to provide the basic concepts, techniques, | | |  |
|  |  | methodologies and practical experience regarding interaction design - | | |  |
|  |  | which is at the heart of human computer interaction. The aim is to | | |  |
|  |  | train students in creating interactive design for gadgets and items of | | |  |
|  |  | everyday use by using creativity and HCI theory | | |  |
|  |  |  | | |  |
| **Textbook** (or **Laboratory Manual** |  | **Human Computer Interaction** | | |  |
| for Laboratory Courses) |  | Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale | | |  |
|  |  | Prentice Hall | |  |  |
|  |  | **Designing the User Interface: Strategies for Effective Human** | | |  |
|  |  | **Computer Interaction** | |  |  |
|  |  | Ben Shneiderman and Catherine Plaisant | | |  |
|  |  | Addison-Wesley | |  |  |
| **Reference Material** |  | - |  |  |  |
|  |  |  | | |  |
| **Course Goals** |  | 1.Knowledge and understanding of | | |  |
|  |  |  | Interaction Designs | |  |
|  |  |  | Interaction Principles | |  |
|  |  |  | Heuristics |  |  |
|  |  |  | Evaluations |  |  |
|  |  | 2.Cognitive skills (thinking and analysis). | | |  |
|  |  |  To evaluation a good design and bad design | | |  |
| **Topics Covered in the Course,** |  |  |  |  |  |
| **with Number of Lectures on Each** |  | Sheet is attached | |  |  |
| **Topic** (assume 15-week instruction |  |  |  |
|  |  |  |  |  |
| and one-hour lectures) |  |  |  |  |  |
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| **Laboratory Projects/Experiments** | This course is not practical | | |  |  |  |
| **Done in the Course** |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **Programming Assignments Done** | - |  |  |  |  |  |
| **in the Course** |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **Class Time Spent on** (in credit | **Theory** | **Problem** |  | **Solution** | **Social and Ethical** |  |
| hours) |  | **Analysis** |  | **Design** | **Issues** |  |
|  |  |  |  |  |  |  |
|  | 3 | - |  | - | - |  |
|  |  |  |  | |  |  |
| **Oral and Written Communications** | Every student is required to submit at least 1 project and to elaborate | | | | |  |
|  | it accordingly along with a viva examination. 2 presentations on | | | | |  |
|  | prototypes and final project | | |  |  |  |
|  |  |  |  |  |  |  |



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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Instructor Name** | |  |  |  | **Instructor Signature** |  |  |  |  |  |
| **Date** |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | |  |
| **SessionNo.** | **BookCh.** |  |  | **Topics to be Covered** | | **Date** |  | **Signature** | |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  | | |  |  |  |  |  |
| 1 | - |  | An introduction to HCI | | |  |  |  |  |  |
|  |  |  |  | | |  |  |  |  |  |
|  |  |  | Good design vs Bad Design | | |  |  |  |  |  |
| 2 | - |  | Benefits vs Cost | | |  |  |  |  |  |
|  |  |  | Importance of HCI | | |  |  |  |  |  |
| 3 | 1 |  | The Birth of HCI | | |  |  |  |  |  |
|  | History and Changing Trends | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| 4 | 1 |  | Usability | | |  |  |  |  |  |
|  |  |  |  | | |  |  |  |  |  |
|  |  |  | The Human | | |  |  |  |  |  |
|  |  |  | Interacting with Computer | | |  |  |  |  |  |
| 5 | 1 |  | Text, Speech, pointing | | |  |  |  |  |  |
|  |  |  | Display devices | | |  |  |  |  |  |
|  |  |  | Resolution and colors | | |  |  |  |  |  |
|  |  |  | Virtual Reality vs 3D interaction | | |  |  |  |  |  |
|  |  |  | Simulator | | |  |  |  |  |  |
| 6 | 1 |  | Physical Controls and sensors | | |  |  |  |  |  |
|  | Memory | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  | Processing and networks | | |  |  |  |  |  |
|  |  |  | Moore’s LawP | | |  |  |  |  |  |
|  |  |  | The Interaction | | |  |  |  |  |  |
| 7 | 2 |  | Terms of Interaction | | |  |  |  |  |  |
|  |  |  | Models of Interaction | | |  |  |  |  |  |
|  |  |  | Norman Model | | |  |  |  |  |  |
| 8 | 3 |  | Interaction Framework | | |  |  |  |  |  |
|  |  |  | Abowd and Beale framework | | |  |  |  |  |  |
|  |  |  | Ergonomics | | |  |  |  |  |  |
| 9 | 3 |  | Interfaces and Human Factor | | |  |  |  |  |  |
|  |  |  | Interaction Styles | | |  |  |  |  |  |
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| 10 | 3 | WIMP Interface | |  |  |  |
| Paradigms for Interaction | |  |  |  |
|  |  |  |  |  |
| 11 | 6 | Prototyping | |  |  |  |
| Power of Prototyping | |  |  |  |
|  |  |  |  |  |
|  |  | Storyboards, | |  |  |  |
| 12 | 6 | Paper prototyping | |  |  |  |
|  |  | Mockups | |  |  |  |
| 13 | 7 | Usability | |  |  |  |
| Principles of Usability | |  |  |  |
|  |  |  |  |  |
|  |  | Learnability | |  |  |  |
|  |  | Flexibility | |  |  |  |
| 14 | 7 | Robustness | |  |  |  |
|  |  | Usability in SDLC | |  |  |  |
|  |  | Usability Specification | |  |  |  |
| 15 | - | **MID TERM Examination** |  |  |  |  |
|  |  |  |  |  |  |  |
| 16 | - | **MID TERM Examination** |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  | Design Process | |  |  |  |
| 17 | 5 | Design | |  |  |  |
| User Focus | |  |  |  |
|  |  |  |  |  |
|  |  | Scenarios | |  |  |  |
|  |  | Navigation Design | |  |  |  |
| 18 | 6 | Screen Design & Layout | |  |  |  |
|  |  | Iteration | |  |  |  |
| 19 | 6 | ISO usability standard 9241 | |  |  |  |
|  |  |  |  |  |  |  |
| 20 | 8 | Nelsons’s Heuristics | |  |  |  |
|  |  |  |  |  |  |  |
| 21 | 8 | Norman’s 7 Principles | |  |  |  |
|  |  |  | |  |  |  |
|  |  |  |  |  |  |  |
| 22 | 8 | Norman’s 7 Principles |  |  |  |  |
|  |  |  | |  |  |  |
| 23 | 9 | Shneiderman’s 8 Golden Rules | |  |  |  |
|  |  |  | |  |  |  |
| 24 | 9 | Shneiderman’s 8 Golden Rules | |  |  |  |
|  |  |  | |  |  |  |
| 25 | 9 | Evaluating designs | |  |  |  |
| Creating and comparing alternatives | |  |  |  |
|  |  |  |  |  |
| 26 | 9 | Heuristic Evaluation | |  |  |  |
| Why and How | |  |  |  |
|  |  |  |  |  |
| 27 | 5 | Design Heuristics | |  |  |  |
|  |  |  | |  |  |  |
| 28 | 5 | Design Heuristics | |  |  |  |
|  |  |  | |  |  |  |
| 29 | - | Project Presentation | |  |  |  |
|  |  |  | |  |  |  |
| 30 | - | Project Presentation | |  |  |  |
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