<table>
<tr><td>Course Title</td><td colspan="2">Human Computer Interaction</td><td>Course Code</td><td colspan="4"></td></tr>
<tr><td>Dept./ Specialization</td><td colspan="2">Computer Science and Engineering</td><td>Structure (LTPC)</td><td>3</td><td>0</td><td>2</td><td>4</td></tr>
<tr><td>To be offered for</td><td colspan="2">Dual Degree, PG and PhD</td><td>Status</td><td colspan="2">Core</td><td colspan="2">Elective</td></tr>
<tr><td>Faculty Proposing the course</td><td colspan="2">Dr. J. Umarani and
Dr. B. Sivaselvan</td><td>Type</td><td colspan="2">New</td><td colspan="2">Modification</td></tr>
<tr><td colspan="3">Recommendation from the DAC</td><td>Date of DAC</td><td colspan="4"></td></tr>
<tr><td>External Expert(s)</td><td colspan="7"></td></tr>
<tr><td>Pre-requisite</td><td colspan="2">NIL</td><td colspan="3">Submitted for approval</td><td colspan="2"></td></tr>
<tr><td>Learning Objectives</td><td colspan="7">• The course focuses on fundamental principles relating to the design, implementation and evaluation of interactive applications. User centric design approaches that contribute to the development of usable interface and interaction are focused.</td></tr>
<tr><td>Learning Outcomes</td><td colspan="7">• Students gain a sound understanding of the interdisciplinary nature of HCIand are equipped with skill sets required for the creation of used,useful and usable applications.</td></tr>
<tr><td>Contents of the course (With approximate break-up of hours for L/T/P)</td><td colspan="7">Introduction - user interface design - Concept of usability - Usability Principles - HCI and software engineering - GUI design and aesthetics -Psychological theoriesof human behavior – Design rules for enhanced usability [8]

HCI Framework , Introduction to different types of models -KLM, GOMS - Fitts' law and Hick Hyman's law - Shneiderman's eight golden rules - Norman's seven principles - Gestalt Laws of Design - Norman's model of interaction- Nielsen's ten heuristics with example of its use – User Data Gathering Techniques [9]

Usability Engineering – Life cycle model – Needs analysis - Systems analysis- User profiling - Rapid prototyping and interactive design - Formative evaluation techniques, including usability testing - Using standards and guideline [9]

Interaction Design Paradigms - CLI, WIMP -Form Fillins - Menus - DMI –Navigation Design - Dialog notations and design [8]

Evaluation Techniques – Universal Design – User Support Systems - Web Usability Guidelines, Recent trends in VR and AR Design guidelines [8]

Practice Component: Assignments covering various aspects of the course to test drive cognitive principles, various design laws such as 80- 20, digit span etc. would be test driven. [6 sessions]
Exercises would also involve form designs, interaction design paradigms, navigation design, usability and universal design guidelines & OO pseudocode for front end design. [8 sessions]
Course would encourage use of tools such as Figma, Protopie, Adobe XD etc. to design and develop various concepts of the course in addition to a course project</td></tr>
<tr><td>Text Book</td><td colspan="7">1. Alan Dix, J Finlay, G D Abowd, R Beale Human Computer Interaction,Prentice Hall, 2003</td></tr>
<tr><td>Reference Books</td><td colspan="7">1. Jakob Nielsen, Usability Engineering, Morgan Kauffman, 1993
2. Helander, Landauer, Prabhu, Handbook of Human Computer Interaction, 2 nd Edition, Elsevier, 1997.
3. Articles from Nielsen Norman Group relating to Usability and User Experience</td></tr>
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