

## MCA503 HUMAN COMPUTER INTERACTION

L	T	P	Cr
3	0	2	4.0

**Course Objective:** To understand the interaction between human and computer components and design interactive user interface.

**Introduction to graphical user interface:** Importance of user Interface – definition, importance of good design, benefits of good design, a brief history of Screen design, Popularity of graphics, the concept of direct manipulation, graphical system, Characteristics, Web user – Interface popularity, characteristics- Principles of user interface.

**Design process:** Interaction design basics, Human interaction with computers, design rules, implementation support, Evaluation techniques, Importance of human characteristics, Human consideration, Human interaction speeds, and understanding business junctions.

**Models and Theories:** Cognitive Models- Goal and task hierarchies, Linguistic Models, Task analysis- task decomposition, knowledge based analysis, Entity-relationship-based techniques, Uses of task analysis.

**Screen Designing:** Design goals, Screen planning and purpose, organizing screen elements, ordering of screen data and content , screen navigation and flow , Visually pleasing composition , amount of information, focus and emphasis , presenting information simply and meaningfully , information retrieval on web , statistical graphics , Technological consideration in interface design.

**Menus, Navigation and Windows:** Structure of menus, Functions of menus, Navigating menus, Types of graphical menus, Navigation schemes for selection of window, window characteristics, components of a window, window presentation styles, types of windows, window management, organizing window functions, window operations.

**Components and Interaction Devices:** Text and messages, Icons and increases – Multimedia, colors, uses problems, choosing colors. Keyboard and function keys, pointing devices, speech recognition digitization and generation, image and video displays, drivers.

**User-Centered Design and Testing:** Functionality and usability requirements, Techniques for gathering requirements, Techniques and tools for the analysis and presentation of requirements, Prototyping techniques and tools, Evaluation without users, using both qualitative and quantitative techniques.

**Laboratory Work:** Main focus is on designing and implementing visually appealing graphical user interface. To implement all the related programs on relevant tools and technologies.

### Recommended Books:

1. Wilbert O. Galitz, The Essential Guide to User Interface Design: An Introduction to

GUI Design Principles and Techniques, John Wiley & Sons (2007).

2. Shneidermann B., Designing the user interface, Pearson Education Asia (2004), 3<sup>rd</sup> ed.

3. Dix A., Finck J., Gorry G., Abowd, Beaulieu R., Human Computer Interaction, Pearson Education (2004), 3<sup>rd</sup> ed.

4. Lauesen S., User Interface Design: A Software Engineering Perspective, Pearson Education (2004).