Subject Code : RCCN3K12

CORE COURSE XII - COMPUTER GRAPHICS AND HCI

Unit - I

Graphics Devices – Line And Circle Drawing Algorithms Overview of Graphics Systems- Display Devices – Hard copy Devices- Interactive Input devices – Display processors, graphics Software – Line drawing – various algorithms and comparisons – Circle drawing algorithms.

Unit - II

Filling Transformations and Segments
Attributes – area filling algorithms – Scan conversion algorithms – Transformations – Two dimensional – Basic Composite and Other transformations – Matrix representations-
Windowing and Clipping – View port Transformation – Segments – Introduction to 3D Graphics.

Unit - III

Human Computer Interaction
On the effective Use and Reuse of HCI Knowledge – Introduction – Theories and Cognitive models - Claims, Products and Artifacts – Generalizing Claims and reusing HCI

Unit – IV

Distributed Cognition
Introduction – A distributed cognition approach: Socially Distributed Cognition – Embodied Cognition – Culture and Cognition – Ethnography of distributed Cognitive Systems.
An integrated framework for research: Ship Navigation – Airline Cockpit Automation – Beyond direct manipulation – History enriched digital objects- PAD++ zoomable multiscale interfaces

Unit V

Usability engineering methods and Concepts
Strategic Use of Complex Computer Systems: Introduction - Strategies in the Intermediate Layers of Knowledge – Evidence for the effects of aggregation strategies on performance – Possible explanations for inefficient computer usage – General Computer Strategies beyond Aggregation

Text Books:

1. Donald Hearn M. Pauline Baker " Computer Graphics" 1992 , PHI (Units I and II)
2. Human Computer Interaction in the New Millennium, John M. Carroll, Pearson Education, 2002