COURSE TITLE   : INFORMATICS PRACTICES
COURSE CODE   :
COURSE CATEGORY: C
PERIODS/WEEK   : 4 (2 Leture + 2 Lab)
PERIODS/SEMESTER: 72
CREDITS   : 3

RATIONALE:

Information technology has made its impact on all walks of life. Engineers of all disciplines depend on computers for various applications. Information revolution has percolated deep into the society. The School education in the state recognises IT as a major tool for instructional delivery and students are trained in the basic informatics. In higher education sector, immense possiblities exist in the use of information technology by way of open educational resources.

This course is designed to expose the students to the potential of IT as a tool for education, Social informatics and other major issues in Information technology. In continuation of the school education in the state, use of Free and Open Source Sofware is suggested for the course.

Note:

The course is designed to have practical evaluation only. The theory part included in the syllabus is exxpected to provide the foundation for the acquiring basic awareness on informatics. 50% weightage for internal assessment shall be given for knowledge on the theory content.

IT should be used as the tool for instructional delivery.

TIME SCHEDULE

Module	Topic	Periods
1	Overview of Information technology	12
2	Informatics in Higher Education	10
3	Social informatics	14
4	Laboratory Practices	36
	TOTAL	**72**

<div align="center"><u>OBJECTIVES</u></div>

On the completion of the course, the student should be able to,

MODULE – I   Overview of Information Technology
1.1.0   Understand the features of modern Personal Computer & Internet.
1.1.1   Understand hardware componets, peripherals.
1.1.2   Understand computer networks, network components, wired and wireless ethernet network.
1.1.3   Understand Internet, Origin of Internet, www, Clients and Servers.
1.1.4   Understanding the world wide web. How web works.
1.1.5   Web browsers , HTML tags,URLs,Anatomy of URLS. The web verus the internet.
1.1.6   Internet Access methods, Through wire- Broadband Connections,DSL, Dial up services, ISDN, Wireless services- Wireless WAN,Wireless LAN,Satellitte.
1.1.7   Future of Internet.
1.1.8   Wireless Technologies – Growth, Microwave, Cellular technologies.
1.1.9   Mobile Phone technology, cell phone internet connectivity.
1.2.0   Understand operating systems.
1.2.1   Funtions of operating systems.
1.2.2   Operating system categories, Examples, Operating systems for PC and Servers & Mainframes
1.2.3   Free /Open operating systems, GNU/LINUX – popular distributions Ubuntu,Debian, Redhat,BOSS.
1.2.4   Propritory operating systems, Microsoft windows, Mac OS, IBM OS/2.
1.3.0   Understand various application software.
1.3.1   Major Application sofftware, Word processing, Spreadsheet, presentation, Database, Personal Finance, Speech recognition, Digital image editing, Digital Audio editing & Video editing software.
1.3.2   Software for Engineering / Scientific applications, Science : Typesetting with $\mathrm{L^AT_EX}$, Electronics: Scilab,Octave, Matlab,GEDA tools, Cad/Cam: Varicad, Qcad, Autocad, Office package : OpenOffice, Microsoft Office.

MODULE – II   Informatics in Higher Education
2.1.0   Familiarise Academic Search Techniques
2.1.1   Favorites & bookmarks.
2.1.2   Search Engines.
2.1.3   Subject Dictionaries.
2.1.4   Wikis.
2.1.5   Social Networking.
2.1.6   Sakshat.
2.1.7   Open Coures Ware, NPTEL, MIT.
2.1.8   Open Access Publishing Models.
2.1.9   IT in Education, eLearning, Virtual Class rooms.

MODULE – III   Social Informatics
3.1.0   Familiarise the issues related to IT & Society.
3.1.1   Issues of Digital Divide.
3.1.2   Free software movement – Definition of Free Software – Philosphy of Free software,About four freedoms, Advantages of Free and Open Source Software (FOSS), About GNU project.
2.1.10   IPR, Copy rights and patents. Discussion about the concept of Copyright,Copyleft,Patents – merits and demerits.

2.1.11 Creative Commons licesens, Attributions, Non Commercial,No Derivative Works, ShareAlike and their combinations.
2.1.12 Software licenses, Propritary licenses, Free/Open software licenses – Copyleft licenses, GPL and other forms of free software licenses.
2.1.13 Digital rights Management
3.1.3 New threats to IT industry – Sapm, Cookies, Adware, Spyware, Malware, Phishing, Hackers, Trojan, Viruses.
3.1.4 Cyber Security – Firewalls, Antivirus software, examples, installation.
3.1.5 Cyber Laws in India
3.1.6 Health issues - Guidelines for proper usage of Computers.
3.1.7 E-waste and Green Computing.
3.1.8 Understand the Impact of IT on Language and culture: Localisation Issues, Unicode , IT and regional Languages

LABORATORY EXERCISES

Suggested Operating System   : GNU/Linux (Ubuntu / Debian / Fedora)
Office package   : OpenOffice.
Browser   : Firefox, Iceweasel.

I.Familiarisation with Opearating System
- Booting and Desktop
  - Initial Boot and Login Screen
  - Exploring the features of Desktop
- File Manager
  - File Manager Basics
  - Right Click Menu and Drag and Drop
  - Drives
  - Users and permissions
  - Case Sensitivity
  - Home Directory
  - File system Hierarchy
- Customisation
  - Changing Background
  - Changing Themes, Adding New Elements
  - Creating own themes
  - Customisation of Panels and Applets
  - Changing Font Perferences
- Menu Detail
  - Familiarisation with Different menus
  - Multimedia Applications
    - Audio , Video , Image Application softwares
  - Familiarisation with Office packags
    - Open Office Write, Calc, Impress, Base
    - Evolution, Gimp, Open Office Draw
- Introduction to the Terminal
  - Basic Commands – cd,ls,mkdir,pwd,rmdir,cp,mv,chown,chmod,cat etc
  - Familiarisation with text editors
- Adding New Software
  - Synaptic Package Manager

- - Software Sources
  - Adding and Removing Softwares
- Configuration Tools : Configuration of
  - Mouse
  - Keyboard
  - Date and Time
  - Printer etc

II.Making Presentations
- Creating and running slide show
- Animation effects

III. Internet
- Connecting to internet
- Featutres of Browsers
  - Different browsers
  - Features of Browsers
  - Browsing various sites - online web tutorials, open course ware contents, Acadmic Websites
  - Bookmarks
  - RSS
- Searching
  - Different Search Engines
  - searching the web
    - Using Directory
    - Using a search Engine
      - Simple search
      - Using boolean operators
      - Advanced search
- Customizing Web Browsers
  - Preference/options – main, content, security, privacy,Advnced
- Multimedia on web
  - Plugins, Media Player, Streaming media
  - Familiarisation with Podocasts,Youtube,Live CAMs etc
- Wikipedia
  - Using Wikipedia
  - creating Wiki
- Email
  - Creating Email address
  - Using Email – Sending,reading,deleting,replying, forwarding, reading and sending attachment
  - Using Evolution
- Social Networking Sites – orkut, Twitter,facebook
- News Groups / Disscussion Groups
- Using Blog/Vlog
- Creating Webpages/Websites/Blogs
  - Creating Simple Web Pages
  - Creating Website/Blog – using wordpress