Kadi Sarva Vishwavidyalaya

(With Effect From: Academic Year 2017-18)

Subject Code: UE102	Subject Title: : INTRODUCTION TO INFORMATION & COMMUNICATION TECHNOLOGY

Teaching scheme				Total Credit	Evaluation Scheme					
L	T	P	Total		Theory		Mid Sem Exam	CIA	Pract.	Total
Hrs	Hrs	Hrs	Hrs		Hrs	Marks	Marks	Marks	Marks	Marks
02	00	00	02	02	03	70	30	20	00	120

Course Objective:

The course aims to make the students familiar with basic tools and techniques associated with Information and Communication Technology (ICT) and make them digitally literate. The course intends to make the student understand fundamentals concepts associated with ICT and apply them empirically.

Subject Contents			
Sr. No	Topic	Total Hours	Weight (%)
1	**Building Blocks of Computing Devices:** Introduction, Computer Hardware, Software, Central Processing Unit (CPU), main/internal memory (including ROM and RAM), input/output devices, and secondary/backup storage. Operating systems. **Computing devices**: Desktops, PDAs, Tablets, Laptops, smart phones and other gadgets. **Software Packages:** Database applications, Office suits, Graphics Tools	4	13
2	**Networking**: Types, Topologies, Protocols, WiFi/Bluetooth, IP, ISP, Network devices (routers, hubs, bridges, switches, proxy servers etc).	3	9
3	**Internet**: WWW, Email, Social Networking, Ethics and etiquettes of Internet usage	3	9
4	**Data analysis**: Create, and present data using a spreadsheet, Data management operations, Generating graphs. **General terminology**: Copyright, Plagiarism, Virus, Hacking, Trademark.	3	9
5	**ICT in different sectors:** Education, Agriculture, Business, Aviation, Infrastructure, Smart Cities, Governance, e-Learning, Blogs, Social networking (virtual communities), Wikis, online shopping/e-Commerce. **Darker side of ICT:** Data security issues, virus, malfunctioning, hacking, identity theft.	3	9
6	**Introduction for different electronics components**: Resistors, Capacitor, Inductor, diodes and transistors.	2	7
7	**Electromagnetic spectrum and Signals**: Telephone band, radio and television band, light band. Introduction analog and digital data and signals, comparing analog and digital signals.	3	9
8	**Transmission media: Wire media** : Twisted pair cable, coaxial cables, fiber optical cables, **Wireless Media:** broadcast radio, microwave, light waves	3	9
9	**Basic Communication system**: Information source and input transducer, Transmitter, channel or medium, Noise, Receiver, information and bandwidth, overview of analog and digital modulation	4	13
10	**Overview of telecommunication technologies:** Introduction basic Telephone system structure. Overview of mobile station, base station. GSM, CDMA, GPRS, Bluetooth, Wi-Fi.	4	13
	TOTAL	32	100

Course Outcome:

At the end of this course, the student would be able to

- Understand and identify basic tools and techniques associated with ICT
- Develop digital literacy skills
- Access various tools and applications related to ICT
- Operate a variety of hardware and software independently

List of References:

1. Rajaraman, V., Fundamental of Computer, PHI Learning Pvt Ltd
2. Nagpal, D. P. Computer Fundamentals, Wheeler Publisher
3. Goel, Anita , Computer Fundamentals, Pearson Education
4. T. S. Rappaport, "Wireless Communication: Principle and Practices", 2nd Edition, Pearson
5. Behrouz A. Forouzan, Data Communication and Networking, 4th Edition
6. G. Kennedy, B. Davis, "Electronics Communication System", 4th Edition, Tata Mcgraw-Hill Edition
7. G. Kennedy, B. Davis, "Electronics Communication System", 4th Edition, Tata Mcgraw-Hill Edition.
8. T. S. Rappaport, "Wireless Communication: Principle and Practices", 2nd Edition, Pearson
9. Raj pandya "Mobile and Personal Communication Systems and Services", PHI
10. K S PATIL " Electronics Material and Components" BPB publication

E-Resource / Web link :

1. http://nptel.ac.in/courses/126104006/5#
2. http://www.itdesk.info/handbook_basic_ict_concepts.pdf
3. http://www.ou.ac.lk/home/images/OER/Computer_Science/ICT%20Skills%20Full%20Book.pdf
4. http://www.igcseict.info/theory/index.html
5. https://www.f-secure.com/documents/996508/1030743/threat_summaries_2006_2002.pdf

List of Assignments:

Note: The assignments provided beneath are for reference only. The course teacher may change/formulate it as per his/her methodology and requirement.

1. Fundamentals components in a typical computer system.
2. Operating system (E.g. Windows, Linux etc)
3. Institute's computing networking structure.
4. Institute's CCTV networking structure. Also learn to manage the console.
5. Using spreadsheet suits learn to collect and analyze different data. Also represent the same in various charts/graphs/figures.
6. Search various (a) e-Learning (b) e-Commerce (shopping) or (c) matrimonial sites available and prepare a comparison chart for common features.
7. Prepare a short report on guidelines for novice Internet users mentioning Dos and Don'ts.
8. Learn and indentify the fundamental electronics component(Resistors, Capacitor, Inductor, diodes and transistors)
9. Learn and understand various communication cables (twisted pairs, coaxial cable, fiber optical cable, wireless channel).
10. Learn and understand various analog and digital signals
11. Learn and understand various blocks of Analog communication system (Analog Radio Tx/Rx)
12. Learn and understand various blocks of digital communication system (Digital Radio Tx/Rx)
13. Identify various blocks of a telephone system.
14. Identify various blocks of a mobile communicating system.
15. Draw electromagnetic spectrum and identify various bands and its applications.