<u>**Generic Electives**</u>

Computer Science -CSG101 : Computer Fundamentals and Emerging Technologies

Effective from : 2017-18

(Credits: Theory-03, Practical-01)   Theory : 45 Lectures

Practical : 30 Lectures

Course Objectives: To provide an understanding of Fundamental Technology Concepts and Emerging Technologies in Computer Field. Includes practical skills in data capture, text editing with report formatting, effective presentation tools, efficient search techniques and online collaboration tools.

Unit I   Lectures:15, Practical Lab:1 Sessions   Marks(Theory-30, Practicals-1)
Computer Fundamentals (Theory)
Introduction: Introduction to computer system, uses, types.
Data Representation: Number system and Coding Schemes(ASCII and UNICODE).
Human Computer Interface: Relationship between Hardware and Software, Types of software, Operating system as user interface, utility programs.
Role of Computers in: Business, Manufacturing, Mobile Computing, Public Sector, Media, Defense Services.
Lab 1: Computer Fundamentals (Practical)
   a. *Features of MS Windows based OS and any of the Linux flavor, Setting up users   and User rights in a computer, Adding a printer, Software Installation*
   b. *Troubleshooting basic computer connections.*

Unit II Lectures: 15, Practical Lab: 10 Sessions   Marks (Theory-10, Practicals-18)
Content/Data Management Tools (Theory)
User Generated Content: Blogs and Wikis.
Online Data Capture Tools: Types of data capture form templates (Personal, Work and Education). Question Formats for data capture (short answer, paragraph, multiple choice, check- box, drop-down, linear-scale, multiple choice grid). Data form design (Add new question, add section, add title/description/image/video). Data form distribution techniques (Send via email, publish on social media, send as link). Response management (Print responses, Export to spreadsheet, View analysis, Include analysis in word processing reports)
Text Formatting using Word Processing tools: Use of Templates, Working with document: Editing text, Find and replace text, Formatting, spell check, Autocorrect, Autotext; Bullets and numbering, Tabs, Paragraph Formatting, Indent, Page Formatting, Header and footer, section break, footnotes, bibliography and references. Tables: Inserting, filling and formatting a table; Inserting Pictures and Video; Managing Mail Merge: including linking with Database; Printing documents Creating Business Documents using the above facilities.

Data Presentation using Presentation tools: Slides, Fonts, Drawing, Editing; Inserting: Tables, Images, texts, Symbols, Media; Design; Transition; Animation; and Slide-show. Creating Business Presentations using above facilities

Lab 2.1 : Creating Content for the Web (Practicals)
    a. *Create a blog using popular blogging tools like WordPress/ BlogSpot.*
    b. *Edit Wikipedia articles.*

Lab 2.2 : Data Capture using Google Forms (Practicals)
    a. *Create data forms to capture data for Event Registration, Event Feedback, Customer feedback/satisfaction on a product or service and Order Request.*

Lab 2.3 : Report Formating using Word Processing (Practicals)
    a. *Draft an official letter for job interview invitation/ job appointment/ invitation to an event, use mail merge to input the recipients list linking with database.*

    b. *Given a project report in PDF format transfer to word processor software and format to include title page, specified Paragraph and Page Formating (page size, orientation, line spacing, font type and font size, Indent, bullets, paragraph formatting) details, Acknowledgement page, Table of contents page, List of figures page, List of Tables page, bibliography, references, distinct headers for each chapter, page numbering in roman for initial pages and normal from first chapter. The document should be checked for spelling errors and corrected appropriately.*

    c. *Design a certificate in landscape orientation with a border around the document.*

    d. *Design a Garage Sale sign.*

Lab 2.4 : Content Presentation using Presentation Software (Practicals)
    a. *Preparing presentation in areas such as Impact of Social Media on Youth, Emerging trends in Mobile Technology include appropriate slide animation, slide transitions, sound recording, slide timings, customer feedback video.*

    b. *Export the presentation as video or save as slide show.*

    c. *Prepare handouts for audience.*

Unit III Lectures: 5, Practical Lab: 3 Sessions   Marks(Theory -20, Practical -5)
Overview of Emerging Technologies
Cloud Computing: Meaning, Features, & Service models – Infrastructure as a service, Advantages and disadvantages, Mobile Computing: Meaning, Business Applications of Mobile computing, Virtual reality & Augmented Reality : Meaning and applications , IOT - Internet of Things: Meaning & Application

Lab 3: Web Applications (Practicals)
    a. *Scheduling tasks in Google Calendar*
    b. *Create/Upload documents / spreadsheets and presentations online.*
    c. *Share and Collaborate in real time*
    d. *Safely store and organize your work of Google Drive or OneDrive*

Unit IV Lectures: 10, Practical Lab: 1 Sessions   Marks (Theory-15, Practical -1)
Computing Trends in Internet, Education and Research:
Internet-role and importance, Web Server and Web clients like web browser or web app, IP addressing : Public Vs Private, Static Vs Dynamic, world wide web and related protocols, e-Library, Google Scholar.

Lab 4: Internet Applications (Practicals)

a. *Surfing the Internet, Using Email and Search Engines*
b. *Advanced web search and translation services, Web search, image search, Search only for pages that contain (ALL the search terms contain the exact phrase you type, contain at least one of the words you type, do NOT contain any of the words you type, written in a certain language, created in a certain file format like ppt, pdf, rtf, doc, xls)*
c. *Advanced search operators: Include search ("+" search), synonym search, OR search, Domain search, Numrange search, other advanced search features (Google, Local language, Technology Search, Date, Occurrences, Domains, Safe search),*

Reference Books:

1. Introduction to Information Technology by ITL Education Solutions Limited, second edition.
2. ' O' Level made simple "introduction to ICT resources" by Satish Jain, Shashank Jain, Shashi Singh & M. Geetha Iyer, BPB publication.
3. Computer Fundamentals fourth edition by Pradeep K. Sinha and Priti Sinha BPB publications
4. Information Technology The breaking wave by Dennis Curtin Tata McGraw-hill edition
5. Computer Fundamentals by A. Goel, Pearson Education, 2010.
6. Introduction to Information Technology by P. Aksoy and L. DeNardis, Cengage Learning, 2006

Computer Science -CSG102 : Cyber Space and Cyber Security
Effective from : 2017-18

(Credits: Theory-03, Practical-01)   Theory : 45 Lectures

Practical : 30 Lectures

Course Objectives: To introduce computer networking, e-commerce and understand principles of cyber security, online threats and cyber laws and prepare students to adopt safe practices.

Unit I   Lectures: 6, Practical Lab: 2 Sessions   Marks (Theory -15, Practicals -2)
Basics of Computer Networking
Networking basics, Need for computer networks, Types of networks-LAN, MAN, WAN, Network Components – H/W, Software, Communication channels, Network Devices, Network topologies.
Lab1
- *Basic Networking Setup of PC, Network commands like ipconfig, ping, traceroute, nslookup / dig etc, Setup of Home Router / Wifi Hotspot,*
- *Understanding of Firewall and Basic Firewall Setup, File and Printer Sharing, connecting to share*
- *Setup of Email Clients like Outlook, FTP Clients and Upload / Download.*
- *Finding out public address, connection speeds etc.*

Unit II Lectures: 10, Practical Lab: 04 Sessions   Marks (Theory-15, Practicals-16)
E-Commerce
Definition, Hardware requirements, E-commerce and Trade Cycle, Electronic Markets, Electronic Data Interchange and Internet Commerce, Benefits and Risk, Types of E-commerce :Business to Business E-Commerce, Business to Consumer E-Commerce. Consumer to Consumer, Electronic Payment Systems: Smart Cards – Credit Cards – Wallets, Risks, E-Retail, Concept and Examples, E-Banking, Features and services , M-Commerce, Products and services
Lab 2
E-commerce
- *Attempt to purchase a product online from any E-Commerce Site. Proceed till payment gateway. Check digital certificates (such as ebay.in and amazon.com)*
- *Write a review of an E-Commerce Site visited include: Site description, Site Design, ease in navigation , process for purchasing items, security, privacy, compare with competitors, customer service, best features of site etc.*
- *An E-commerce site case study: Include Target market/audience: who uses this service?*

  Revenue model: where does the money come from? Competitive environment: who else is competing in this market, or who might enter the market and threaten this company's position? Competitive advantage analysis: how is your case company attempting to gain an advantage: competing on cost? Differentiation? How are they promoting their products in the marketplace? ,How have they been doing - financial results if available?

Unit III Lectures: 15, Practical Lab: 02 Sessions   Marks (Theory-25, Practicals-2)
Emerging threats in Cyber Space
Introduction to cyber space, Malware threats- Definition and types(Virus/ worms, Trojan, Rootkits, Spyware, Keyloggers). Social Engineering, Cyber Crimes – Definition, Types (DOS, Intellectual

Property crimes, Unauthorized access to computer system or networks, Theft of information contained in electronic form, Cyber Stalking, Identity Theft, Forgery, E-mail Spoofing, E-mail bombing, Online gambling, Sale of illegal articles, Child pornography, Cyber Defamation, Salami attack, Phishing, Pharming, Data Diddling, Virus/ worm attack, logic bombs, Web jacking, Theft of computer system, physically damaging a computer system, Cyber warfare, Cyber terrorism.)

Lab 3

- *Installation and Configuration of any free Antivirus Package eg. AVG/Avast etc., Using Antivirus Package for Threat Detection*
- *Browser security and Safety such as Understanding SSL and Certificates, checking URL of site for Phishing attempts*
- *Email Headers and Tracking, Identification of Phishing Emails*

Unit IV   Lectures: 7, Practical Lab 03 Sessions   Marks (Theory-10, Practicals-2)
Online Privacy and Cyber Safety
Online Privacy – Introduction, Significance, Privacy Policy, Sensitive Personal Information, Social media – Usage, Safety. Online shopping – Introduction, Safety measures (Encryption of data authentication , SSL, Digital signatures, Digital Certificates) Online payments – Introduction, Types, Safe practices.

Lab 4

- *Keeping passwords cyber secure-Choosing strong password,*
- *Privacy settings on Facebook, Social Media Safety*
- *Payment Systems Security concerns and Safe Practices*
- *Online Banking Security features, OpenPGP Tools.*

Unit V   Lectures: 7, Practical Lab 04 Sessions   Marks (Theory-10, Practicals-3)
Cyber Laws and Cyber Forensics
Cyber Laws: Evolution and Need for cyber law, The legal perspectives – Indian perspective, Global perspective, Information Technology Act(ITA) 2000, Provisions related to E-commerce, Provisions for cyber-crimes, Information Technology (Amendment)(ITAA) Act 2008, Adjudicating officer, CERT-IN- its role and powers.

Reporting Cyber Crimes, Cyber Forensics: Introduction, Evidence collection, Data Recovery, Cloning of Devices, Forensic Investigation phases – Acquisition and preservation, Authentication, Analysis, Documenting Evidence, Presentation of Evidence, Media sanitization.

Lab 5

- *Use of Investigation tools such as Winhex for forensic investigation*
- *Data Recovery using winhex*
- *Use of Free data recovery tools like Recuva*
- *Mapping a given list of cyber-crimes to appropriate ITAA Act 2008 offence listed in http://www.naavi.org/ita_2008/index*

Reference Books and web references

1. Rick Lehtinen and G. T. Gangemi, Computer Security Basics, O'Reillly Media, Inc.; 2nd Edition, 2006
2. Wall, David, (2007). Cyber Crime: The Transformation of Crime in the Information Age. Polity Publishing

3. Michael cross, Scene of the Cyber Crime, Syngress Publishing, Elsevier Publishing, 2nd Edition, ISBN 13: 978-1-59749-276-8
4. Chander, Harish, Cyber Laws and IT Protection, ISBN: 978-81-203-4570-6
5. Nina Godbole, SunitBelapure, "Cyber Security – Understanding Cyber Crimes, Computer Forensics and Legal Perspectives", Wiely India Pvt.Ltd.,ISBN - 978-81-265-2179-1
6. Frontiers of Electronic Commerce Ravi Kalakota & Andrew B Whinston, Pearson Education.
7. Cyber Laws, http://deity.gov.in/content/cyber-laws
8. www.cert.org
9. Frontiers of Electronic Commerce Ravi Kalakota& Andrew B Whinston, Pearson Education.

Computer Science -CSG103 : <u>IT Fundamentals</u>

Effective from : 2017-18

(Credits: Theory-03, Practical-01) Theory : 45 Lectures

Practical : 30 Lectures

Introduction: Introduction to logical organization of computer**,** input and output devices (with connections and practical demo), keyboard, mouse, joystick, scanner, OCR, OMR, monitor, printer, plotter, primary memory, secondary memory, auxiliary memory.   **15L**

User Interface: Operating system as user interface, system tools, utility programs   **5L**

Database: Introduction to database, relational data model, Entity types, entity set, attribute and key   **5L**

Networks: Definition of network, classification of network, LAN, MAN, WAN, distinction among the networks, Guided Media: Twisted pair, Coaxial cable, and Optical fiber. Unguided media: Microwave, Radio frequency propagation, Satellite, LAN Topologies: Ring, bus, star, mesh and tree topologies.   **10L**

IInternet Applications: Internet as a global network, Search Engine, Online education, Internet utilities – email, online banking, reservations etc.   **6L**

Use of Computers in Education and Research: Data analysis, Heterogeneous storage, e-Library, Google Scholar, Domain specific packages such as SPSS, Mathematica etc.   (4L)

Reference Books:

1. *A. Goel*, Computer Fundamentals, Pearson Education, 2010.
2. *P. Aksoy, L. DeNardis*, Introduction to Information Technology, Cengage Learning, 2006
3. *P. K.Sinha, P. Sinha,* Fundamentals of Computers, BPB Publishers, 2007

Practical: 30 lectures

Practical exercises based on Open Office/ MS Office tools using document preparation, spreadsheet handling packages and presentation software.

Word processor

1.   Prepare **a grocery list** having four columns (Serial number, The name of the product, quantity and price) for the month of April, 06.
    - Font specifications for Title (Grocery List): 14-point Arial font in bold and italics.
    - The headings of the columns should be in 12-point and bold.
    - The rest of the document should be in 10-point Times New Roman.
    - Leave a gap of 12-points after the title.
2.   Create a **telephone directory**.
    - The heading should be 16-point Arial Font in bold • The rest of the document should use 10-point font size
    - Other headings should use 10-point Courier New Font.
    - The footer should show the page number as well as the date last updated.
3.   Design a **time-tableform** for your college.
    - The first line should mention the name of the college in 16-point Arial Font and should be bold.
    - The second line should give the course name/teacher's name and the department in 14-point Arial.
    - Leave a gap of 12-points.
    - The rest of the document should use 10-point Times New Roman font.
    - The footer should contain your specifications as the designer and date of creation. 4.   BPB Publications plans to release a new book designed as per your syllabus. Design the **first page of the book** as per the given specifications.
    - The title of the book should appear in bold using 20-point Arial font.
    - The name of the author and his qualifications should be in the center of the page in 16-point Arial font.
    - At the bottom of the document should be the name of the publisher and address in 16-point Times New Roman.
    - The details of the offices of the publisher (only location) should appear in the footer.
5.   Create the following one page documents.
    (a)   Compose a note inviting friends to a get-together at your house, Including a list of things to bring with them.
    (b)   Design a certificate in landscape orientation with a border around the document.

6.   Create the following documents:
        (a). A newsletter with a headline and 2 columns in portrait orientation, including at least one image surrounded by text.

        (b). Use a newsletter format to promote upcoming projects or events in your classroom or college.

7.   Convert following text to a table, using comma as delimiter

Type the following as shown (do not bold). **Color, Style, Item**

Blue, A980, Van
Red, X023, Car
Green, YL724, Truck
Name, Age, Sex
Bob, 23, M
Linda, 46, FTom, 29,
M

8.   Enter the following data into a table given on the next page.

Salesperson	Region	Dolls	Trucks	Puzzles
Kulbhushan		1327	1423	1193
Vidya		1421	3863	2934
Parmaod		5214	3247	5467
Gurmeet		2190	1278	1928
Afsar		1201	2528	1203
Atwater, Kelly		4098	3079	2067

Add a column Region (values: S, N, N,S,S,S) between the Salesperson and Dolls columns to the given table
Sort your table data by Region and within Region by Salesperson in ascending order:

9.   In this exercise, you will add a new row to your table, place the word "Total" at the bottom of the Salesperson column, and sum the Dolls, Trucks, and Puzzles columns.

10.   Wrapping of text around the image.

11.   Following features of menu option must be covered

FILE Complete menu

EDIT   Complete menu

VIEW   Complete menu

INSERT   Complete menu

FORMAT   Complete menu

TABLE Complete menu WINDOW Complete menu HELP Complete menu

         TOOLS All options except Online collaboration, Tools on Macro, Templates Spreadsheet

1.   Enter the Following data in Excel Sheet

REGIONAL SALES PROJECTION

State	Qtr1	Qtr2	Qtr3	QTR4	Total	Rate	Amount
Delhi	2020	2400	2100	3000		15	
Punjab	1100	1300	1500	1400		20	
U.P.	3000	3200	2600	2800		17	
Harayana	1800	2000	2200	2700		15	
Rajasthan	2100	2000	1800	2200		20	
TOTAL							
AVERAGE							

(a) Apply Formatting as follow: Title in

TIMES NEW ROMAN

Font Size - 14

Remaining text - ARIAL, Font Size -10

State names and Qtr. Heading Bold, Italic with Gray Fill Color.

Numbers in two decimal places.

Qtr. Heading in center Alignment.

Apply Border to whole data.

(b) Calculate State and Qtr. Total (c)
Calculate Average for each quarter
(d) Calculate Amount = Rate * Total.

2. Given the following worksheet

	A	B	C	D
1	Roll No.	Name	Marks	Grade
2	1001	Sachin	99	
3	1002	Sehwag	65	
4	1003	Rahul	41	
5	1004	Sourav	89	
6	1005	Har Bhajan	56	

Calculate the grade of these students on the basis of following guidelines:

If Marks	Then Grade
>= 80	A+
>= 60 < 80	A
>= 50 < 60	B
< 50	F

3. Given the following worksheet

	A	B	C	D	E	F	G
1	Salesman		Sales in (Rs.)				
2	No.	Qtr1	Qtr2	Qtr3	Qtr4	Total	Commission
3	S001	5000	8500	12000	9000		
4	S002	7000	4000	7500	11000		

5	S003	4000	9000	6500	8200
6	S004	5500	6900	4500	10500
7	S005	7400	8500	9200	8300
8	S006	5300	7600	9800	6100

Calculate the commission earned by the salesmen on the basis of following Candidates:

If Total Sales	Commission
< 20000	0% of sales
> 20000 and < 25000	4% of sales
> 25000 and < 30000	5.5% of sales
> 30000 and < 35000	8% of sales
>= 35000	11% of sales

The total sales is sum of sales of all the four quarters.

4. A company XYZ Ltd. pays a monthly salary to its employees which consists of basic salary, allowances & deductions. The details of allowances and deductions are as follows :

Allowances

- HRA   Dependent on Basic

    30% of Basic if Basic <=1000

    25% of Basic if Basic>1000 & Basic<=3000

    20% of Basic if Basic >3000

- DA   Fixed for all employees, 30% of Basic
- Conveyance Allowance   Rs. 50/- if Basic is <=1000
Rs. 75/- if Basic >1000 & Basic<=2000   Rs. 100 if Basic >2000

- Entertainment Allowance NIL if Basic is <=1000
Rs. 100/- if Basic > 1000   **Deductions**

- Provident Fund 6% of Basic
- Group Insurance Premium   Rs. 40/- if Basic is <=1500
    Rs. 60/- if Basic > 1500 & Basic<=3000   Rs. 80/- if Basic >3000

Calculate the following :

Gross Salary   = Basic + HRA + DA + Conveyance + Entertainment

Total deduction   = Provident Fund + Group Insurance Premium   Net Salary = Gross Salary – Total Deduction

5. Create Payment Table for a fixed Principal amount, variable rate of interests and time in the format below :

No. of Instalments	5%	6%	7%	8%	9%
3	XX	XX	XX	XX	XX
4	XX	XX	XX	XX	XX

5	XX		XX	XX	XX	XX
6	XX		XX	XX	XX	XX

6.   Use an array formula to calculate Simple Interest for given principal amounts given the rate of Interest and time

Rate of Interest   8%

Time   5 Years

Principal   Simple Interest

Principal	Simple Interest			
1000	?	18000		?
5200	?			

7.   The following table gives an year wise sale figure of five salesmen in Rs.

Salesman	2000	2001	2002	2003
S1	10000	12000	20000	50000
S2	15000	18000	50000	60000
S3	20000	22000	70000	70000
S4	30000	30000	100000	80000
S5	40000	45000	125000	90000

(a) Calculate total sale year wise.
(b) Calculate the net sale made by each salesman
(c) Calculate the maximum sale made by the salesman
(d) Calculate the commission for each salesman under the condition.
   (i)   If total sales >4,00,000 give 5% commission on total sale made by the salesman.
   (ii) Otherwise give 2% commission.
(e) Draw a bar graph representing the sale made by each salesman.
(f) Draw a pie graph representing the sale made by salesman in 2000.

8.   Enter the following data in Excel Sheet

PERSONAL BUDGET FOR FIRST QUARTER

Monthly Income (Net) : 1,475

EXPENSES	JAN	FEB	MARCH	QUARTER TOTAL	QUARTER AVERAGE
Rent	600.00	600.00	600.00		
Telephone		48.25	43.50	60.00	
Utilities		67.27	110.00	70.00	
Credit Card		200.00	110.00	70.00	
Oil		100.00	150.00	90.00	
AV to Insurance		150.00			
Cable TV		40.75	40.75	40.75	
Monthly Total					

(a) Calculate Quarter total and Quarter average.
(b) Calculate Monthly total.
(c) Surplus = Monthly income - Monthly total.
(d) What would be total surplus if monthly income is 1500.

(e) How much does telephone expense for March differ from quarter average.

(f) Create a 3D column graph for telephone and utilities.

(g) Create a pie chart for monthly expenses.

9. Enter the following data in Excel Sheet

TOTAL REVENUE EARNED FOR SAM'S BOOKSTALL

Publisher name	1997	1998	1999	2000	total
A	Rs. 1,000.00	Rs. 1100.00	Rs. 1,300.00	Rs. 800.00	
B	Rs. 1,500.00	Rs. 700.00	Rs. 1,000.00	Rs. 2,000.00	
C	Rs. 700.00	Rs. 900.00	Rs. 1,500.00	Rs. 600.00	
D	Rs. 1,200.00	Rs. 500.00	Rs. 200.00	Rs. 1,100.00	
E	Rs. 800.00	Rs. 1,000.00	Rs. 3,000.00	Rs. 560.00	

(a) Compute the total revenue earned.

(b) Plot the line chart to compare the revenue of all publisher for 4 years.

(b) Chart Title should be 'Total Revenue of sam's Bookstall (1997-2000)'

(c) Give appropriate categories and value axis title.

10. Generate 25 random numbers between 0 & 100 and find their sum, average and

count. How many no. are in range 50-60

11.   Create at least 5 presentations on various topics such as College festival, Countryside, College tour etc.

FYBCOM   **Semester 1**

Computer Science -CSG105 : Computer Applications – I

Effective from : 2017-18

(Credits: Theory-03, Practical-01)   Theory : 45 Lectures

Practical : 30 Lectures

Course Objectives : To provide an understanding of essential Information Technology Concepts and Emerging Technologies. Includes practical skills in data capture, analysis and presentation, report formatting, efficient search techniques and online collaboration tools.

Unit I   Information Technology Basics

(Lectures: 15, Practical Lab 2 Marks Th-30, Pr-1)

Information : Prerequisites of Information, Need for Information Technology and its advantages; Information Technology : Definition and components; Data : Definition, Types, Data Representation, Number system and Coding Schemes(ASCII and UNICODE); Parts of a Computer: CPU, Memory, Input/ Output Devices, Auxiliary Memory; Software – Definition, Relationship between Hardware and Software, Categories of Software, OS - definition & functions, Role of Information Technology in : Business, Mobile Computing, Health Services, Public Sector, Media, Defence Services, Education and Publication.
Lab1
OS basic
Installation of Operating System (Demonstration only) , Demonstrate features of any MS Windows based OS or any of the Linux flavor , Identification of Directories , Setting up computer, Add a printer, Check device drivers, Installation software, Users and administrative rights for installation , Unicode, Enable computer to support regional language, add Keyboard, Use onscreen keyboard, install phonetic keyboard, type the national anthem using Unicode, Use online translators and transliteration services

Unit II   Introduction to Data Handling, Processing and Analysis

(Lectures: 10, Practical Lab 06 Marks Th-10, Pr-10)

Word processing concepts: Use of Templates, Working with word document: Editing text, Find

and replace text, Formatting, spell check, Autocorrect, Autotext, Bullets and numbering, Tabs, Paragraph Formatting, Indent, Page Formatting, Header and footer, Tables: Inserting, filling and formatting a table; Inserting Pictures and Video; Mail Merge: including linking with Database; Printing documents Creating Business Documents using the above facilities.

Spreadsheet concepts: Managing worksheets; Formatting, Entering data, Editing, and Printing a worksheet; Handling operators in formula, Project involving multiple spreadsheets, Organizing Charts and graphs, Generally used Spreadsheet functions: Mathematical, Statistical, Financial, Logical, Date and Time, Lookup and reference, Database, and Text functions

Unit II   Presentation Software

(Lectures: 05, Practical Lab 02 Marks Th-05, Pr-06)

Basics of presentations: Slides, Fonts, Drawing, Editing; Inserting: Tables, Images, texts, Symbols, Media; Design; Transition; Animation; and Slideshow. Creating Business Presentations using above facilities

Lab 2.1

Data capture using Google Forms

Create data forms to capture data for Event Registration, Event Feedback, Customer feedback/satisfaction on a product or service and Order Request.

Lab2.2

Report Formating using Word Processing

Draft an official letter for job interview invitation/ job appointment/ invitation to an business trade show event, use mail merge to input the recipients list linking with database.

Given a project report in PDF format transfer to word processor software and format to include title page, specified Paragraph and Page Formating (page size, orientation, line spacing, font type and font size, Indent, bullets, paragraph formatting) details, Acknowledgement page, Table of contents page, List of figures page, List of Tables page, bibliography, references, distinct headers for each chapter, page numbering in roman for initial pages and normal from first chapter. The document should be checked for spelling errors and corrected appropriately.

Create/ Upload a document in a collaboration software like Google docs. Share and collaborate in real time, Safely store and organize your work, Control who can see your documents

Lab2.3

Spreadsheet

Working with worksheets -Entering data, Formatting, Editing, and Printing a worksheet,

*Formulas and Functions, Handling operators in formula, Generally used Spreadsheet functions
- Mathematical, Statistical, Financial, Logical, Date and Time, Lookup and reference,
Database, and Text functions, Inserting Charts and graphs, Data Sorting and Filtering*

*Introduction to some more useful functions such as the IF, nested IF, VLOOKUP and
HLOOKUP, construction of Pivot Tables to organize data, Creating spreadsheet in the area of:
Loan and Lease statement; Ratio Analysis; Payroll statements; Capital Budgeting; Depreciation
Accounting; Graphical representation of data; Frequency distribution and its statistical
parameters; Correlation and Regression*

Lab 2.4
Data Presentation using Presentation Software
*Preparing presentation in areas such as Customer satisfaction/ feedback, product analysis, job
satisfaction using the data obtained through data capture tool, including appropriate slide
animation, sound recording, slide timings, customer feedback video. Export the presentation as
video or save as slide show. Prepare handouts for audience.*

*Working with Multimedia tools: Image manipulation- use any image editing tool such as (GIMP,
Inkspace) to design the cover page of Book; Audio manipulation – use any two Mp3 tracks of your choice
to create a unique two minute composition that is significantly different from either of the original
tracks; video manipulation- make a movie on a given topic with the help of Windows Movie Maker.*

Unit IV   Internet Applications and Emerging Technologies

(Lectures: 15, Practical Lab 5 Marks Th-30, Pr-8).

Internet – role and importance, Web Browser, IP Addressing – Public Vs Private, Static Vs
Dynamic; WWW & related protocols; Internet Applications.
Cloud Computing: Meaning, Features, & Service models – Infrastructure as a service,
Advantages and disadvantages, Mobile Computing: Meaning, Business Applications of Mobile
computing, Virtual reality & Augmented Reality: Meaning and applications, IOT - Internet of
Things: Meaning & Application

Lab 3
*Surfing the Internet, Use of Email and Search Engines
Advanced web search and translation services, Web search, image search, Search only for pages
that contain (ALL the search terms contain the exact phrase you type, contain at least one of the
words you type, do NOT contain any of the words you type, written in a certain language,
created in a certain file format like ppt, pdf, rtf, doc, xls), Advanced search operators: Include
search ("+" search), synonym search, OR search, Domain search, Numrange search, other*

advanced search features (Google, Local language, Technology Search, Date, Occurrences, Domains, Safe search), Multiuser ; Google docs: Create documents, spreadsheets and presentations online, Share and collaborate in real time, Safely store and organize your work, Control who can see your documents

Reference Books:

1. Introduction to Information Technology by ITL Education Solutions Limited, second edition.

2. 'O' Level made simple "Introduction to ICT resources" by Satish Jain, Shashank Jain, Shashi

Singh & M. Geetha Iyer, BPB publication.

3. Computer fundamentals fourth edition by Pradeep K. Sinha and Priti Sinha BPB publications

4. Information Technology The breaking wave by Dennis Curtin Tata McGraw-hill edition

5. Cloud Computing by Anandamurugan, T.Priyaa et al.

6. Internet of Things: A Hands-On Approach byArsheep Bahga

Web references

1. www.moodle.org,

2. www.wikipedia.org

FYBCOM   **Semester II**

Computer Science -CSG106 : Computer Applications – II

Effective from : 2017-18

(Credits: Theory-03, Practical-01)   Theory : 45 Lectures

Practical : 30 Lectures

Course Objectives: To understand computer networking concepts, e-commerce technology and business applications; understand principles of cyber security, online threats and cyber laws and prepare students to adopt safe practices.

Unit I   Basics of Computer Networking

(Lectures: 6, Practical Lab 2 Marks Th-15, Pr-2).

Networking basics, Need for computer networks, Types of networks-LAN, MAN, WAN, Network Components – H/W, Software, Communication channels, Network Devices, Network topologies.

Lab1
Basic Networking Setup of PC, Network commands like ipconfig, ping, traceroute, nslookup / dig etc, Setup of Home Router / Wifi Hotspot, Understanding of Firewall and Basic Firewall Setup, File and Printer Sharing, connecting to share, Setup of Email Clients like Outlook, FTP Clients and Upload / Download. Finding out public address, connection speeds etc.

Unit II   E-Commerce

(Lectures: 10, Practical Lab 07 Marks Th-15, Pr-15)

Definition, E-commerce and Trade Cycle, Electronic Markets, Electronic Data Interchange and Internet Commerce, Types of E-commerce :Business to Business E-Commerce, Business to Consumer E-Commerce. Consumer to Consumer, Electronic Payment Systems: Smart Cards – Credit Cards – Wallets, Risks, E-Retail, Concept and Examples, E-Banking, Features and services, M-Commerce, Products and services

Lab2
E-commerce
• Attempt to purchase a product online from any E-Commerce Site. Proceed till payment gateway. Check digital certificates (such as ebay.in and amazon.com)

• Write a review of an E-Commerce Site visited include: Site description, Site Design, ease in navigation , process for purchasing items, security, privacy, customer service, best features of site etc..

• An E-commerce site case study: Include

> *Target market/audience: who uses this service?*
> *Revenue model: where does the money come from?*
> *How are they promoting their products in the marketplace? ,*

Unit III   Emerging threats in Cyber Space
(Lectures: 15, Practical Lab 02 Marks Th-25, Pr-2).

Introduction to cyber space, Malware threats- Definition and types (Virus/ worms, Trojan, Rootkits, Spyware, Keyloggers). Social Engineering, Cyber Crimes – Definition, Types (DOS, Intellectual Property Rights and related crimes, Unauthorized access to computer system or networks, Theft of information contained in electronic form, Cyber Stalking, Identity Theft, Email Spoofing, E-mail bombing, Online gambling, Sale of illegal articles, Cyber Defamation, Salami attack, Phishing, Pharming, Data Diddling, logic bombs, Web jacking, Theft of computer system, physically damaging a computer system, Cyber warfare, Cyber terrorism.)

Lab3
Installation and Configuration of any free Antivirus Package eg. AVG/Avast etc., Using Antivirus Package for Threat Detection, Browser security and Safety such as Understanding SSL and Certificates, checking URL of site for Phishing attempts, Email Headers and Tracking, Identification of Phishing Emails

Unit IV   Cyber Safety, IT Act and Cyber forensic
(Lectures: 14, Practical Lab 04 Marks Th-20, Pr-6)

Online Privacy – Introduction, Significance, Privacy Policy, Sensitive Personal Information, Social media – Usage, Safety. Online shopping – Introduction, Safety measures (Encryption of data authentication , SSL, Digital signatures, Digital Certificates), Online payments – Introduction, Types, Safe practices.

Cyber Laws: Evolution and Need for cyber law, The legal perspectives – Indian perspective, Global perspective, Information Technology Act(ITA) 2000, Provisions related to E-commerce, Provisions for cyber-crimes, Information Technology (Amendment)(ITAA) Act 2008, Adjudicating officer, CERT-IN- its role and powers.

Reporting Cyber Crimes, Cyber Forensics: Introduction, Evidence collection, Data Recovery, Cloning of Devices, Forensic Investigation phases – Acquisition and preservation,

Authentication, Analysis, Documenting Evidence, Presentation of Evidence, Media sanitization.

Lab4.1
Keeping passwords cyber secure-Choosing strong passwords, Privacy settings on Facebook, Social Media Safety, Payment Systems Security concerns and Safe Practices, Online Banking Security features, OpenPGP Tools.

Lab4.2
Use of Investigation tools such as Winhex for forensic investigation, Data Recovery using winhex, Use of Free data recovery tools like Recuva, Mapping a given list of cyber-crimes to appropriate ITAA Act 2008 offence listed in http://www.naavi.org/ita_2008/index

Reference Books and web references

1. Rick Lehtinen and G. T. Gangemi, Computer Security Basics, O'Reillly Media, Inc.; 2nd

Edition, 2006

2. Wall, David, (2007). Cyber Crime: The Transformation of Crime in the Information Age.

Polity Publishing

3. Michael cross, Scene of the Cyber Crime, Syngress Publishing, Elsevier Publishing, 2nd

Edition, ISBN 13: 978-1-59749-276-8

4. Chander, Harish, Cyber Laws and IT Protection, ISBN: 978-81-203-4570-6

5. Nina Godbole, SunitBelapure, "Cyber Security – Understanding Cyber Crimes,Computer

Forensics and Legal Perspectives", Wiely India Pvt.Ltd.,ISBN - 978-81-265-2179-1

6. Frontiers of Electronic Commerce Ravi Kalakota& Andrew B Whinston, Pearson

Education.

7. BruiceSchneier, "Applied Cryptography-Protocols, Algorithms and Source code in C", 2nd

Edition, Wiely India Pvt Ltd, ISBN 978-81-265-1368-0

8. Cyber Laws, http://deity.gov.in/content/cyber-laws

9. www.cert.org

Computer Science -CSG107 : Desktop Publishing

Effective from : 2017-18

(Credits: Theory-03, Practical-01)   Theory : 45 Lectures

Practical : 30 Lectures

Course Prerequisites: Basic working knowledge of computers and Internet.

Course Objectives: To develop specific skills and competencies needed by those who use computer hardware and software in publication houses. These skills include knowledge of the DTP page layout program, from basic page setup to use of specialized techniques such as graphic effects, understanding graphic formats and conventions that give publications a quality look.

Course Structure:

    Marks: 100 (Theory: 75 mark + Practical: 25marks)

    Contact Hours: Theory Lectures: 45 +

        Practical Laboratory Session: 15 of 2 hours each

Course Credits: 4 Credits (3 Credits for Theory + 1 Credit for Practical)

Course Content:

<u>THEORY</u>

UNIT I …………….…………………………………...10 Marks (8 Lectures)

Introduction to DTP
What desktop publishing means; the traditional publishing process; the desktop publishing process; essentials of desktop publishing (input devices, output devices and software); Introduction to open source and proprietary software used in DTP (Scribus, Adobe In-Design, Adobe Photoshop, Google Picassa, Corel Draw, GIMP, Inkscape).

UNIT II………………………………………………….20 Marks (12 Lectures)

Basics of Page Layout
Basics of page layout; page layout in pictures (running head, initial cap, folio, body type, margins, spread, banner or nameplate, deck, format, grid, display type, headline type, pull quote, gutter, eyebrow, rule, box, caption, etc.); measurement units like inch, pica and points; features of good typography; anatomy of typefaces-typestyles. Serif and sans serif fonts.

UNIT III ………………………………………………………..27 Marks (16 Lectures)

Graphics
Computer graphics: classification- raster and vector graphics; how paint and image - editing programs work(brighten, darken, increase/decrease contrast, sharpen, diffuse, emboss, change color balance, etc.); how illustration programs work; how three dimensional graphics programs work.

Color
Additive and subtractive colors; color spaces-hue, saturation, brightness; the color wheel; colour gamuts; printed color management systems-components: reference color, device profiles, color-matching engine.

Hardware
Types of scanners - flatbed, transparency and drum scanners; graphic input devices (graphics tablets, digital cameras); storage devices (blu-ray, dvd and flash drives); printers (inkjet and laser)

UNIT IV …………………………………………………….18 Marks (9 Lectures)

Prepress and final printing
How printing presses work; how color separations work; how trapping works; how imposition works; how proofing works- proofing devices; direct-to-plate imaging; web and digital publishing

References
1. Pfiffner Pamela, Frazer Bruce, (1994), **How Desktop Publishing Works**, Ziff-Davis Press
2. Bennet, (1998), **Illustrated world of Desktop Publishing,** Dreamland Publications-New Delhi

PRACTICALS
Introduction and installation of DTP Software   **(1 Lab Session)**
- Installation of Page-layout software like Adobe InDesign or Scribus(Open Source Software for DTP).
- Installation of Image Editing and Graphics Manipulation Software like Photoshop or GIMP or Irfanview or Corel Draw. Familiarizing with main menu features

Page-Layout Software   **15 Marks (9 Lab Sessions)**
- Creating a Document and a Page Background (Page Size, Margins, Background)
- Working with frames (Creating text/image frames, moving frames, resizing frames, rotating frames, line and colour of frames, text flow around frame)

- Working with Text (using story editor, inline graphics, importing text from file; Colour and effects on text, optical margins)
- Working with Images (lock, edit image, resize, properties)
- Working with styles(drop cap, character style)
- Working with Shapes & Polygons
- Working with Lines & Line Styles
- Working with Fill: Colors, Gradients and Patterns
- Working with Master Pages(Creating Master Pages, The Page Palette, Applying Master Pages)
- Automatic page numbering
- PDF Exporting from Scribus

Image Editing and Graphics Manipulation Software   10 Marks (5 Lab Sessions)

- Image size alteration
- Cropping an image
- Removal of unwanted elements using clone tool
- Selective color change
- Image orientation (verical and horizontal flips, rotations)
- Enhancing images(contrast and brightness changes)
- Selecting and merging of images
- Creating transparent images
- Special effects on image
- Change color depth (greyscale images)

References:

http://wiki.scribus.net/canvas/Help:TOC

Generic Electives Syllabus

(Numbers on right indicate number of lectures of 1 hour duration)

Computer Science -CSG108 : Multimedia Technology Effective from : 2018-19		
(Credits: Theory-03, Practicals-01) Theory : 45 Lectures Practicals : 30 Lectures		
Pre-requisites: Basic working knowledge of Computers and Internet.		
Course Objectives: To make the students aware of ▪ Color Models and color harmony, ▪ Raster and Vector Graphics formats & basic Graphic editing, ▪ Font types, selection of fonts ▪ Audio formats, codecs, basic audio editing, filters ▪ Video formats, codecs, basic video editing, filters and transitions ▪ Data compression.		
(Theory)		
1.	Introduction to Multimedia, Social & Ethical considerations, Digital Representations Standards	3L
2.	Color Theory - Color Basics, Color Systems, Color Wheel, Complementary Colors, After Images, Color Combinations, Color & Contrast, Itten's Contrasts, Proportion & Intensity, Contrast & Dominance, Shades & Tints, Color Studies; Color Gamut, ICC profiles, Gamma Correction.	7 L
3.	Introduction to Computer Graphics: Difference between Raster and Vector Graphics, Raster graphics : resolution, image compression, file formats, manipulation, Geometrical transformations; Vector graphics – fundamentals, file formats, shapes, transforms and filters	8 L
4.	Text and Layout: character set, fonts, layout & Text in graphics	6 L
5.	Sound: Sound Design, Audio Codec & file formats, processing sound, compression	10 L
6.	Animation: Types of Animation, Keyframe, Sprite , Perception of vision, Human Color Perception	4 L
7.	Video: Aspect Ratio, Frame Size, Frame Rate, Regions, Video Codec & Formats, Processing, Delivery	7 L

References :

1. Nigel Chapman, Jenny Chapman; Digital Multimedia; Wiley India Edition, 2nd Edition

2. Roger Parker; One-Minute Designer; Hungry Minds Inc,U.S.; 2nd edition

3. Ranjan Parekh, "Principles of Multimedia", McGraw Hill Education; 2 edition

4. Tay Vaughan, "Multimedia Making It Work"; Mc Graw Hill, Eighth Edition

(Practical)

List of Practical :
(at least 8 Practical from the following)

1. Image compositing : Remove background and combine images to create a work of art

2. Learn to create images for Print, Web and Video

3. Design a Logo for a company

4. Design a Brochure for given Product and details. Learn about different file formats

5. Design a poster with given information and learn about image compression

6. Edit the sound file and Learn about Effects and Filters of sound.

7. Record your voice and learn about Audio Compression

8. Learn Audio mixing and streaming of audio content

9. Learn about Video editing – Prepare video with rough cut.

10. Prepare video content with title and special effects.

11. Record video content and learn about video compressions.

12. Prepare Video content for vimeo / youtube.

> Note : Practical can be done using GIMP, Inkscape, Scribus, Blender, Audacity, Lightworks / Kdenlive

Computer Science -CSG109 : Open Source Technology		
Effective from : 2018-19		
(Credits: Theory-03, Practicals-01) Theory : 45 Lectures	Practicals : 30 Lectures	
Pre-requisites : Basic familiarity with using computers and using the web.		
Course Objectives: 1. To make the students aware of 2. FOSS [Free and Open Source Software, 3. Linux installation and management basics, 4. Open source software and installation 5. Existing open source projects		
(Theory)		
1.	Open Source, Free Software, Free Software vs. Open Source software, Public Domain Software, FOSS does not mean no cost.	3 L
2.	Four degrees of freedom , FOSS Licenses: GPL, AGPL, LGPL,FDL ...; FOSS examples.	3 L
3.	Introduction to Linux: How is it built, Distributions, desktops, file system basics	8 L
4.	User management and file permissions	6 L
5.	Software installation and updation : GUI, Command line; tips for picking software	10 L
6.	Introduction to Libre Office, Bluefish, GIMP / Pinta, Stellarium, OpenShot Video editor and others.	10 L
7.	Joining the existing Open Source Project	5 L

Text book:

1. Dayanand Ambawade, Deven Shah, "Linux Labs and Open Source Technologies", Deamtech Press, 2014.

2. Daniel James, "Crafting Digital Meida, Audacity, Blender, Drupal, GIMP and other Open Source Tools", Appress

Web Références :

1. http://spoken-tutorial.org

2. http://www.tldp.org/LDP/lame/LAME/linux-admin-made-easy/

3. https://www.gnu.org/philosophy/

4. https://opensourceforu.com/2017/02/linuxsusadmin/

5. https://www.linux.com/learn/understanding-linux-file-permissions
6. https://opensource.org/licenses

7. https://opensource.org/licenses/alphabetical

(Practical)

Suggested list of Practical :(at least 8 Practical from the following)

1. Create a bootable device (USB preferred) using an Linux ISO image and trying the OS from the device

2. Installing Linux on a PC and creating users (GUI)

3. Installing desktops and desktop customization.

4. man, cat, less, grep, who, whoami, ls, ps, sudo, chmod, chown

5. Searching and Installing software using software center, synaptic package manager, command line

6. Assigning file permissions and sharing files to users.

7. Advanced user management (GUI)

8. Libre Office

9. Bluefish

10. Stellarium

11. OpenShot

12. GIMP / Pinta

Note : Practical can be done using Ubuntu

Computer Science -CSG110 : Client Side Web Development	

(Credits: Theory-03, Practicals-01)   Theory : 45 Lectures   Practicals : 30 Lectures

Pre-requisites : Basic familiarity with using computers and using the web.

Course Objectives: To learn how to create a basic web page using HTML and CSS.

(Theory)	
1.	Introduction to world wide web, how the web works, Introduction to HTML5, anatomy of an HTML element, nesting elements, block versus inline elements, empty elements, attributes, Boolean attributes, anatomy of a HTML document, entity references, HTML comments, head, title, body, metadata, headings, paragraphs, lists, emphasis and importance, hyperlinks, anatomy of a link, block level links, URLs, absolute versus relative URLs, email links, description lists, quotations, abbreviations, superscript, subscript, date and time, image.	8 L
2.	Document and Website Structure, Structuring Content- semantic tags -header, navigation bar, main content, sidebar, footer, non-semantic wrappers- div and span, line breaks and horizontal rules, html table basics, span rows and columns, HTML table and advanced features and accessibility, designing form, fieldset, legend widgets, sending form data, form data validation, iframe.	14 L
3.	Introduction to CSS, how browsers affect CSS, internal and external style sheet, CSS syntax, selectors - simple selectors, attribute selectors, combinators, multiple selectors, pseudo-classes, pseudo-elements, cascade and inheritance, box model, fundamental text and font styling, values, units, colors, media queries, layout- static, liquid, adaptive and responsive, floats, positioning, flex box , grids.	20 L
4.	Introduction to Bootstrap Framework .	3 L

Text Books :

1. Laura Lemay , Rafe Colburn , Jennifer Kyrnin, "Mastering HTML, CSS & JavaScript Web Publishing", BPB Publications

2. Alex Libby, Gaurav Gupta, Asoj Talesra , "Responsive Web Design with HTML5 and CSS3 Essentials", PACKT Publishing

3. Thomas Powell, "HTML & CSS: The Complete Reference", Fifth Edition, MCGraw

Hill

Reference Books :

1. Elisabeth Robson, Eric Freeman, Head First HTML with CSS & XHTML A Learner's Companion to HTML, CSS and XHTML, O'Reilly Media

2. Jon Duckett, "Web Design with HTML, CSS, JavaScript and jQuery", Wiley; Pck edition

(Practical)

List of practical assignments (Use any popular IDE) : (at

least 8 practicals should be completed)

1) Create web pages using text, paragraphs, header tags, links, lists tags
2) Create web pages using table tags, column and row span
3) Creating tables using scope, id and header attributes
4) Design a form using widgets
5) Form validations
6) Use of different CSS selectors, pseudo-classes and pseudo-elements
7) Design a landing page layout
8) Use of CSS font style
9) Form validation using JavaScript
10) Use of Bootstrap

Second Year B.Com syllabus
Computer Applications for Business - (SEMESTER III)
SEC: Skill Enhancement Course

Credits: 2+2   Duration: 2 hrs.   Marks: 100(Theory 50 + Practical 50)

Lectures: 30, Practical Lab: 30 Sessions   Batch Size: 10 per batch

One Theory Lecture One Hour & One Practical Lab Session – Two Hours

Course Objectives: To enhance the students' understanding of usefulness of information technology tools for business operations and to familiarize them with the processes needed to develop, report, and analyze business data that involves use of spreadsheet and spreadsheet add-ins to solve business problems.

Theory:

Unit I: Concepts of Data Processing and analysis   Lectures: 6, Marks Th-10

a. Data Processing – Steps involved in data processing, advantages of computers in data processing , file management concepts- standard methods of organizing data, file management system, file types: transaction & master, file organization techniques – sequential, direct, indexed sequential

b. Data analysis and forecasting - importance of data analysis in business, Data forecasting – its need , benefits of data forecasting , use of forecast formula, statistical and financial functions.

c. Data Integration: concept and how it works

Unit II: Creating Business Spreadsheets   Lectures: 8, Marks Th-10

a. Spreadsheet concepts, Managing worksheets, Formatting, Entering data, Editing, and Printing a worksheet; Handling operators in formula, Project involving multiple spreadsheets, Organizing Charts and graphs.

b. Generally used Spreadsheet functions: Mathematical, Statistical, Financial, Logical, Date and Time, Lookup and reference, Database, and Text functions.

c. Creating spreadsheet in the area of: Loan and Lease statement; Ratio Analysis; Payroll statements; Capital Budgeting; Depreciation Accounting; Graphical representation of data; Frequency distribution and its statistical parameters; Correlation and Regression

d. Meaning and Advantages of macros

Unit III: Overview of Business Analytics   Lectures: 10, Marks Th-10

a. Introduction to Analytics: Business analytics – meaning and basic concepts

b. Visualization/ Data Issues: Organization/sources of data, Importance of data quality , Dealing with missing or incomplete data . Data Classification

c. Introduction to Data Mining: Meaning, basic concepts, data mining process

Unit IV: Internet technology

Lectures: 6, Marks Th-10

a. Introduction to computer networks : Introduction- need, advantages, disadvantages, types of networks, types of transmission media, networking devices-bridges, routers, gateways, IP addressing: why IP address, basic format of IP address- IPV4, IPV6, Protocols - HTTP, HTTPS, FTP, DNS, Email

b. Applications on Internet: search engines ,browsers, blogs, social networking - types and applications

REFERENCE

1. Computer Fundamentals by Pradeep K. Sinha and Priti Sinha
2. Introduction to Information Technology – ITL Education Solutions Limited, Pearson Education
3. Web technology- Kahate
4. Excel manual
5. Davenport article - "Competing on Analytics" , LaValle et al. article - "Analytics: The New Path to Value"
6. Davenport and Harris article - "The Dark Side of Customer Analytics"
7. www.howstuffworks .com

Note:

1. There shall be a theory examination of 50 Marks (Internal Assessment – 10 Marks; End Semester Exam – 40 Marks) of $1^{1/2}$ hrs duration
2. There shall be two lectures per theory class.

PRACTICALS:

1. Advanced Spreadsheet
Pr Lab 20 Mks Pr-25.

(MS-Excel or any similar open source software)
   a. Result representation of data using spreadsheet
   b. What-if analysis, Logical tests(nested if functions), Goal seek,
   c. Representing results graphically
   d. Filtering, advanced filters, sorting and conditional formatting data
   e. Data validation techniques, Hyperlinks
   f. Pivot table, Scenarios
   g. Summing through the sheets
   h. Getting external data files into Excel
   i. Macros - creation, editing and deletion of macros

Assignments to be given on the following topics: to prepare and analyse Loan and Lease statement; Ratio Analysis; Payroll statements; Capital Budgeting; Depreciation Accounting; Graphical representation of data; Frequency distribution and its statistical parameters; Correlation and Regression

2. Business Analytics
Pr Lab 3 Mks Pr-5.

(Using Spreadsheet or Statistical Package such as Gretel/SPSS)

   a. Assignments to analyse data available from IndiaStat.com such as Analysis of demographic data, environment data, public expenditure
   b. Analyse data from annual reports of Companies and banks

3. Designing, building and Launching a website
Pr Lab 7 Mks Pr-10.

Static Web Page Development. Basics of HTML: Create a Web page, Linking to other Web Pages, Publishing HTML Pages, Text Alignment and Lists, Text Formatting Fonts Control, Email Links and link within a Page, Creating a Table, Creating HTML Forms, Creating Web Page Graphics, Putting Graphics on a Web Page, Custom Backgrounds and Colors, Creating Simple Animated Graphics.

Note:

1. There shall be a practical examination of 50 Marks at the end of each semester (Practical-40 Marks and Work Book- 10 Marks) and duration of Examination shall be 2 Hrs.

2. There shall be 2 Practical Lab sessions per batch to be taught in computer Lab

3

Second Year B.Com syllabus
Computer Applications for Business- (SEMESTER IV)

SEC:Skill Enhancement Course

Credits: 2+2   Duration: 2 hrs.   Marks: 100(Theory 50 + Practical 50)

Lectures: 30, Practical Lab: 30 Sessions   Batch Size: 10 per batch

One Theory Lecture – One Hour & One Practical Lab Session = Two Hours

Course Objectives: To familiarise the student with various applications of Information and Communication technologies in business and to familiarize with the mechanism for conducting business transactions through electronic means.

Theory

Unit 1: Ecommerce theory   Lectures: 8, Marks Th-15

a. Introduction to E-Commerce: Scope, Definitions, Trade Cycles
b. The Value Chain / Supply Chain, Porter's Value Chain
c. Electronic data Interchange (EDI): Introduction, definition and benefits, technology standards, Communication, implementation, agreements, EDI and business.
d. E-Commerce models- categorizing major E-commerce business models(B2B,B2C,C2C), introduction , key elements a business model
e. E-payment System: Models and methods of e-payments (Debit Card, Credit Card, Smart Cards, e-money), digital signatures (procedure, working), payment gateways, risks involved in e-payments.
f. E-Commerce applications in various industries: banking, insurance, payment of utility bills, online marketing, e-tailing (popularity, benefits, problems and features), online services (financial, travel and career), auctions, online learning, publishing and entertainment, Online shopping (amazon, snapdeal, alibaba, flipkart, etc.)

Unit II: Database Management System

a. Database Designs for Accounting and Business Applications: Reality- Expressing the Application; Creating Initial design in Entity Relationship(ER) Model; Transforming ER Model to Relational data model concepts; Implementing RDM design using an appropriate DBMS.

b. SQL and Retrieval of Information: Basic Queries in SQL; Embedded Queries in SQL; Insert, Delete and Update statements in SQL

c. DBMS Software: Environment; Tables; Forms; Queries; Reports; Modules;

d. Applying DBMS in the areas of Accounting, Inventory, HRM and its accounting, Managing the data records of Employees, Suppliers and Customers.

Unit III: ERP

a. Introduction: Traditional information model, Introduction to an enterprise, What is an ERP?, Reasons for growth of ERP market, Advantages and Disadvantages of ERP

b. Introduction to business modules: finance, manufacturing, Human resource, materials management, sales and distribution, Limitations of ERP.

c. ERP and e-Commerce

Unit IV: Security and Encryption

a. Need and concepts, the e-commerce security environment- dimension, definition and scope of e- security

b. Security threats in the E-commerce environment - security intrusions and breaches, attacking methods like hacking, sniffing, cyber-vandalism etc

c. Technology solutions- Encryption security channels of communication, protecting networks and protecting servers and clients

Note:

1. There shall be a theory examination of 50 Marks (Internal Assessment – 10 Marks; End Semester Exam – 40 Marks) of $1^{1/2}$ hrs duration

2. There shall be two lectures per theory class.

REFERENCE

1. E-Commerce: Strategy, Technologies and Applications By David Whitely, Tata McGraw Hill Edition. I

2. Kalakota and Whinston, Frontiers of Electronic commerce, Pearson Education Asia.

3. S Sadagopan, "ERP a Management Prospective" Tata McGraw Hill Publishing Company Limited, New Delhi 1999

4. Database systems – Bipin Desai