Name of Teacher : Dr. Sarita Kadian

Course: B.A(Prog) Computer Application

Lesson Plan: July 2021- July 2022

**Programming in Python (BACS05B)(July 2021- Dec. 2021)**

Tentative weekly teaching plan is as follows:

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| **Week** | **Topics** |
| 1 | Introduction to Python  Structure of a Python program, understanding Python interpreter/Python shell. |
| 2 | Introduction to Python (contd..)  Identifiers and keywords, literals, Python data types, Operators: arithmetic operator. |
| 3 | Introduction to Python (contd..)  Relational operators, logical operators, Python standard libraries, variables and assignment statements. |
| 4 | Introduction to Python (contd..)  Notion of class, object. |
| 5 | Functions  Built-in functions such as input and print, function definition and call, default parameter values. |
| 6 | Creating Python Program:  Input and output statements, control statements - branching, looping. |
| 7 | Creating Python Program (contd..):  Exit function, break, continue and pass, mutable and immutable structures, strings, tuples. |
| 8 | Control Structures :  If statement, for loop. |
| 9 | Control Structures (contd..)  While loop, exit function, break and continue statements. |
| 10 | Classes:  Introduction to class, object, and method. |
| 11 | Strings  Introduction to Strings, built-in functions on strings. |
| 12 | Lists:  Concept of mutable and immutable structures, Introduction to lists, functions: list, append, count, extend, remove, index and pop. |
| 13-14 | Lists (contd..) :  List functions: insert, reverse, sort and reverse, list comprehension: shorthand notationfor creating lists, passing lists as arguments, copying list objects |
| 15 | Tuples:  Tuples and associated operations  Dictionaries:  Introduction to dictionary. |

**Information Security and Cyber Laws (IS & CL) (Dec. 2021- July 2022)**

**(BACS06A)**

Tentative weekly teaching plan is as follows:

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| Week | Topics |
| 1. | Introduction: Protection, security, risk, threat, flaw, vulnerability, exploit, attack, confidentiality, integrity, availability. |
| 2. | Introduction (contd.):Non-repudiation, authentication, authorization, ciphers, codes. |
| 3. | Introduction (contd.): Substitution cipher (Caeser), transposition cipher (Rail-Fence). |
| 4. | Introduction (contd.): Public key cryptography (definitions only), private key cryptography (definition and example), cyber forensics. |
| 5. | Risk Analysis and Threat: Risk analysis, process, key principles of conventional computer security, authentication, data protection. |
| 6. | Risk Analysis and Threat (contd.): Access control, internal vs external threat, security assurance, passwords. |
| 7. | Risk Analysis and Threat (contd.): Security policies, computer forensics and incident response. |
| 8. | Cyber Attacks and Digital Crime: DoS attack, man-in-the-middle attack, phishing attack, spoofing attack, spam attack, drive-by attack, password attack, SQL injection attack, cross-site scripting attack, eavesdropping attack. |
| 9. | Cyber Attacks and Digital Crime (contd.): Birthday attack, malware attack, social engineering attack, session hijacking attack, criminology of computer crime, cyber forensics, cyber foot prints. |
| 10. | Safety Tools and Issues : Firewalls, logging and intrusion detection systems, e-mail security |
| 11. | Safety Tools and Issues (contd.): Security issues in operating systems. |
| 12. | Safety Tools and Issues (contd.): Ethics of hacking and cracking.  Cyber laws to be covered as per IT Act:  Definitions: Digital certificate, Digital Signature And Electronic Signature, [Section 43]. |
| 13. | Cyber laws to be covered as per IT Act:  [Section 65], [Section 66A], [Section 66B], [Section 66C], [Section 66D]. |
| 14. -15. | Cyber laws to be covered as per IT Act (contd.):  [Section 66E], [Section 66F], [Section 67], [Section 67A], [Section 67B], [Section 72].  Information Security in India: Brief introduction of IT infrastructure for information security in India. |

**IT Fundamentals (CSGE501)**

**Generic Elective - (GE) (July-2021- Dec. 2021)**

Tentative weekly teaching plan is as follows:

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| **Week** | **Topics** |
| 1-2 | Introduction: Introduction to logical organization of computer, input and output devices like keyboard, mouse, joystick, Scanner, |
| 3-4 | OCR, OMR, Monitor, Printer, Plotter, (with connections and practical demo), |
| 5 | Storage Devices: Primary memory, secondary memory, Auxiliary memory | |
| 6-7 | User Interface: Operating system as user interface | |
| 8 | System tools, control panel settings | |
| 9 | Introduction to database | |
| 10 | Use of spreadsheet as database, use of functions | |
| 11 | Database operations in spreadsheet. | |
| 12-13 | Networks: Definition of network, classification of network, LAN, MAN, WAN, Distinction among networks | |
| 14-15 | Internet Applications: Internet as a global network, Internet utilities – email, online banking, reservations etc | |

**Multimedia and Web Design (CSGE601)**

**Generic Elective - (GE) (Dec. 2021- July 2022)**

Tentative weekly teaching plan is as follows:

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| Week | Topics |
| 1 | Introduction: Definition of multimedia, Components, uses, applications |
| 2 | Multimedia Input/ Output Devices: Scanner, camera, Microphone, Speaker, Monitors, Printers |
| 3 | Multimedia Storage Devices: CD ROMs, DVDs, Blue ray disk |
| 4 | Multimedia tools: Sound editor, video editor |
| 5 | Multimedia tools: Animator, Authoring tools |
| 6-7 | Web Designing: Concept of website, website as a communication resource, Internet, intranet and extranet, |
| 8 | Basic concepts related to website designing. |
| 9-11 | HTML: Introduction to hypertext markup language (html) Document type definition, creating web pages, |
| 12 | lists, Hyperlinks, graphical elements |
| 13 | Tables, web forms |
| 14 | Inserting images, Frames, hosting options and domain name registration |
| 15 | Cascading style sheet (css) |