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)  |