**Lesson Plan: Deepika Jain**

**Weekly Teaching plan**

**Open Source Softwares (BACS09A)**

**Skill-Enhancement Elective Course - (SEC-3A)**

**Semester V**

**(July 2021- November 2021)**

Tentative weekly teaching plan is as follows:

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| **Week** | **Topics** |
| 1-3 | GAMBAS: GUI environment: GAMBUS IDE, compiling, debugging and running the programs, explain new project window, property window, project explorer window |
| 4-7 | GAMBAS (contd.): Working with controls like textbox, frames, check box, option button, images, designing the user interface, coding for controls; data types, constants, declaring variables, scope of variables, formatting data |
| 8-11 | GAMBAS (contd.): Conditional and loop statements: If and nested if statements, comparing strings, select case statement, using statement, displaying message in message box, user input validation |
| 12 | GIMP: Installation, GIMP user interface, creating new windows, |
| 13-14 | GIMP (contd.): Freehand drawing in GIMP, drawing regular shapes, image editing, cropping and resizing, masking |
| 15 | GIMP (contd.): Language support |

Programming using Python (CSGE101) Generic Elective - (GE) Semester- I

**(December 2021 – March 2021)**

Tentative weekly teaching plan is as follows:

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| **Week** | **Topics** |
| 1-2 | Computer Fundamentals and Problem Solving: Basic Computer Organization: CPU, memory, I/O Units, Problem solving using computer, notion of an algorithm |
| 3 | Python interpreter/shell, indentation; identifiers and keywords; Creating Python Programs:Input and output statements, defining functions, literals, numbers, and strings; |
| 4 | Operators: arithmetic operators, relational operators, boolean operators, assignment operators, ternary operator and bitwise operator and expressions |
| 5 | Control statements (conditional statements, loop control statements, |
| 6 | Break, continue and pass, exit function, default arguments |
| 7 | Errors and exceptions |
| 8 | Strings and Lists: String class, built-in functions for string, string traversal, string operators and operations; |
| 9 | Lists creation, traversal, slicing and splitting operations, passing list to a function |
| 10 | Object Oriented Programming: Introduction to Classes, Objects and Methods, |
| 11 | Standard Libraries, File handling through libraries |
| 12-13 | Built-in data structures: Tuples, sets, dictionary, stacks, and queues |
| 14-15 | searching and sorting |

Database Managemen System (CSGE201)

Generic Elective - (GE)

Semester- II

**(April 2022-July 2022)**

Tentative weekly teaching plan is as follows:

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| **Week** | **Topics** |
| 1 | Introduction: Introduction to database, relational data model, |
| 2-3 | DBMS architecture, data independence and data abstraction, DBA, database  users, end users, front end tools |
| 4-5 | Data Modeling: Entity types, entity set, attribute and key, relationships, relation  types, E-R diagrams, database design using ER diagrams |
| 6-7 | Relational Data Model: Relational model concepts, relational constraints,  Primary and foreign key, candidate key, alternate, composite, superkey |
| 8 | Data redundancy, Normalization: 1NF, 2NF, 3NF. |
| 9 | Introduction to SQL, concepts of Data Definition Language (DDL) and Data  Manipulation Language (DML), |
| 10 | DDL commands to create a data base, drop a database, create table, drop table,  alter table |
| 11 | DML commands to inserting data in a table, update in a table, delete data from a  table, |
| 12 | Create relationships between database tables, auto increment, check, Null  values, |
| 13 | SQL queries to filter data, Group by, having, exists, case, order by |
| 14 | SQL queries for aggregate functions - min, max, count, average, sum, nested sub-queries, Join operations - inner, left join, right join, natural join, Cartesian  product. |
| 15 | Overview of Forms and Reports. |