**Session Plan for CSE1701- FALL 2017**

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| **Session** | **Lab Hour** | **Topics Covered** | **Inlab** |
| 1 | 2 | Faculty self introduction, Introduction to VIT, CSE1001 course, Course Objectives, Outcomes, Evaluation pattern, Open hours of Faculty, Do’s and Don’ts in lab, Expectations from the students  Block diagram of computer, Parts of computer, Introduction to programming languages and Generations | Inlab 1 |
| 2 | 2 | Overview of Problem solving: General problem solving concepts, approaches and challenges, problem solving with computers, problem solving tools: flowcharts, algorithms, data structures, Pseudo code. |
| Practice Problems 1 (Session 1, 2, 3,4,5) | | |
| 3 | 2 | Various Approaches of Problem solving : Solve by analogy, Decompose the task into smaller subtasks, Building block approach, Merging solutions, Algorithmic thinking, Choice of appropriate data structures, Implementation of the Pseudo-code, implementing the code, Testing the solution |
| 4 | 2 | Steps in Problem Solving – Drawing flowchart using yEd tool |
| 5 | 2 | Practice Problems 1 in SkillRack – Login verification  to be done inside the lab |
| Practice Problems 2 (Sessions : 6,7,8,9,10) | | | |
| 6 | 2 | Introduction to Python, Demo on IDE, Ipython, Spyder etc.  “Hello world” program in Python, Keywords, Identifiers, Reading input from user-Demo | Inlab 2 |
| 7 | 2 | Operators and Expressions in Python |
| 8 | 2 | Algorithmic Approach 1 : Sequential |
| 9 | 2 | Algorithmic Approach 2 : Selection ( if, elif, if.. else, nested if else ladder) |
| 10 | 2 | Algorithmic Approach 3: Iteration (while and for) |
| 11 | 2 | Assessment I (AS I) |
| Practice Problems 3 (Sessions : 12,13) | | | |
| 12 | 2 | Introduction to data representation using different data structures Strings : Operations | Inlab 3 |
| 13 | 2 | Regular Expressions |
| Practice Problems 4 (Session 14) | | |  |
| 14 | 2 | List : operations  More Problems on String and List | Inlab 4 |
| 15 | 2 | Assessment – II (AS II) |  |
| Practice Problems 5 (Sessions : 16,17,18,19) | | |  |
| 16 | 2 | Dictionaries : operations | Inlab 5 |
| 17 | 2 | Tuples operations |
| 18 | 2 | Set operations |
| 19 | 2 | More Problems on Set, Tuple and Dictionaries |
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| 20 | 2 | Assessment III (AS III) |  |
| Practice Problems 6 (Sessions 21,22,23,24,25,26) | | |  |
| 21 | 2 | Algorithmic Approach 4: Modular approach: Functions Demo | Inlab 6 |
| 22 | 2 | Recursions and exercises |
| 23 | 2 | More Problems on Functions |
| 24 | 2 | Sorting Introduction and types, Bubble sort | Inlab 7 |
| 25 | 2 | Selection, insertion sort and exercises |
| 26 | 2 | Searching : Sequential Search and Binary Search |  |
| 27 | 2 | Assessment IV (AS IV) |  |
| Practice Problems 7 (Sessions : 28,29,30) | | |  |
| 28 | 2 | Files : Operations | Inlab 8 |
| 29 | 2 | More exercises based on files |
| 30 | 2 | Orientation to Solving Complex Problems – Case Study |
| 31 | 2 | Challenging Task I (CTS I) |  |
| Practice Problems 8 (Sessions : 32-37,39-41) | | | |
| 32 | 2 | Data types, declaration and I/O in, C | Inlab 9 |
| 33 | 2 | Selection Statements in C (IF and Switch) |
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| 34 | 2 | Iterative Statements in C (For, While and Do While) |
| 35 | 2 | Single dimensional Arrays |
| 36 | 2 | Multidimensional Arrays |
| 37 | 2 | More problems on Arrays |  |
| 38 | 2 | Assessment V |  |
| 39 | 2 | Functions - Pass by value | Inlab 10 |
| 40 | 2 | Functions – Pass by Reference |
| 41 | 2 | Recursion |
| 42 | 2 | Challenging Task 2 (CTS 2) |  |