Course Outline / Plan

Southeast University

School of Science & Engineering/CSE Department

Spring, 2017

Program: B.Sc. in CSE

Course Title: Data Structure Lab Course code: CSE1034 Section: 1, 2

Faculty Name: Rajon Bardhan Faculty Code: RB Designation: Lecturer

Contact No: 01672652816 Email Address: <rajonbardhan@gmail.com>

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Days | 8:30–9:50 | 10:00–11.20 | 11.30–12.50 | 1.00–2.20 | 2.30–3.50 | 4.00–5.20 | 5.30-6.50 |
| Saturday |  | Counseling Hour | Counseling Hour |  |  |  |  |
| Sunday |  | CSE1033.2 [Lab5] | CSE1011.2 [Lab2] | Counseling Hour | CSE1034.1 [Lab3] |  |  |
| Monday |  | CSE1033.1 [Lab5] | CSE1033.3 [Lab5] | CSE1034.2 [Lab2] |  |  |  |
| Tuesday |  | CSE1033.2 [Lab5] | CSE1011.2 [Lab2] | Counseling Hour |  |  |  |
| Wednesday |  | CSE1033.1 [Lab5] | CSE1033.3 [Lab5] | Counseling Hour | CSE01012.2 [Lab2] |  |  |
| Thursday |  | Counseling Hour | Counseling Hour |  |  |  |  |

1. **Course objectives:**

The aim of this course is to give the students a feel for algorithms and data structures as a central part of computer science. Students will understand that algorithm and data structures used for some problem are much more important than knowing the exact code for it in some programming language. Students will be able to use and design linked data structures, but appreciate why it is good programming style to hide the details of a data structure within an abstract data type. Again they will learn inheritance mechanism of object-oriented languages by which they can write generalized code expressing an algorithm or data structure in a way that may be used in a variety of real-world situations.

1. **Learning outcomes:**

The aim of this course is to help students to choose data structures and algorithm again what design methods impacts the performance of programs will have upon the choices. Choosing the appropriate data structure and algorithm design method for a specified application. Write programs using object-oriented design principles. Solve problems using data structures such as linear lists, stacks, queues, hash tables, binary trees, heaps, tournament trees, binary search trees, and graphs and writing programs for these solutions.

1. **Course contents(in brief):**

Classes and objects, arrays, stacks, queues, linked lists, recursion, binary search trees, binary heap, hash tables, graph implementation.

1. **Text and Reference Book:**

1. Data Structures by Edward M. Reingold &Wilfred J. Hansen

2. Teach Yourself C++ by Herbert Schildt

3. C/C++ Programmer's Reference by Herbert Schildt

4. Introduction to Algorithms (3rd Edition, 2010) by Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein

5. Schaum’s Data Structure (latest edition)

1. **Tentative Plan of course:**

|  |  |  |
| --- | --- | --- |
| Lecture no | Brief course content & chapter no | Time period |
| Week 1  Lab 1 | Array | 80 minutes |
| Week 2  Lab 2 | Bubble Sort, Linear Search, Binary Search | 80 minutes |
| Week 3  Lab 3 | Object Oriented Programming | 80 minutes |
| Week 4  Lab 4 | Stack, Queue, Circular Queue | 80 minutes |
| Week 5  Lab 5 | Postfix, Prefix, Parenthesis balance | 80 minutes |
| Week 6  Lab 6 | Singly Linked List | 80 minutes |
| Week 7  Lab 7 | Doubly Linked List | 80 minutes |
| Week 8  Lab 8 | Merge Sort | 80 minutes |
| Week 9  Lab 9 | Binary Search Tree | 80 minutes |
| Week 10  Lab 10 | Breadth First Search | 80 minutes |
| Week 11  Lab 11 | Depth First Search | 80 minutes |
| Week 12  Lab 12 | **Lab Final** | 80 minutes |

1. **Course performance evaluation basis and Exam Format:**

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| --- | --- |
| **Performance Evaluation Basis, Midterm Exam & Final exam mark distribution\*** | |
| Attendance | 10% |
| Assignment ( Lab Report ) | 20% |
| Lab Performance | 10% |
| Term Final | 40% |
| Viva Voce | 20% |
| **Total** | **100%** |

1. **Grading Policy**

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| --- | --- | --- | --- | --- | --- |
| New Grading Policy (Applicable for students admitted after Summer 2007) | | | | | |
| Range | Grade point | Letter Grade | Range | Grade point | Letter Grade |
| 80-100 | 4.00 | A+ | 55-59 | 2.75 | B- |
| 75-79 | 3.75 | A | 50-54 | 2.50 | C+ |
| 70-74 | 3.5 | A- | 45-49 | 2.25 | C |
| 65-69 | 3.25 | B+ | 40-44 | 2.00 | D |
| 60-64 | 3.00 | B | < 40 | 0.00 | F |

1. **Instructor’s special note/ instructions:**
2. 75% attendance is required for attending lab final.
3. Must Keep I.D. card with you.
4. Integrity is very important in all my courses. Students with lack of integrity will be penalized.