Ref:CS/PC/2024/08/05-C Date: 31st August, 2024

**Proposal to Conduct A DSA Workshop**

### **Organizing Department:**

Computer Engineering Department, M.H. Saboo Siddik College of Engineering

### **Organizing Committee:**

Programmers’ Club MHSSCE

### **Event Overview:**

* **Title:** Data Structure and Algorithms Workshop.
* **Date:** September 23-25,2024
* **Time:** 8:30 am- 6:00 pm
* **Venue:** Seminar Hall, M.H. Saboo Siddik College of Engineering
* **Expected Participants**: SE, TE, BE Students
* **Resource Person:** Jahid Khan (3 star Leetcoder), Murtuza Attarwala (Media.net)
* **In-charge –** Ahlam A.

### **Aim:**

### The workshop aims to deepen participants' expertise in Data Structures and Algorithms, equipping students with essential skills for solving complex problems, ace technical interviews, and excelling in competitive programming. Through focused sessions and interactive problem-solving, the workshop will bridge the gap between theory and practical application, preparing students for success in both academic and professional settings.

### **Workshop Objectives:**

### **Enhance Core Competencies:** Strengthen participants' foundational understanding of Data Structures and Algorithms.

### **Hands-On Experience:** Provide practical, hands-on learning through real-world algorithmic problem-solving.

### **Competitive Programming Preparation:** Equip participants with essential skills for competitive programming by focusing on puzzles and key algorithmic concepts.

### **Career Readiness and Interview Preparation:** Prepare students for technical interviews and career opportunities by reinforcing the importance of Data Structures and Algorithms in the software development process.

### **Workshop Outcomes:**

1. **WO1: Mastery of Core Concepts**Participants will develop a solid understanding of Data Structures and Algorithms, enhancing their ability to solve complex computational problems.
2. **WO2: Practical Problem-Solving**Participants will apply theoretical knowledge to practical challenges, refining their problem-solving techniques and coding skills.
3. **WO3: Collaboration and Peer Learning**Participants will engage in collaborative learning, sharing insights and approaches with peers, which will enhance their teamwork and communication skills.

### **SO-PO Mapping:**

| **WOs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WO1** | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 2 | 3 | 3 |
| **WO2** | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 |
| **WO3** | 2 | 2 | 2 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 3 |

**Program Schedule:**

|  | DAY 1 | DAY 2 | DAY 3 |
| --- | --- | --- | --- |
| 9.00 am - 9.30 am | Introduction session | Revision | Different Approaches (Greedy, string, recursive) |
| 9.30 am - 10.00 am | Complexities of algorithm |
| 10.30 am - 1.00 pm | Puzzle solving using brainteaser | Link list & pointer | Graph |
| 1.00 pm - 2.00 pm | **BREAK** | | |
| 2.00 pm - 3.30 pm | Arrays, stack & queue | Searching techniques | Graph |
| 3.30 pm - 4.45 pm | Doubt & Queries solving | Sorting  techniques | Quiz & Discussion |
| 4.45 pm - 5.00 pm | Revision | | |

**In-charges:**

1. Dr. Mohammed Ahmed Shaikh ( HoD, Computer Engineering Dept.)
2. Er. Ahlam Ansari (Programmer’s Club Incharge, Computer Engineering Dept.)