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|  | | | | **ITER, SIKSHA ‘O’ ANUSANDHAN (Deemed to be University)** | | | | | | | | | | | | | | | | | | | **CURRICULUM** | | | | |
| Programme | | | | **BTech in Computer Science & Engineering** | | | | | | | | | | | Academic Year | | | | | | | | **2023-24** | | | | |
| Department | | | | **Computer Science & Engineering** | | | | | | | | | | | Semester | | | | | | | | **IV** | | | | |
| Course  Code | | Course Name | | | | | | | | | | Credit Structure | | | | | Marks Distribution | | | | | | | | | | |
| L | | T | P | C | Quiz / Assign. | | MID | | END | Lab | | | Attendance | | Total |
| **CSE 2141** | | **Computer Science Workshop 2** | | | | | | | | | |  | |  | **8** | **4** | **20** | | **15** | | **60** |  | | | **5** | | **100** |
| Course  Objectives | | The course topics will include study about how to design and implement different data structure using java | | | | | | | | | Course Outcomes | | | CO1 | Analysis algorithm, using time and space complexity. | | | | | | | | | | | | |
| Data structure like Linked list, stack, queue, binary tree, heap are design, analyze and implemented using java. | | | | | | | | | CO2 | Understanding and effectively use ADT, java collection, sorting and searching. | | | | | | | | | | | | |
| Different problems are solved, using dynamic programming, greedy algorithm and parallel computing. | | | | | | | | | CO3 | Applying linked list, stack, queue on different problem solving. | | | | | | | | | | | | |
| CO4 | Applying tree, priority queue, graph on problem solving. | | | | | | | | | | | | |
| CO5 | Understanding algorithm design techniques. | | | | | | | | | | | | |
| CO6 | Applying design techniques on problem solving. | | | | | | | | | | | | |
| No. | COs | | Mapping with Program Outcomes (POs) | | | | | | | | | | | | | | | | | Mapping with PSOs | | | | | | | |
| PO1 | | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | | PO9 | | PO10 | PO11 | | PO12 | | PSO1 | | | | PSO2 | | | PSO3 |
| 1 | CO1 | |  | |  |  |  |  |  |  |  | |  | |  |  | |  | |  | | | |  | | |  |
| 2 | CO2 | |  | |  |  |  |  |  |  |  | |  | |  |  | |  | |  | | | |  | | |  |
| 3 | CO3 | |  | |  |  |  |  |  |  |  | |  | |  |  | |  | |  | | | |  | | |  |
| 4 | CO4 | |  | |  |  |  |  |  |  |  | |  | |  |  | |  | |  | | | |  | | |  |
| 5 | CO5 | |  | |  |  |  |  |  |  |  | |  | |  |  | |  | |  | | | |  | | |  |
| 6 | CO6 | |  | |  |  |  |  |  |  |  | |  | |  |  | |  | |  | | | |  | | |  |
| SYLLABUS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. | Content | | | | | | | | | | | | | | | | | | | Hours | | | | | | COs | |
| I | Algorithm analysis | | | | | | | | | | | | | | | | | | | **6** | | | | | | **CO1** | |
| Approach to Solve Algorithm design problems. | | | | | | | | | | | | | | | | | | | **6** | | | | | | **CO1** | |
| Abstract data type and java collections | | | | | | | | | | | | | | | | | | | **6** | | | | | | **CO2** | |
| II | Sorting | | | | | | | | | | | | | | | | | | | **8** | | | | | | **CO2** | |
| Searching | | | | | | | | | | | | | | | | | | | **4** | | | | | | **CO2** | |
| IV | LinkedList | | | | | | | | | | | | | | | | | | | **8** | | | | | | **CO3** | |
| Stack | | | | | | | | | | | | | | | | | | | **3** | | | | | | **CO3** | |
| Queue | | | | | | | | | | | | | | | | | | | **3** | | | | | | **CO3** | |
| V | Tree | | | | | | | | | | | | | | | | | | | **6** | | | | | | **CO4** | |
| Priority Queue | | | | | | | | | | | | | | | | | | | **6** | | | | | | **CO4** | |
| Hash-Table | | | | | | | | | | | | | | | | | | | **3** | | | | | | **CO4** | |
| VI | Graphs, String Algorithm | | | | | | | | | | | | | | | | | | | **8** | | | | | | **CO4** | |
| VII | Algorithm Design Techniques,  Brute force Algorithm,  Greedy Algorithm | | | | | | | | | | | | | | | | | | | **8** | | | | | | **CO5,CO6** | |
| VIII | Divide-And-Conquer, Decrease-and-conquer  Dynamic programming | | | | | | | | | | | | | | | | | | | **8** | | | | | | **CO5,CO6** | |
| IX | Backtracking  Complexity theory | | | | | | | | | | | | | | | | | | | **8** | | | | | | **CO5,CO6** | |
| Total Hours | | | | | | | | | | | | | | | | | | | |  | | | | | |  | |
| **Textbook** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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