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| Jjjj | **COURSE OUTLINE**  nn | |
| 1 | Faculty | Faculty of Science and Engineering (FSE) |
| 2 | Department | Computer Science and Engineering |
| 3 | Programme | B.Sc. in Computer Science and Engineering |
| **4** | **Name of Course** | Structured Programming |
| **5** | **Course Code** | CSE 103 |
| **6** | **Trimester** | Summer 2021 |
| **7** | **Pre-requisites** | None |
| **8** | **Status** | Core Course |
| **9** | **Credit Hours** | 3 |
| **10** | **Section (s)** | 211 DA, 211 DB, 211 DC, 211 EA, PC-211D |
| **11** | **Class Hours** | |  |  |  |  | | --- | --- | --- | --- | | **Section** | **Class Day** | **Class Hours** | **Venue** | | 211 DA | Monday | 08:30 AM-10:00 AM | Online | | Wednesday | 08:30 AM-10:00 AM | Online | | 211 DB | Monday | 10:00 AM-11:30 AM | Online | | Wednesday | 10:00 AM-11:30 AM | Online | | 211 DC | Monday | 03:00 PM-04:30 PM | Online | | Wednesday | 03:00 PM-04:30 PM | Online | | 211 EA | Wednesday | 06:00 PM-07:15 PM | Online | | Wednesday | 07:15 PM-08:30 PM | Online | | PC-211D | Monday | 02:30 PM-04:00 PM | Online | | Wednesday | 02:30 PM-04:00 PM | Online | |
| **12** | **Class Location** | Online |
| **13** | **Course website** | <https://classroom.google.com/u/0/c/MzU4MzMxOTIzMTAx> (211DA), <https://classroom.google.com/u/0/c/MzU4MzMxOTIzMTQ4> (211DB),  https://classroom.google.com/c/MzU4MDcwMjIwMTA5?cjc=gvnkwhc (211DC),  <https://classroom.google.com/u/0/c/MzU5MDQzOTY0MzEx> (211EA),  <https://classroom.google.com/c/MzU5MzU5MTczNDQ3?cjc=dq5qqzg> (PC-211D). |
| **14** | **Instructor** | Prof. Dr. Md. Saiful Azad (211DA, 211DB),  Mr. Humayan Kabir Rana (211DC),  Ms. Shamima Akter (211EA),  Mr. Ohiduzzaman Shuvo ( PC-211D) |
| **15** | **Contact** | saiful@cse.green.edu.bd (211DA, 211DB),  humayan@cse.green.edu.bd (211DC),  [shamima\_akter@cse.green.edu.bd (211EA)](mailto:shamima_akter@cse.green.edu.bd%20(211EA)),  shuvo@cse.green.edu.bd ( PC-211D ) |
| **16** | **Office** | NA (due to online classes) |
| **17** | **Counselling Hours** | |  |  |  |  | | --- | --- | --- | --- | | **Section** | **Day** | **Counseling Hours** | **Venue** | | 211DA | Monday | 03:00 PM-04:30 PM | Online | | 211DB | Tuesday | 03:00 PM-04:30 PM | Online | | 211DC | Tuesday | 03:00 PM-06:00 PM | Online | | 211 EA | Tuesday | 10:00 AM-11:30 AM | Online | | PC-211D | Thursday | 09:30 AM-11:00 AM | Online | | Thursday | 01:00 PM-02:30 PM | Online | |
| **18** | **Textbook** | 1. K. N. King (2014). C Programming: A Modern Approach, 2nd Edition. W. W. Norton publisher |
| **19** | **Reference books** | 1. McGraw-Hill,.Schaum's Outline of Programming with C, 2nd Edition. 2. Schildt, H (2000). The Complete Reference C, 4th Edition. McGraw-Hill. 3. Kernighan, B. W., & Ritchie, D. M. (2006). The C programming language. Prentice Hall. 4. Kanetkar, Y. P. (2016). Let us C. BPB publications. 5. Video Tutorials on C for Beginners 6. <https://www.w3resource.com/c-programming-exercises/> 7. [https://blog.udemy.com/c-tutorial-learn-c-in-20-minutes/](https://www.w3resource.com/c-programming-exercises/) |
| **20** | **Equipment & Aids** | Bring your own materials *(calculator, pen, paper, etc.)* to participate effectively in classroom activities. **You are not allowed to borrow from others inside the classroom during class activities.**  ***Note: Besides class note, Please keep at least one blank A4 size paper per class with you.*** |
| **21** | **Course Rationale** | This course is all about the basics of all programming languages, and also the knowledge of initial software development. We all know that software is very essential for all devices, organization, institute, or company. And software is nothing but a package of programs. This course facilitates to gather knowledge about program, developing small software and will teach the students enough about the modern-world miracle. The course assumes students are familiar with programming covered by most introductory courses. |
| **22** | **Course Description** | Overview: data types, operators and expression; control structure: decision making and branching, decision making and looping, jumping statements; array and strings: linear array, multidimensional array and strings; managing input and output operations; user defined functions: defining, calling, declaring functions; user defined data types: structure and union; pointer, dynamic memory allocation and file handling; sound and graphics. |
| **23** | **Course Outcomes (CO)** | After completing this course students will be able to:  **CO1:** Explain the basic concepts of structured programming language, syntax and semantics of various data types, decision making and looping structures, array, pointer, file processing, etc. [Cognitive]  **CO2:** Develop codes in structured programming language for solving simple and moderately complex problems. [Cognitive]  **CO3:** Demonstrate teamwork skills aiming in implementing and presenting a moderately complex real-life problem. [Affective] |
| **24** | **Teaching Methods** | Maximum topics will be covered from the textbook. For the rest of the topics, reference books will be followed. Some class notes will be uploaded on the web. White board will be used for most of the time. For some cases, multimedia projector will be used for the convenience of the students. Students must participate in classroom discussions for case studies, problems solving and project developments. |
| **25** | **Topic Outline**  All topics and problems are from the main text if not specified otherwise. | |
|  | |  |  |  |  | | --- | --- | --- | --- | | **Lecture** | **Selected Topics** | **Article**  **(Text)** | **Suggested**  **Problems.**  **(Text)** | | (1) | Socialization and Introduction to the course | - | - | | Overview | | Importance of C programming | | Introduction of IDE and Compiler | | (2) | Writing a simple C program | 2.1 | 1-5 | | The General form of a simple program | 2.2 | | Comments | 2.3 | | Variables & Assignments | 2.4 | | Input/Output | 2.5 | | (3-4) | Arithmetic operators | 4.1 | 1-6 | | Assignment operators | 4.2 | | Increment/Decrement operators | 4.3 | | Expression Evaluation | 4.4 | | (5-6) | Logical Expressions | 5.1 | 1-10 | | The if statement | 5.2 | | The switch statement | 5.3 | | (7-10) | The while statement | 6.1 | 1-14 | | The do statement | 6.2 | | The for statement | 6.3 | | Exiting from a loop | 6.4 | | (11-12) | One dimensional array | 8.1 | 1-8 | | Multidimensional array | 8.2 | | (13-15) | Defining and calling function | 9.1 | 1-11 | | Function declarations | 9.2 | | Arguments | 9.3 | | Return statements | 9.4 | | Program termination | 9.5 | | Recursion | 9.6 | | File operations |  | | (16-17) | String literals | 13.1 | 1-10 | | String variables | 13.2 | | Reading and writing strings | 13.3 | | Accessing the characters in a string | 13.4 | | Using the C string library | 13.5 | | Arrays of strings | 13.6 | | (18-19) | Structure variables | 16.1 | 1-6 | | Structure types | 16.2 | | Nested arrays & structure | 16.3 | | (20-22) | Pointer variables | 11.1 | 1-7 | | The address and indirection operators | 11.2 | | Pointer assignment | 11.3 | | Pointer as arguments | 11.4 | | Pointer as return values | 11.5 | | Dynamic memory allocation |  | | (23-24) | Pointer arithmetic | 12.1 | 1-9 | | Using pointers for array processing | 12.2 | | Using an array name as a pointer | 12.3 | | Pointers & multidimensional arrays | 12.4 | | |
| **26** | **Assessment and Marks Distribution:** | Students will be assessed on the basis of their overall performance in all the exams, quizzes, and class participation. Final numeric reward will be the compilation of (tentative):   * Class Test (15%) * Group Assignment (5%) * Individual Presentation (5%) * Class Attendance (5%) * Mid-Term Exam (30%) * Final Exam (40%) |
| **27** | **Assessment Methods of COs** | Assessment methods of COs are given below:   |  |  |  |  | | --- | --- | --- | --- | |  | **Course Outcomes** | | | | **Assessment Methods** | **CO1** | **CO2** | **CO3** | | Class Test | 15% |  |  | | Group Assignment, Individual Presentation, Attendance |  | 5% | 10% | | Mid-Term Exam | 10% | 20% |  | | Final Exam | 15% | 25% |  | | **Total (100%)** | **40%** | **50%** | **10%** | |
| **28** | **Mapping of COs with POs** | Mapping of COs with program outcomes (POs) are given below:   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Program Outcomes (POs)** | | | | | | | | | | | | | | | **COs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | | **CO1** | **√** |  |  |  |  |  |  |  |  |  |  |  | | **CO2** |  | **√** |  |  |  |  |  |  |  |  |  |  | | **CO3** |  |  |  |  |  |  |  |  | **√** |  |  |  | |
| **29** | **Grading Policy** | The following chart will be followed for grading. This has been customized from the guideline provided by the School of Engineering and Computer Science.   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **A+** | **A** | **A-** | **B+** | **B** | **B-** | **C+** | **C** | **D** | **F** | | **80 and above** | **75-<80** | **70-<75** | **65-<70** | **60-<65** | **55-<60** | **50-<55** | **45-<50** | **40-<45** | **<40** | |
| **30** | **Additional Course Policies** | |  |  | | --- | --- | | Assignments | One group assignment will be given to the student where the students may have to explore new topics related to structured programming.  ***Note: Any kind of copy in assignment will carry zero mark.*** | | Class Test | There will be at least three CTs, best of two will be counted. A CT can be taken with an announcement in prior or without any announcement. | | Exams | Mid-term and final exam will be closed book, closed notes. Mobile is strictly prohibited in exam hall. Please bring your own watch and synchronize time during exam hours. | | Test Policy | If you are absent from a test, and you have not spoken to the teacher personally beforehand, your grade for the test will be zero. No make-up for class test will be taken because it has alternative (three out of four). No make-up for mid will be entertained without presence and recommendation of guardian and written permission of the department. Make-up test of mid will be much harder than the regular test. | |
| **31** | **Additional Information** | 1. Academic Calendar Summer 2021: http://www.green.edu.bd/academics/academic-calendar. 2. Academic Information and Policies: http://www.green.edu.bd/academics/academic-rules-a-regulations. 3. Grading and Performance Evaluation: http://www.green.edu.bd/academics/academic-rules-a-regulations. 4. Proctorial Rules: http://www.green.edu.bd/administrator/proctors-office. |