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| **College of Information Technology and Computing**  Department of Information Technology | | **SYLLABUS**  Course Title: **Computer Programming 1**  Course Code: **IT111**  Credits: 3 units (1 hours Lecture, 2 hrs Laboratory) |
| **USTP Vision**    A nationally-recognized Science and Technology (S&T) university providing the vital link between education and the economy    **USTP Mission**     * Bring the world of work (industry) into the actual higher education and training of the students; * Offer entrepreneurs of the opportunity to maximize their business potentials through a gamut of services from product conceptualization to commercialization; * Contribute significantly to the national development goals of food security and energy sufficiency through technology solutions.     **Program Educational Objectives:**     |  | | --- | | **PEO1:** Engage in successful careers as IT professionals in various industries. | | **PEO2:** Demonstrate continuous professional development through certifications, graduate studies, or self-directed learning. | | **PEO3:** Uphold ethical, social, and environmental responsibilities in their professional practice. | | **PEO4:** Contribute to innovation, process improvement, or entrepreneurship in IT-related domains. |   **Program Outcomes:**   |  | | --- | | **a:** Apply computing knowledge and IT principles to solve real-world problems. | | **b:** Analyze complex problems and identify appropriate IT solutions. | | **c:** Design, implement, and evaluate computer-based systems or processes that meet desired needs. | | **d:** Work effectively in teams, including diverse and multidisciplinary environments. | | **e:** Understand professional, ethical, legal, and social issues and responsibilities related to IT. | | **f:** Communicate effectively with stakeholders, both technical and non-technical. | | **g:** Analyze the impact of IT on individuals, organizations, and society. | | **h:** Engage in lifelong learning to adapt to the changing landscape of IT. | | **i:** Use current tools, techniques, and practices necessary for the IT profession. | | **j:** Support IT infrastructure needs of an organization, including hardware, software, networks, and databases. | | |  |  | | --- | --- | | Semester/Year:**1st Semester SY 2024-2025**  Class Schedule: cascsc  Bldg./Rm. No.: 41-104 | Prerequisite(s):N/A  Co-requisite(s):N/A | | Instructor: Joshua Amper, Juan Carlos Valdevieso  Email: amper.joshua210@gmail.com, valdeviesojuan2@gmail.com  Mobile No.: 0932873817, 09561250107 | Consultation Schedule: Casd  Bldg.Rm. No.: 41-104  Office Phone No./Local: | | 1. **Course Description:** *This course introduces the fundamental concepts of computer programming using a high-level programming language. It covers problem-solving strategies, algorithm development, data types, control structures, functions, and basic input/output operations. Emphasis is placed on writing clear, well-structured, and documented code. The course provides a solid foundation for students to develop computational thinking and programming skills essential for further studies in information technology and computing.* | | | 1. **Course Outcome:**  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Course Outcomes (CO)** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | | CO1: Apply fundamental programming concepts such as variables, control structures, functions, and data types to solve basic computational problems. | I | I | I | I | I | I | I | I | I | I | | CO2: esign and implement algorithms using a structured programming approach to develop readable, efficient, and error-free code. | E | E | E | E | E | E | E | E | E | e | | CO3: Demonstrate debugging, testing, and documentation techniques in writing and refining simple programs. | D | D | D | D | D | D | D | D | D | D | | | | 1. **Course Outline:**  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Allotted Time** | **Course**  **Outcomes (CO)** | **Intended Learning Outcomes (ILO)** | **Topic/s** | **Suggested Readings** | **Teaching-Learning Activities** | **Assessment Tasks/Tools** | **Grading Criteria** | **Remarks** | | 8hoursWeek 1 | CO1 | Describe the components of a computer program and explain the software development life cycle | Introduction to Programming and SDLC | Programming textbook Chapter 1 | Lecture-discussion, QandA | Quiz, Reflection |  |  | | 8hoursWeek 2 | CO1 | Write programs using variables, constants, and operators | Variables, Data Types, Operators | Chapter 2 | Code demonstration, hands-on coding | Machine problem, Seatwork |  |  | | 8hoursWeek 3 | CO1 | Construct programs with selection structures (if, else-if, nested if) | Conditional Statements | Chapter 3 | Guided coding exercises, pair programming | Code review, Quiz |  |  | | 8hoursWeek 4 | CO1, CO2 | Apply loop structures to automate repetitive tasks | Loops: while, for, do-while | Chapter 4 | Interactive coding lab, peer review | Practical exam, Worksheet |  |  | | 8hoursWeek 5 | CO2, CO3 | Use functions for modular and reusable code | Defining and Calling Functions | Chapter 5 | Mini-lecture, code tracing, function breakdown | Machine problem, Quiz |  |  | | MIDTERM EXAMINATION | | | | | | | | | | 8hoursWeek 6 | CO1 | Demonstrate the use of arrays to store multiple data elements | Defining and Calling Functions | Chapter 6 | Group activity: data entry app | Code demo, Lab exercise |  |  | | 8hoursWeek 7 | CO1 | Solve problems using multi-dimensional arrays | Defining and Calling Functions | Chapter 6 (cont’d) | Coding activity: matrix problems | Seatwork, Quiz |  |  | | 8hoursWeek 8 | CO1 | Implement basic string manipulation techniques | Defining and Calling Functions | Chapter 7 | Coding challenge: string validation | Hands-on exercise |  |  | | 8hoursWeek 9 | CO1, CO2 | Debug and handle runtime errors using exception handling (if applicable to language) | Defining and Calling Functions | Chapter 8 or online docs | Case-based discussion | Debugging task |  |  | | 8hoursWeek 10 | CO2, CO3 | Integrate all learned concepts to build a final programming project | Defining and Calling Functions | All chapters | Guided project development | Project presentation and defense |  |  | | 8hoursWeek 10 |  | Integrate all learned concepts to build a final programming project | Defining and Calling Functions | All chapters | Guided project development | Project presentation and defense |  |  | | FINAL EXAMINATION | | | | | | | | | | | | 1. **Course Requirements:**  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | asdasd | asd | ad |  |  |  |  | |  |  | asd |  |  |  |  | |  |  |  |  |  |  |  | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | **Prepared by:** | |  | | Amper Amper  Instructor | | Valdevieso Valdevieso  Instructor | |  | | | |  | | --- | | **Recommending Approval:** | |  | | Juan Carlos Valdevieso | | Chair | |  | |  | | | |  | | --- | | **Approved by:** | |  | | Juan Carlos Valdevieso | | Dean | |  | | | |  |  | |  | | |  |  | |  | | |  |  | |  | | | |