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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 2027-2028**  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)** | **Program Outcomes (PO)** | | | | | | | | | | | **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 | | | | | | | | | | 8 hours Week 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 |  |  | | 8 hours Week 7 | CO1, CO2 | Solve problems using multi-dimensional arrays | Defining and Calling Functions | Chapter 6 (cont’d) | Coding activity: matrix problems | Seatwork, Quiz |  |  | | 8 hours Week 8 | CO2, CO3 | Implement basic string manipulation techniques | Defining and Calling Functions | Chapter 7 | Coding challenge: string validation | Hands-on exercise |  |  | | 8 hours Week 9 |  | 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 |  |  | | 8 hours Week 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:**   *1. Course Readings/Materials*  • Starting Out with Python, Tony Gaddis, Pearson (2019)  • Introduction to Programming Using Python, Y. Liang, Pearson (2013)  • Python: The Ultimate Beginner's Guide, Andrew Johansen (2016)  • https://docs.python.org/3/tutorial/index.html  • https://www.tutorialspoint.com/python/index.htm  • https://www.learnpython.org/  • https://github.com/python  *2. Class Attendance and Participation Policy*   Reference: Student Handbook 2023 (Chapter 8. Attendance of Students)   Art. 1. Admission to Class   Enrolled students must show proof of their registration before being admitted to class. Upon the discretion of the instructor, students who are not enrolled may be allowed to attend a class as observer.   Art. 2. Tardiness and Absence   Prompt and regular attendance in classes is required of all students throughout the duration of every course. A student is considered tardy when s/he arrives past 25% of the scheduled class period (e.g., 30 minutes for a 1.5-hour period; 1 hour for a 3-hour period). Three (3) instances of tardiness are equivalent to one (1) absence. In cases where instructors/professors are late for class, students should not leave the classroom until the first third fraction of the schedules class time has passed. Absences during the adding/dropping period shall not be included in the counting.   Art 3. Excuses Absences   It is the responsibility of the students to comply with the class requirements in case of missed classes. Absences of students may be excuses for any of the following reasons:   Section 1. Illness   Section 2. Natural Calamities   Section 3. Absences after Midterm Examination   Section 4. Official participation in curricular or non-curricular Activities     Art 4. Dropped Due to Absence   In compliance with BOR Resolution No. 31, s. 2018, the student who has incurred three (3) consecutive weeks of unexcused absences or more than seventeen percent (17%) of the total number of contact hours in the semester (e.g., 3 meetings for 3-hour classes/week) shall be automatically given a grade of Dropped with Failure (D/F) by the instructor. Once a student is given a midterm mark of D/F, the final grade shall automatically be D/F. A mark of "D/F" is not equivalent to a failing grade of 5.0.  *3. Assignment, Assessment, and Evalution*   Rubrics:   |  |  | | --- | --- | | Laboratory Exam | | | CRITERIA | % | | Documentation | 20% | | Code Style | 50% | | Code Functionalities | 30% |      |  |  | | --- | --- | | Hands-on and Laboratory Exercise | | | CRITERIA | % | | Coding Style | 30% | | Code Functionalities | 40% | | Understanding of the code | 30% |      |  |  | | --- | --- | | Performance Innovative Project | | | CRITERIA | % | | Coding Style | 30% | | Code Functionalities | 40% | | Understanding of the code | 30% |      Grading System:   |  |  | | --- | --- | | Lecture Grade (67%) | | | CRITERIA | % | | Class Performance Item | 10% | | Quizzes | 40% | | Major Exams | 30% | | Performance Innovative Task / Project | 20% | | Laboratory Grade (33%) | | | CRITERIA | % | | Laboratory Exercises/ Reports | 30% | | Laboratory Exam | 40% | | Hands-on Exercises | 30% |      Term/Periodic Grade: 67% Lecture Grade + 33% Laboratory Grade   Criteria and Weights in computing the Final Term Grade:  • If the FINAL EXAM coverage are all topics discussed from the beginning of the semester: FG = 1/3 MTG + 2/3 FTG  • If the FINAL EXAM coverage are all topics during the final term only: FG = 1/2 MTG + 1/2 FTG   Passing percentage: 70% (e.g., in a 10-item quiz, obtaining 7 pts would be equivalent to a passing score)  4. Use of VLE in class to distribute course materials, to communicate and collaborate online, to post grades, to submit assignments, and to give you online quizzes and activities.  *Disclaimer: Every attempt is made to provide a complete syllabus that provides an accurate overview of the subject. However, circumstances and events make it necessary for the instructor to modify the syllabus during the semester. This may depend, in part, on the progress, needs, and experiences of the student.* | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | **Prepared by:** | | Joshua Amper  Instructor | | Juan Carlos Valdevieso  Instructor | |  | | | |  | | --- | | **Recommending Approval:** | | Juan Carlos Valdevieso | | Department Chair | |  | |  | | | |  | | --- | | **Approved by:** | | Juan Carlos Valdevieso | | Dean | |  | | | |  |  | |  | | |  |  | |  | | |  |  | |  | | | |