CMPE107 - CMSE107 Foundations of Computer - Software Engineering

Department: Computer Engineering

Instructor information

Assoc. Prof. Dr. Adnan Acan **E-mail:** adnan.acan@emu.edu.tr, **Office:** CMPE110 Group 1

Asst. Prof. Dr. Cem Ergün **E-mail:** cem.ergun@emu.edu.tr, **Office:** CMPE108 Group 2

Assoc. Prof. Dr. Mehmet Bodur (Coordinator) **E-mail:** mehmet.bodur@emu.edu.tr, **Office:** CMPE111 Group 3-4

John Olorunfemi Olaife **E-mail:** john.olaifa@emu.edu.tr **Office** Cmpe104 Group 5

Assistant Coordinator: Tansel Sarihan.

Program Name: Computer Engineering	**Program Code:** 25	
Course Number: CMPE 107 - CMSE 107	**Credits:** 4 Cr	**Year/Semester:** 2021-2022 Fall

☒ Required Course Elective Course

Prerequisite(s): None

Catalog description:

Design of computer algorithms with pseudo-code to solve problems, analyze engineering related problems using computer. Basic elements of a high level computer programming language: Data types, constants and variables, arithmetic and logical operators and expressions. Fundamental components of Python programming language: Storing and manipulating user-input data, design and use of selection structures, design and use of repetition structures, lists and other data structures, functions, modular designs, dictionaries and sets, file input/output.

Course web page:

https://staff.emu.edu.tr/mehmetbodur/en/teaching/cmpe107-cmse107

Textbook(s):

Charles Dierbach, Computer Science using Python: A Computational Problem Solving Focus, Wiley,

ISBN 978-0-470-55515-6

Indicative basic reading list:

Eric Matthes, Python Crash Course: A Hands-on Project-based Introduction to Programming,

ISBN-10: 1-59327-603-6

Topics covered and class schedule (tentative):
(3 hours of lectures per week)

Oct-04 Oct-09	**Week 1** A closer look at a computer system: Basic software and hardware components.
Oct-11 Oct-16	**Week 2** Introduction to problem solving techniques, Algorithms and Pseudo Code
Oct-18 Oct-23	**Week 3** Introduction: basic data types, constants, variables, operators and expressions.
Oct-25 Oct-30	**Week 4** Data and Expressions: Writing code to store and manipulate user-input data.
Nov-01 Nov-06	**Week 5** Data and Expressions: Cont., Control and repetition structures.
Nov-08 Nov-13	**Week 6** Control and repetition: Cont.. Lists ans List comprehensions
Nov-15 Nov-20	**Week 7** Lists: Cont.
Nov-22 Dec-04	**Midterm**
Dec 06 Dec 11	**Week 8** Lists: Cont, Functions
Dec-13 Dec-18	**Week 9** Functions: Cont,
Dec-20 Dec-25	**Week 10** Modular designs Dictionaries and Sets
Dec-27 Jan-01	**Week 11** Modular: Cont.
Jan-03 Jan-08	**Week 12** File Input/Output
Jan-10 Jan-15	**Week 13** File: Cont
Jan 17 Jan 29	**Final Exam**

Laboratory	**(2 hours per week)**
Weeks 1, 2	No Lab
Week 3: LAB 1	Introduction to Python Programming Environment/ Numbers and Variable Assignment
Week 4: LAB 2	Strings and Printing formatting
Week 5: LAB 3	Sequential code structure in Python Programming
Week 6: LAB 4	Selective code structure in Python Programming
Week 7: LAB 5	Repetitive code structure in Python Programming
	Midterm
Week 9: LAB 6	Lists and Other Data Structures to Store Data
Week 10: LAB 7	Functions and Their Use in a Program / File Input/Output
Week 12:	Lab Final Exam

Course learning outcomes:

Upon successful completion of the course, students are expected to have the following competencies:

1. Identify the difference between computer hardware and computer software
2. Construct an algorithm for solving a computational problem
3. Use interactive development environment (IDE) to edit, compile, and execute Python code
4. Write a complete Python program for solving a problem
5. Use of selection and repetition structures within a Python Program
6. Creating lists and other data structures for storing and manipulation of data
7. Using functions and implementing modular programming approach in Python
8. Writing code to display results

Assessment Method (tentative)	No	Percentage
Lab Work + Lab Exam	7+1	20 %
Midterm Exam	1	35 %
Final Exam	1	45 %

Policy on makeups: For eligibility to take a makeup exam, the student should bring (submit) a doctor's ***report within 3 working days*** of the missed exam. You will have only one make-up for midterm or final exams only. Make-up will be organized after final exam period and will cover all the materials covered during the semester.

Attendance to lectures: Attendance will be taken in every lecture but will not be graded.

Attendance to labs: There is no makeup for labs. For a missed lab session, lab grade for that session will be taken as zero. If a student does not attend more than two lab sessions, his/her overall lab grade will be taken as zero.

Policy on cheating and plagiarism: Any student caught cheating in exams or in any other graded course work will automatically fail from the course and may be sent to the disciplinary committee at the discretion of the instructor.

Policy on NG grades: NG grade will be given in case of Missing Midterm and Final without official excuse.

Contribution of course to ABET criterion 5

Credit Hours for:

Mathematics & Basic Science : 0
Engineering Sciences and Design : 4
General Education : 0

Relationship of the course to program outcomes

The course has been designed to contribute to the following program outcomes:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Prepared by: Assoc. Prof. Dr Adnan ACAN, Assist. Prof. Dr. Cem ERGÜN, Assoc. Prof. Dr. Mehmet Bodur

Date Prepared	23 September 2019
Date Modified	10 October 2020, 04 October 2021