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| **CMPE 108 ALGORITHMS & PROGRAMMING** |
| **Department:** Computer Engineering |
| **Instructor Information****Coordinator****Name:** Hasan Kömürcügil (Gr02) **E-mail:** hasan.komurcugil@emu.edu.tr**Office:** CMPE207**Office Tel:** +90 392 630 1363 |  |
| **Assistant Information****Coordinator:****Name:** Samaneh Sarfarazi **E-mail:** samaneh.sarfarazi@emu.edu.tr**Office:** 122**Office Tel: +9**0 392 630 2833 |  |
| **Program Name:** Computer Engineering | **Program** **Code:** 25 |
| **Course Code** CMPE 108 | **Credits** 3 Cr | **Year/Semester**2021-2022 Fall |
| [ ]  Required Course [ ]  Elective Course [x]  Service Course  |
| **Prerequisite(s)** None |
| **Catalog Description**Problem-Solving concepts for computers. Program structures for computer languages. Sequential logic structures: algorithm instructions and flowcharts. Problem-Solving with: decisions, loops and case logic structures. Data structures: arrays, lists. File processing. Laboratory applications will be done with programming languages such as Fortran, C or Visual Basic or other languages. |
| **Course Web Page** <https://staff.emu.edu.tr/hasankomurcugil/en/teaching/cmpe-108> |
| **Textbook(s)** “C Programming: A Modern Approach”, Second Edition, K. N. King, Norton, 2008.**Reference Book(s)** “Problem Solving and Programming Concepts”, Maureen Sprankle and Jim Hubbard, Pearson Prentice Hall, 8th Edition,2008.“Programming in ANSI C”, Ram Kumar and Rakesh Agrawal, West Publishing Company, 1992.“C How to Program”, Paul Deitel and Harvey Deitel, Sixth Edition, Pearson Prentice Hall, 2009.“Problem Solving and Program Design in C”, J. R. Hanly and E. B. Koffman, Sixth Ed., Pearson Addison-Wesley, 2009.“C: The Complete reference”, Herbert Schildt, McGraw-Hill, 1995. |
| **Topics Covered and Class Schedule****(3 hours of lectures + 2 hours lab per week)**

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| WEEK OF | TOPICS | LABS |
| Sept 27 – Oct 1 | Introduction to the course | No Lab |
| Oct 11 – Oct 15 | Computers (Hardware and Software)  | No Lab |
| Oct 18 – Oct 22 | Problem solving concepts for the computer - Algorithms and Flowcharts  | Lab 0 - Computer Hardware and Architecture |
| Oct 25 – Oct 29 | Problem solving concepts for the computer - Algorithms and Flowcharts  | Lab 1 - Introduction to DevCpp or MS Visual Studio |
| Nov 1 – Nov 5 | Introduction to C (Chapter 1)C Fundamentals   (Chapter 2) | No Lab |
| Nov 8 – Nov 12 | Formatted input / output (Chapter 3)Expressions (Chapter 4) | Lab 2- Sequential Programming |
| Nov 15 – Nov 19 | Selection Structures (Chapter 5) | Lab 3- Selection Structures |
| Nov 22 – Dec 4 | Midterm Exams | No Lab |
| Dec 6 – Dec 10 | Repetitive Structures  (Chapter 6) | No Lab |
| Dec 13 – Dec 17 | Repetitive Structures  (Chapter 6) | No Lab |
| Dec 20 – Dec 24 | Types - char (Chapter 7) | Lab 4- Repetitive Structures |
| Dec 27 – Dec 31 | Arrays (Chapter 8) | Lab 5- Repetitive Structures (cont.) |
| Jan 3 – Jan 7 | Functions (Chapter 9) | Lab 6-Arrays |
| Jan 10 – Jan 14 | Review | Lab 7-Functions |
| Jan 17- Jan 29 | Final Exams | No Lab |

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| **Course Learning Outcomes**A successful student passing this course gains an ability to1. know the of hardware and software requirements for coding, compiling and executing C programs.(e1,e2,e3)
2. use a suitable IDE to edit, compile, and execute C codes (k1,k2,k3)
3. construct an algorithm and /or flowchart for solving a problem (e1,e2,e3)
4. include library headers, and declare variables of basic types (e1,e2,e3)
5. use if, if-then-else and switch statements in C codes (e1,e2,e3)
6. use while-loop, do-while loop, and for-loop in C codes (e1,e2,e3)
7. use arrays concept in C programming (e1,e2,e3)
8. use functions with arguments by value (e1,e2,e3)

The contribution of each course learning outcome to student outcomes is specified in parenthesis. The studentoutcomes are available at <http://cmpe.emu.edu.tr/abet> |
| **Assessment** | **Method** | **No** | **Percentage** |
| Midterm Exam(s) | 1 | 40% |
| Final Examination | 1 | 50% |
|  | Labs | 8 | 10% |
| **Attendance and Participation:** Attendance to every lecture is mandatory. |
| **Policy on makeups** * Only one makeup exam will be given for the midterm or final at the end of the semester that will cover all the topics listed above. **The student MUST submit a written report to the course instructor, stating their excuse, within 3 days of that examination. The report will be evaluated by the committee of instructors. If the committee approves, the student will be able to take a make-up exam.**
* The re-sit exam will cover both midterm and final topics, and it will replace both midterm and final.
* If you miss both midterm and final exams and did not submit any written report that was approved by the committee, you will get an **“NG”** grade.
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| **Policy on labs** * **No exemption** will be provided for labs.
* There will be **no makeup** for the missed lab experiments.
* If you miss **three or more labs**, your lab grade will be zero.
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| **Policy on cheating and plagiarism:** Plagiarism (which also includes any kind of cheating in exams, assignments, and lab works) is a disciplinary offence and will be dealt with accordingly. Furthermore, the penalty of plagiarism is to get grade zero for the corresponding exam, assignment, or lab work. |
| **Contribution of Course to ABET Criterion 5**Credit Hours for: * Mathematics & Basic Science : 0
* Engineering Sciences and Design : 3
* General Education : 0
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| **Updated by: H. Kömürcügil** | **Date Updated:** 20 September 2021 |