

### SYLLABUS

|                                  |  |
|----------------------------------|--|
| <b>Code/Name</b>                 | MCE 109 / Introduction to Computer and Information Systems   |
| <b>Type</b>                      | Required   |
| <b>Credit/ECTS</b>               | 2/2  |
| <b>Hour per Week</b>             | 2 (1+1+0)  |
| <b>Level/Year</b>                | Undergraduate/1  |
| <b>Semester</b>                  | Fall   |
| <b>Classroom</b>                 | L208   |
| <b>Content</b>                   | Computer systems and applications. Input/output and storage. Internet, electronic mail, data and file transfer. Wired and wireless communication. Application software such as text editors, visualizations, spreadsheets, equation solvers, and databases. Computational error. Introduction to scientific problem solving through algorithms.  |
| <b>Prerequisites</b>             |  |
| <b>Textbooks</b>                 | <p><b>Primary</b><br/>JG Brookshear, D Brylow, <i>Computer Science: An Overview</i>, 12<sup>th</sup> edition, Pearson, 2014.<br/>GM Schneider, J Gersting, <i>Invitation to Computer Science (Introduction to CS)</i>, 6<sup>th</sup> edition, Cengage, 2012.</p> <p><b>Supplementary</b><br/>P Donham, <i>Introduction to Computer Science</i>, 1<sup>st</sup> edition, Cognella Academic Publishing, 2018.<br/>J Havill, <i>Discovering Computer Science: Interdisciplinary Problems, Principles, and Python Programming</i>, 2<sup>nd</sup> edition, CRC Press, 2020.</p> |
| <b>Objectives</b>                | <ul style="list-style-type: none"><li>• To introduce the basics of computers</li><li>• To introduce the basic architecture and technologies of the Internet</li><li>• To practice in the basic software applications such as text editors and spreadsheets</li><li>• To practice for presentation with applications</li><li>• To introduce the computational error</li></ul>   |
| <b>Course Outcomes</b>           | In this course you will be able to:<br>C01 Understand how a computer and its peripheral devices operate<br>C02 Understand the importance of the Internet technologies in daily life<br>C03 Organize basic text documents at an intermediate level<br>C04 Use spreadsheet programs effectively<br>C05 Use written presentation effectively<br>C06 Awareness of the computational error  |
| <b>Weekly Schedule of Topics</b> |  |
| W                                | Topic  |
| 1                                | Basic computer knowledge, input/output, storage, and data processing   |
| 2                                | Introduction to operating systems, the web, networks, Internet, wired/wireless communication   |
| 3                                | Introduction to basic skills on common computer software (Word processing)   |
| 4                                | Introduction to basic skills on common computer software (Word processing)   |
| 5                                | Introduction to basic skills on common computer software (Spreadsheet applications)  |
| 6                                | Introduction to basic skills on common computer software (Spreadsheet applications)  |
| 7                                | Introduction to basic skills on common computer software (Spreadsheet applications)  |
| 8                                | Introduction to basic skills on common computer software (Spreadsheet applications)  |

|    |   |
|----|---|
| 9  | Introduction to basic skills on common computer software (Spreadsheet applications) |
| 10 | Introduction to basic skills on common computer software (Spreadsheet applications) |
| 11 | Introduction to basic skills on common computer software (Presentation preparation) |
| 12 | Introduction to basic skills on common computer software (Presentation preparation) |
| 13 | Introduction to scientific problem solving, and common programming software         |
| 14 | Common programming software and computational error                                 |

**Professional Contribution** Understand the place and importance of computer science and programming in mechanical engineering

**Contribution to Program Outcomes\***

|     | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| C01 | 5   | 3   | 3   | 5   | 0   | 0   | 5   | 4   | 1   | 4    | 0    |
| C02 | 5   | 3   | 3   | 5   | 0   | 0   | 5   | 4   | 1   | 4    | 0    |
| C03 | 1   | 0   | 0   | 0   | 1   | 2   | 5   | 3   | 1   | 5    | 2    |
| C04 | 3   | 2   | 5   | 5   | 0   | 0   | 0   | 5   | 1   | 5    | 3    |
| C05 | 3   | 3   | 3   | 5   | 0   | 0   | 5   | 4   | 1   | 5    | 0    |
| C06 | 5   | 3   | 3   | 5   | 0   | 0   | 5   | 4   | 1   | 4    | 0    |

\* Contribution Level | 0: None | 1: Very Low | 2: Low | 3: Medium | 4: High | 5: Very High

**Special Conditions**

- Students work in groups for presentations.
- The consequence of violation of the attendance rule is to receive a grade of NA.

**Requirements**

|                   |                  |      |
|-------------------|------------------|------|
| <b>Evaluation</b> | Midterm Exam     | 30%  |
|                   | Quiz, Assignment | 30%  |
|                   | Final Exam       | 40%  |
|                   | Total            | 100% |

**Rubric**

**Course Policy**

1. You must attend at least 70% of the sessions including add-drop period.
2. Be in the class on time.
3. English should always be used to communicate with one another.
4. Mobile phone should be switched off and put away during the class.

**Cheating & Plagiarism**

- Copying or letting someone to copy your work on exams, assignments, or reports is cheating.
- Cutting and pasting text, figures and tables from the web sources or any other electronic source is plagiarism.

**Instructor**

|              |                 |              |                               |
|--------------|-----------------|--------------|-------------------------------|
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| Room         | D-002           | Office Hours |                               |

Prepared by Alparslan Topcu