

## Faculty of Computers and Information Technology

### Selected Topics in Computer Science-1

#### Information :

**Course Code :** CS467

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Department of Computer Science

#### Instructor Information :

| Title              | Name                            | Office hours |
|--------------------|---------------------------------|--------------|
| Lecturer           | Esam eldeen fawzy Elfagharany   |              |
| Teaching Assistant | Salma Mohamed Shalaby Abdelaziz |              |

#### Area Of Study :

Use and adopt fundamental and advanced mathematics, basic sciences and computer science theories in all development phases of computer-based modern systems.  
Comprehend deeply the advanced concepts of computer science to be ready for further and continuous learning.  
Show a complete understanding of all modern computer science disciplines.  
Develop and evaluate a computer based system process and components.  
Compare, evaluate and select a design of computer-based modern systems from a set of alternatives

#### Description :

Topics which are not included in the curriculum and seems to be needed should be suggested as an elective course by CS department

#### Course outcomes :

##### **a.Knowledge and Understanding: :**

|     |                                                                                                                |
|-----|----------------------------------------------------------------------------------------------------------------|
| 1 - | Explain the advanced principles and techniques of different areas in computer science                          |
| 2 - | Discuss the advanced topics of the specialized courses in computer science                                     |
| 3 - | Explain the selected advanced topics in sufficient depth in different aspects of modern computer-based systems |

##### **b.Intellectual Skills: :**

|     |                                                                                                                                          |
|-----|------------------------------------------------------------------------------------------------------------------------------------------|
| 1 - | Compare and differentiate between algorithms, methods and techniques used in advanced computer science problems solutions                |
| 2 - | Classify data, results, methods, techniques and algorithms used to build modern computer-based systems                                   |
| 3 - | Identify main ideas, patterns, components, attributes and detect relationships between these components of modern computer-based systems |

##### **c.Professional and Practical Skills: :**

|     |                                                                                                                                                     |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 - | Evaluate the quality of modern computing systems using different factors and different constrains                                                   |
| 2 - | Apply different soft skills by oral, written, presentations and visual means in a professional way during development modern computer-based systems |
| 3 - | Create technical reports according to professional standards to finalize modern computer-based systems                                              |

**d.General and Transferable Skills: :**

|     |                                                                                                         |
|-----|---------------------------------------------------------------------------------------------------------|
| 1 - | Work on a team for the development of a requirements document                                           |
| 2 - | Apply communications skills in presentation and report writing of requirements engineering deliverables |

**ABET Course outcomes :**

|     |                                                                                                                                                              |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 - | Use and adopt fundamental and advanced mathematics, basic sciences and computer science theories in all development phases of computer-based modern systems. |
| 2 - | Comprehend deeply the advanced concepts of computer science to be ready for further and continuous learning.                                                 |
| 3 - | Show a complete understanding of all modern computer science disciplines.                                                                                    |
| 4 - | Develop and evaluate a computer based system process and components.                                                                                         |
| 5 - | Compare, evaluate and select a design of computer-based modern systems from a set of alternatives.                                                           |

**Course Topic And Contents :**

| Topic                        | No. of hours | Lecture | Tutorial / Practical |
|------------------------------|--------------|---------|----------------------|
| Determined by the department | 32           | 16      | 16                   |
| Mid-Term Exam                | 2            |         |                      |
| Determined by the department | 16           | 8       | 8                    |
| Final Exam                   | 2            |         |                      |

**Teaching And Learning Methodologies :**

|                                                                            |
|----------------------------------------------------------------------------|
| Interactive Lectures including Discussions                                 |
| Practical Lab Sessions                                                     |
| Self-Study (Project / Reading Materials / Online Material / Presentations) |
| Problem Solving                                                            |

**Course Assessment :**

| Methods of assessment   | Relative weight % | Week No | Assess What |
|-------------------------|-------------------|---------|-------------|
| Final Exam              | 40.00             | 14      |             |
| Individual Projects     | 10.00             |         |             |
| Midterm Exam (s)        | 20.00             | 9       |             |
| Others (Participations) | 10.00             |         |             |
| Quizzes                 | 10.00             | 5       |             |
| Team Work Projects      | 10.00             |         |             |

**Course Notes :**

An Electronic form of the Course Notes and all the slides of the Lectures is available on the Students Learning Management System (Moodle)

**Recommended books :**

Depends on selected topic

**Web Sites :**

Depends on selected topic