## Faculty of Computers and Information Technology

### Analysis and Design of Algorithms

**Information :**

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| **Course Code :** | CSC312 | **Level :** | Undergraduate | **Course Hours :** | 3.00- Hours |

| **Department :** | Faculty of Computers and Information Technology |
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**Instructor Information :**

| Title | Name | Office hours |
|---|---|---|
| Associate Professor | Wael Hassan gomaa Mohamed Abuzaid | 1 |
| Associate Professor | Wael Hassan gomaa Mohamed Abuzaid | 1 |
| Teaching Assistant | Yasmina Mohamed Nasr Abdel Latif Eldafrawy | |
| Teaching Assistant | Fatmaelzahra Hamdi Abdallah Mohamed | |
| Teaching Assistant | IBRAHIM AYMAN IBRAHIM AHMED TAGEN | |

**Description :**

The course provides the fundemntals of algorithm design and analysis, the basics of analyzing algorithms for correctness , time and space bounds. Up-completeness theory, the notion of intractable problems, approximation measures, polynomial time approximation, and algorithm complexity . Topics covered in this course are analyzing and designing algorithms (sorting algorithms), complexity types and analysis, recurrence equations iteration methods , heap property function and operations, search algorithms, raph concepts and operations, general greedy method., branch & bound algorithms, dynamic programming and string and pattern matching. Hands-on experience is provided through a series of exercises, assignments, and projects.