

## Faculty of Computers and Information Technology

### Analysis and Design of Algorithms

#### Information :

**Course Code :** CSC312

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

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

#### Instructor Information :

Title	Name	Office hours
Professor	Gamal Abdel Shafy Ibrahim AlAzab	
Associate Professor	Wael Zakaria Abdallah Mohammed	2
Teaching Assistant	Farah Ashraf Wafaa Mahmoud	
Teaching Assistant	Basant Medhat Makram Wahba	
Teaching Assistant	Sohaila AbdElazim Khalifa Gabr	
Teaching Assistant	Mohamed Hamdy Abdallah Ismail Saknh	
Teaching Assistant	Fatmaelzahra Hamdi Abdallah Mohamed	
Teaching Assistant	Yasmina Mohamed Nasr Abdel Latif Eldafrawy	

#### Description :

The course provides the fundamentals 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, graph 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.