



Benha University

# Advanced Algorithms CES 608

Computer Systems Engineering  
Electrical Engineering Department



Faculty of Engineering  
(at Shoubra)

- Course Title:** Advanced Algorithms
- Course Code:** CES 608
- Course Page:** <http://www.bu.edu/eg/staff/islam.elshaarawy-courses/12945>
- Instructor:** Dr. Islam ElShaarawy (<http://www.bu.edu/eg/staff/islam.elshaarawy>)
- Main Textbook:** Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein. *Introduction to Algorithms*. 3<sup>rd</sup> Edition, The MIT Press, 2009, ISBN 978-0262033848.
- Other Resources:**
- <http://mitpress.mit.edu/content/algorithms> 
- <https://www.khanacademy.org/computing/computer-science/algorithms> 

## Course Contents:

1. Introduction to Algorithms and Data Structures
2. Randomized Algorithms
3. Approximation Algorithms
4. Greedy Algorithms
5. Amortized Analysis
6. Dynamic Programming
7. Network Optimization
8. Linear Programming
9. String Algorithms
10. Computational Geometry
11. Multithreaded Algorithms

## Attendance Policy:

1. Attendance is expected.
2. **Reading the relevant chapter(s) ahead of lectures is essential.**
3. Whether you attend or not, you are responsible for keeping track of whatever happens during the lectures.
4. **Leaked solution manual as well as any other resources (unless otherwise specified) should never be used for solving the assignments.**
5. Side talking, cellphones, laptops, food/drinks, and walking<sup>1</sup> are not allowed.



## Grading System:

<b>Attendance<sup>2</sup>:</b>	000
<b>Assignments:</b>	020
<b>Quizzes:</b>	020
<b>Midterm Exam:</b>	030
<b>Project(s):</b>	020
<b>Final Exam:</b>	210
<b>Total</b>	300

<sup>1</sup> If you are late for the lecture, then you are allowed to walk into the lecture hall but quietly.

<sup>2</sup> Attendance will be taken anyway.