20th Feb 2024

Data structure and algorithm course

# **Teaching staff**

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# **Description**

This module will introduce the principal fundamental data structures and algorithms used in computer science. Data structures will be formulated to represent information in such a way that it can be conveniently and efficiently manipulated by the algorithms that are developed. The ideas will be presented abstractly, although code examples will be shared in the course GitHub repo mentioned bellow.

# **Objectives**

At the completion of this course, students will be able:

1. To design algorithms and implement popular algorithms data structure.
2. To gain knowledge on how to create their own algorithm and evaluate its performance.
3. To learn the concept of sorting, graphs and hash tables

# **pre-request**

* Familiarity with Python and c++ at a level sufficient to write an object-oriented program

# **Resources**

* Data structure and algorithms 3th edition by j.bullinaria at Birmingham.
* DATA STRUCTURES THE FUN WAY by Jeremy Kubica
* Hands-On Data Structures and Algorithms with Python by Dr. Basant Agarwal.

# **grading policy**

1. Mid-term 30
2. Final 30
3. Assignments 10
4. Oral 30

# **Classes and meetings**

1. Tuesday 10:40 – 12:20
2. Wednesday 7:00 – 10:00am