DS301 Aug 2:0

Bioinformatics

Instructor

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Department: Computational and Data Sciences

Course Time: 18:00-19:00

Lecture venue: CDS #202

Detailed Course Page:

Announcements

Brief description of the course

The course teaches the basic concepts in Bioinformatic Data Analysis, covering sequence, structure, function, dynamics and interaction related topics to guide students to interpret biological phenomenon from computational approaches. DNA, RNA, Proteins are the main biological molecules that are covered for analysis. The course is suitable to beginners who have good background in Physics, Chemistry and Mathematics. Knowledge in Biology is advantageous but not essential.

Prerequisites

Basics of Math, Physics, Chemistry at the undergraduate level.

Syllabus

Basics of computers, alignment of sequences, analysis and modelling of structures, molecular dynamics, docking, methods to assess molecular function, find functional linkages, computational methods in genomics, proteomics and metabolomics.

Course outcomes

Ability to understand the biological problem at hand and device appropriate computational/bioinformatic

strategies to solve it and interpret the results.

Grading policy

25% for first exam, 25% for assignment and 50% for the final exam

Assignments

Resources