2018 KAIST INTERNATIONAL
SUMMER SCHOOL

BiS438: Bioinformatics (Edu 3.0 course)

Class Time	MTWTh 14:00 – 17:00
Location	To be announced
Credit	3
Instructor	Professor Dongsup Kim (kds(at)kaist.ac.kr) Tel. 042-350-4317
Required Materials	Textbook: "Bioinformatics and Functional Genomics", 3rd edition, Jonathan Pevsner, 2015, John Wiley & Sons

Course Summary

This is an introductory course of bioinformatics for undergraduates. In this course, students will learn how to extract and analyze biological information and how to design and solve new biomedical research projects by using bioinformatics methods. Under the philosophy of Edu 3.0, this course will provide various on-line study materials, and promote creative and cooperative problem solving ability. Students will have a chance to build their own problem solving strategy for real-world problems.

★ Subjects in this lecture :

1) Course overview and introduction to bioinformatics
2) Biological sequence analysis
3) Biological structure analysis
4) Proteome analysis
5) Genome analysis
6) Transcriptome analysis
7) Biological network analysis
8) Computational drug development
9) Machine learning methods
10) Applications
    A. Protein structure and function prediction
    B. Disease gene prediction
    C. Disease-causing mutations
    D. Drug target prediction
    E. Precision medicine
    F. And more…

Course Evaluation

Quiz: Short quiz testing basic knowledge on subject of the week, 30%
Participation and presentation: Performing and presenting mini-projects, 20%
Report: Short report for mini-project, 20%
Final Project: Designing and solving own final project, 30%

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