Introduction to Information Technology 2

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1. Course Description

This class will provide an essential background and basic techniques on Information Technology for Biosciences.

This course introduces spreadsheet program (EXCEL), software for draw and edit chemical structures (Symyx Draw), molecular graphics visualisation (Raswin), database and/or web-tool analysis (PDB, NCBI,DDBJ,CLUSTALW).

Covered topics include software of life science, sequence, structure and function databases of DNA and protein molecules, advanced sequence, and structure alignment methods.You can acquire knowledge and ability of DP2, DP3, and DP4.

2. Course Objectives

The aims of this course are to
1. obtain basic knowledge and techniques about experimental data processing and analysis.
2. be able to draw and edit chemical structures using software.
3. be able to use Raswin to aid in the analysis and visualization of molecular graphics.
4. be able to understand and explain basic bioinformatics.

At the end of the course, students are expected to write report/thesis/scientific paper and give an oral presentation.

3. Grading Policy

This is a hands-on, project-oriented class.
Grading will be decided based on progress report,take-home examination, and practical test.
No final exams will be given.

4. Textbook and Reference

Textbook
A handout and resources will be provided throughout the course as needed.

5. Requirements(Assignments)

To Be Announced.

6. Note

7. Schedule

[1]	General introduction of Information technology
[2]	Spreadsheet program 1; Basics of least squares method
[3]	Spreadsheet program 2; Practice of least squares method
[4]	Draw and edit chemical structures 1; Basic techniques 1
[5]	Draw and edit chemical structures 2; Basic techniques 2
[6]	Draw and edit chemical structures 3; Lactam antibiotics
[7]	Draw and edit chemical structures 4; Natural organic compounds
[8]	Molecular Graphics Visualization 1; Installation of raswin
[9]	Molecular Graphics Visualization 2; Basics of raswin
[10]	Molecular Graphics Visualization 3; Protein Data Bank
[11]	Molecular Graphics Visualization 4; Practical Test
[12]	Bioinformatics webtool 1; NCBI, DDBJ
[13]	Bioinformatics webtool 2; CLUSTALW, Practical Test
[14]	Presentation software 1; Basic techniques, preparation for presentation.
[15]	Presentation software 2; Presentation