

Course: Microarray Data Analysis**Instructor: Ka-Lok Ng****Course description**

This course covers the following topics: sequence alignment, dynamics programming, NCBI database, gene annotation, gene prediction, molecular phylogenetics, protein structure, and RNA structure.

References

Microarray Gene Expression Data Analysis
Causton H, Quackenbush J. and Brazma A.
Blackwell Publishing

A biologist's guide to analysis of data microarray data
Knudsen S.
John Wiley

Course Schedule

Introduction - RNA expression

Experimental design, image processing

Microarray databases

Data normalization, filter and analysis

Statistical analysis of gene expression data

Clustering methods

Gene regulatory networks

Test of hypothesis

Mid-term exam.

Normal distribution

Shanon entropy

t-test, Chi-square test

F-test, ANOVE test

Gene Ontology Annotation

Final exam. or student presentation

Final exam. or student presentation

Final exam. or student presentation

Course evaluation

Passing score for graduate course is 70. In general, score is allocated between class attendance, homework, mid-term written exam, final written exam and student oral presentation. Course instructor reserves the right to adjust the grading scheme.