生物信息学
（Bioinformatics）

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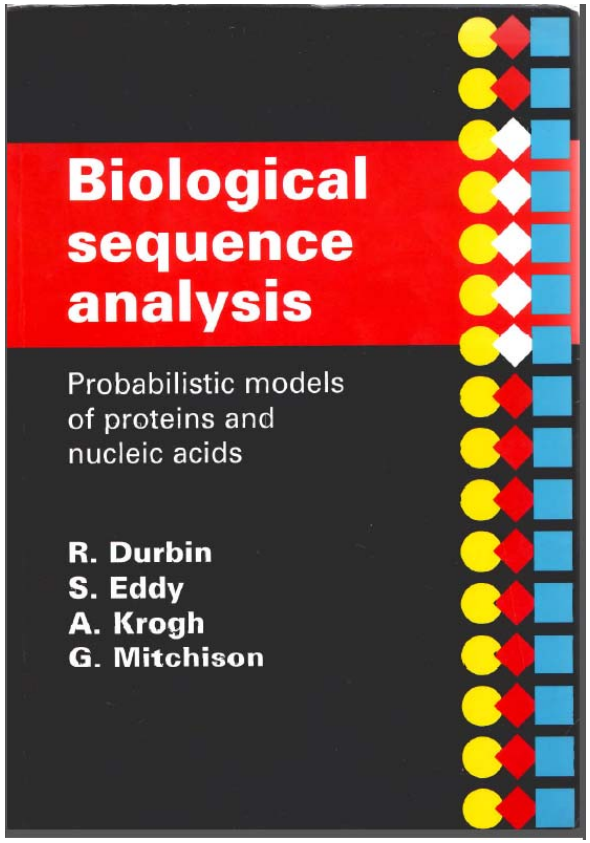
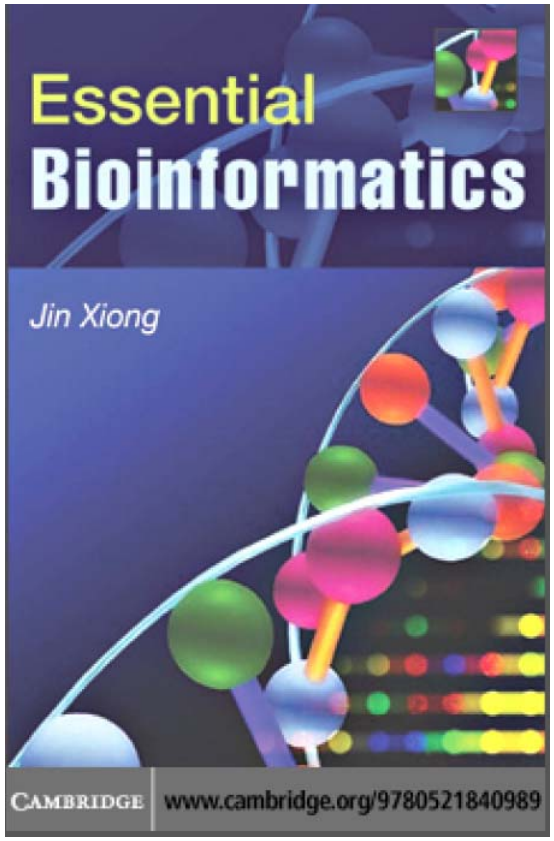
Textbooks





These books can be downloaded at the course website:
https://yanglab.nankai.edu.cn/teaching/bioinformatics

Grade evaluation

- Team project (40%)
- Team presentation (10%)
- Exam (50%)

Note: 2-3 students in each team

注：

1. 本课程的本科生分小组学习（包括作业和报告），请自行组合2-3人一组。研究生一人一组。
2. 共3次作业，每3-4周交一次。作业交给助教，之后我会公布助教联系方式。
3. 每个小组大约有1次报告。
4. 考试为闭卷，估计课程结束后一周考试。

What is Bioinformatics?

Bioinformatics is an interdisciplinary field that develops methods and software tools for understanding biological data. As an interdisciplinary field of science, bioinformatics combines computer science, statistics, mathematics, and engineering to analyze and interpret biological data.

https://en.wikipedia.org/wiki/Bioinformatics

Journals

Bioinformatics, PLOS Computational Biology, Nucleic Acids Research

Briefings in Bioinformatics, Journal of Chemical Information and Modeling, BMC Bioinformatics, IEEE/ACM TCBB,…

Nature Methods, Nature Biotechnology, Nature Genetics, Nature Communication, Molecular Biology and Evolution, Genome Research, Genome Biology, Cell, Nature, Science (CNS), PNAS, …

Content

1. Bioinformatics databases
2. Sequence alignment and database searching
3. Phylogenic tree and multiple sequence alignment
4. Protein structure alignment
5. Protein structure prediction
6. Sequencing data analysis