TIGP Bioinformatics Program
Biological Computing (C1)
Fall 2026 Syllabus

Latest syllabus: https://tigpbio.programs.sinica.edu.tw/

Place: Room 308, Institute of Statistical Science, Academia Sinica
Time: Friday 14:00-17:00
Chair: Dr. Huai-Kuang Tsai (hktsai@iis.sinica.edu.tw)
Aim: The aim of the course is to link issues in computer science to biology and thus capture the interest of students in both areas. It is expected that students will acquire and retain important knowledge about computational biology.
Outline: The course provides an introduction to the basic computational concepts and methods used in molecular biology and genetics. It covers classic algorithmic techniques (for examples: divide and conquer algorithm, dynamic programming …), data structures (e.g. queue, tree…), and common computational problems in biology (such as motif finding, sequence alignment …). In addition, Bioinformatics approaches for next generation sequencing and the most up-to-date technology will be addressed as well.
Textbook/Reference book: N/A

TA: Thi Huong Giang Pham **Email:** huonggiangpham236@gmail.com
Office hours: Monday, 1:00 pm-3:00 pm
Office location: https://meet.google.com/pzq-umkt-yan

Grades: Midterm exam 50%. Final exam 50%.

【For Non-BP student】

For Non-BP student to register/sit-in any BP course, it is required to gain course chair's permission:
(1) Basic Enrollment Information form https://forms.gle/oK7vJzzrx9EvybbT9
(2) TIGP-BP Course Registration Consent Form
https://tigpbio.programs.sinica.edu.tw/index/TIGP%20Bioinformatics_Class%20Registration%20Consent%20Form.docx
※ Deadline: **the 4th week** of each semester.
※ Signature of the course chair should be collected before submission. Incomplete form will not be accepted.
※ Course grade will NOT be given (even class enrollment is completed at school) if fail to follow the above procedures.

Week	Date	Topics/Brief Description	Lecturers	Evaluation Method:	Email
1	2026/9/9 (Wed) 9:00-12:00	Analysis of Algorithms	Dr. Jia-Ming Chang	Take-home exam with a specified deadline	chang.jiaming@gmail.com
1	2026/9/9 (Wed) 14:00-17:00	Recurrence	Dr. Jia-Ming Chang		
2	2026/9/18	Class rescheduled to 9/9.	--	--	--
3	2026/9/23 (Wed) 14:00-17:00	Introduction to Data Structure (I)	Dr. Yu-Jung Chang	In-class exam on midterm exam date	abner.yjchang@gmail.com
3	2026/9/25	Class rescheduled to 9/23. Holiday—Mid-Autumn Festival (no class)	--	--	--
4	2026/10/2	Introduction to Data Structure (II)	Dr. Yu-Jung Chang	In-class exam on midterm exam date	abner.yjchang@gmail.com
5	2026/10/7 (Wed) 14:00-17:00 (No in-person class)	Algorithmic Techniques (Pre-recorded Video) Online Q&A Session: TBA	Dr. Chen-Ching Lin	Take-home exam with a specified deadline	chenching.lin@nycu.edu.tw
5	2026/10/9	Class rescheduled to 10/7. Make-up Holiday for Double Tenth Day (no class)	--	--	--
6	2026/10/16	Sequence alignment	Dr. Emily Chia-Yu Su	Take-home exam with a specified deadline	emilysu@nycu.edu.tw
7	2026/10/23	Review Week (no class)	--	--	--
8	2026/10/30	Midterm Exam	--	--	--
9	2026/11/2 (Mon) 9:00-12:00 Online Only	Introduction to Data Mining	Dr. Henry Horng-Shing Lu	Take-home exam with a specified deadline	henryhslu@nycu.edu.tw
10	2026/11/13 (No in-person class)	Databases: An Overview (Pre-recorded Video) Online Q&A Session: TBA	Dr. Yufeng Jane Tseng	Take-home exam with a specified deadline	yjtseng@csie.ntu.edu.tw
11	2026/11/20 Online Only	Fundamentals of Molecular Evolution and Phylogenetic Tree Construction	Dr. Jinn-Jy Lin	Take-home exam with a specified deadline	jinnjy@gmail.com
12	2026/11/27	The Analysis of Next Generation Sequencing Data	Dr. Hsin-Nan Lin	In-class exam on midterm exam date	arith@gate.sinica.edu.tw
13	2026/12/4	Structural Bioinformatics	Dr. Chen-Hsin Yu	Take-home exam with a specified deadline	albertchyu@gate.sinica.edu.tw
14	2026/12/8 (Tues) 14:00-17:00	Computational Proteomics	Dr. Ching-Tai Chen	In-class exam on midterm exam date	ctchen@utaipei.edu.tw
15	2026/12/18	Review Week (no class)	--	--	--
16	2026/12/23 (Wed) 14:00-17:00	Final Exam	--	--	--
16	2026/12/25	Midterm Exam rescheduled to 12/23. Holiday—Constitution Day	--	--	--