

TIGP Bio 2026 Spring Syllabus

Basic Molecular Biology II (B2)

For the latest syllabus, please visit the BP website: <https://idv.sinica.edu.tw/tigpbio/>

Place: Room 308, Institute of Statistical Science, Academia Sinica

Time: Tuesday 09:00-12:00

Chair: Dr. Ho-Ming Chen (homming@gate.sinica.edu.tw)

Aim: Introduce key concepts and methods to manage, integrate and analyze bio big data in the era of post-genomics life sciences

Outline: Big Data in Bioinformatics - From Data-Driven Analysis to Knowledge

Textbook: (Reference books, not required)

1. Scalable Big Data Analytics for Protein Bioinformatics [Publisher: Springer; 1st ed. 2018 edition (September 26, 2018)]

2. Computational Intelligence and Big Data Analytics: Applications in Bioinformatics [Publisher: Springer; 1st ed. 2019 edition (September 9, 2018)]

3. Big Data in Omics and Imaging [Publisher: Chapman and Hall/CRC; 1 edition (June 19, 2018)]

4. Big Data Analytics in Genomics [Publisher: Springer; Softcover reprint of the original 1st ed. 2016 edition (April 25, 2018)]

TA: N/A (Please refer to the lectures respectively shall you have any questions for each class)

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/oK7vJzrx9EvybbT9>

(2) TIGP-BP Course Registration Consent Form

https://idv.sinica.edu.tw/tigpbio/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 procedures.

Week	Date	Topics/Brief Description	Lecturers	Evaluation Method	Email
1	2026/2/24 @Google Meet Only	Genomics and Genome Analysis	Dr. Ueng-Cheng Yang	Take-home exam with a specified deadline: ▶2026/3/10	uyang@nycu.edu.tw
2	2026/3/3 @Google Meet Only	Metabolomics	Dr. Yufeng Jane Tseng	Take-home exam with a specified deadline: ▶2026/3/17	yjtseng@csie.ntu.edu.tw
3	2026/3/10 @Google Meet Only	Epigenomics	Dr. Jer-Young Lin	Take-home exam with a specified deadline: ▶2026/4/2	jeryoung@gate.sinica.edu.tw
4	2026/3/17	Comparative and Evolutionary Genomics	Dr. Chuan Ku	Take-home exam with a specified deadline: ▶2026/4/1	chuanku@gate.sinica.edu.tw
5	2026/3/24	Metagenomics	Dr. Sen-Lin Tang	Take-home exam with a specified deadline: ▶2026/4/30	sltang@gate.sinica.edu.tw
6	2026/3/31	Microbiome	Dr. Sen-Lin Tang		
7	2026/4/7	Review Week (no class)	--	--	--
8	2026/4/14	Midterm Exam (take-home exams, no in-class exam)	--	--	--
9	2026/4/21	Population Genomics	Dr. Jen-Pan Huang	Take-home exam with a specified deadline: ▶ 2026/5/5, at 5:00 PM	jphuang@gate.sinica.edu.tw
10	2026/4/27 (Mon) 14:00-17:00	Structural Bioinformatics	Dr. Lee-Wei Yang	Take-home exam with a specified deadline: ▶2026/5/21	lwyang@life.nthu.edu.tw
10	2026/4/28	Class rescheduled to 4/29	--	--	--
10	2026/4/29 (Wed) 9:00-12:00 @Google Meet Only	Medical Genomics	Dr. Tai-Ming Ko	Take-home exam with a specified deadline: ▶2026/5/20	taiming23@gmail.com
11	2026/5/5	Class rescheduled to 5/19	--	--	--
12	2026/5/12	Introduction of Proteomics	Dr. Chuan-Chih Hsu	In-class exam on final exam date	cchsu@gate.sinica.edu.tw
13	2026/5/19	Transcriptomics	Dr. Hung-Hsin Chen	Take-home exam with a specified deadline: ▶2026/6/12	hunghsinchen@ibms.sinica.edu.tw
14	2026/5/26	High throughput image analysis	Dr. Jian-Geng Chiou	Take-home exam with a specified deadline: ▶2026/6/9	jchiou@gate.sinica.edu.tw
15	2026/6/2	Review Week (no class)	--	--	--
16	2026/6/9	Final Exam	--	--	--