

TIGP Bio 2023 Spring Syllabus
Basic Molecular Biology II (B2)

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

Place: Room 308, Institute of Statistical Science, Academia Sinica
Time: Tuesday 09:00-12:00
Chair: Dr. Ho-Ming Chen (homing@gate.sinica.edu.tw), Dr. Sen-Ling Tang (sltang@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, 2016)]
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/dbthaUe77GeNziNw5>)
- (2) TIGP-BP Course Registration Consent Form (<http://bit.ly/3ubl2Bs>)

※ 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	2023/2/14 @Webex Only	Genomics and Genome Analysis	Dr. Ueng-Cheng Yang	HW with a specified deadline: ▶ April 18th	uyang@nycu.edu.tw
2	2023/2/21	NGS Analytics - Comparative and Evolutionary Genomics	Dr. I-Sheng Tsai	In-class exam on midterm date	ijtsai@gate.sinica.edu.tw
3	2023/2/28	Holiday--228 Memorial Day (no class)	--	--	--
4	2023/3/7	Proteomics Informatic	Dr. Victor Ng	HW with a specified deadline: ▶ April 7th	wailap.ng@gmail.com
5	2023/3/14 @Auditorium, B1F	Genome Assemblies and Annotations	Dr. I-Sheng Tsai	In-class exam on midterm date	ijtsai@gate.sinica.edu.tw
6	2023/3/21	Microbiome	Dr. Sen-Lin Tang	HW with a specified deadline: ▶ April 25th	sltang@gate.sinica.edu.tw
7	2023/3/28	Metagenomics	Dr. Sen-Lin Tang		sltang@gate.sinica.edu.tw
8	2023/4/4	Holiday--Children's Day (no class)	--		
9	2023/4/11	Midterm Exam	--		
10	2023/4/18	Medical Genomics	Dr. Ling-Hui Li	HW with a specified deadline: ▶ May 30th	lli@ibms.sinica.edu.tw
11	2023/4/25	Population Genomics	Dr. John Wang	HW with a specified deadline: ▶ May 9th	johnwang@gate.sinica.edu.tw
11	2023/4/26(Wed) 14:00-17:00	Transcriptome Informatics	Dr. Ho-Ming Chen	HW with a specified deadline: ▶ 23:00 pm, May 15th	homing@gate.sinica.edu.tw
12	2023/5/2	Structural Bioinformatics in Pharmacogenomics	Dr. Jung-Hsin Lin	HW with a specified deadline: ▶ June 8th	jhlin@gate.sinica.edu.tw
13	2023/5/9 @Webex Only--Video	Systems biology and biological modeling	Dr. Yu-Chao Wang	HW with a specified deadline: ▶ May 30th	yuchao@nycu.edu.tw
14	2023/5/16 @Webex Only	Precision medicine and clinical informatics	Dr. Ueng-Cheng Yang	HW with a specified deadline: ▶ June 2nd	uyang@nycu.edu.tw
15	2023/5/23	Review Week (no class)	--		
16	2023/5/30	Final Exam	--		