

## TIGP Bio 2025 Spring Syllabus

### Basic Molecular Biology II (B2)

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

<b>Place:</b> Room 308, Institute of Statistical Science, Academia Sinica
<b>Time:</b> Tuesday 09:00-12:00
<b>Chair:</b> Dr. Ho-Ming Chen (homing@gate.sinica.edu.tw)
<b>Aim:</b> Introduce key concepts and methods to manage, integrate and analyze bio big data in the era of post-genomics life sciences
<b>Outline:</b> Big Data in Bioinformatics - From Data-Driven Analysis to Knowledge
<b>Textbook:</b> (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)]
<b>TA:</b> N/A (Please refer to the lectures respectively shall you have any questions for each class)
<b>Grades:</b> 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://idv.sinica.edu.tw/tigpbio/index/TIGP%20Bioinformatics\\_Class%20Registration%20Consent%20Form.docx](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	2025/2/18	Class rescheduled to 2/24.	--	--	--
2	<b>2025/2/24 (Mon)</b> 9:00-12:00 @Webex Only	Genomics and Genome Analysis	Dr. Ueng-Cheng Yang	Take-home exam with a specified deadline: ▶ <b>March 10th</b>	uyang@nycu.edu.tw
2	2025/2/25	Genome Assemblies and Annotations	Dr. Isheng Jason Tsai	In-class exam on midterm exam date	ijtsai@gate.sinica.edu.tw
3	2025/3/4	Epigenomics	Dr. Pao-Yang Chen	In-class exam on midterm exam date: 【open-book】	paoyang@gate.sinica.edu.tw
4	2025/3/11	Comparative and Evolutionary Genomics	Dr. Isheng Jason Tsai	In-class exam on midterm exam date	ijtsai@gate.sinica.edu.tw
5	2025/3/18	Microbiome	Dr. Sen-Lin Tang	Take-home exam with a specified deadline: ▶ <b>April 30th</b>	sltang@gate.sinica.edu.tw
6	2025/3/25	Metagenomics	Dr. Sen-Lin Tang		
7	2025/4/1	Review Week (no class)	--	--	--
8	2025/4/8	Midterm Exam	--	--	--
9	2025/4/15	Population Genomics	Dr. Jen-Pan Huang	Take-home exam with a specified deadline: ▶ <b>5:00 PM, May 2nd</b>	jphuang@gate.sinica.edu.tw
10	<b>2025/4/23 (Wed)</b> 9:00-12:00 @Webex Only	Medical Genomics	Dr. Tai-Ming Ko	Take-home exam with a specified deadline: ▶ <b>May 14th</b>	taiming23@gmail.com
11	2025/4/29	Transcriptomics	Dr. Hung-Hsin Chen	Take-home exam with a specified deadline: ▶ <b>May 26th</b>	hunghsinchen@ibms.sinica.edu.tw
12	2025/5/6	Proteomics Informatics	Dr. Chuan-Chih Hsu	In-class exam on final exam date	cchsu@gate.sinica.edu.tw
13	2025/5/13	Structural Bioinformatics	Dr. Lee-Wei Yang	Take-home exam with a specified deadline: ▶ <b>May 29th</b>	lwyang@life.nthu.edu.tw
14	<b>2025/5/20</b> @Google Meet Only	Metabolomics	Dr. Yufeng Jane Tseng	Take-home exam with a specified deadline: ▶ <b>June 3rd</b>	yjtseng@csie.ntu.edu.tw
15	2025/5/27	Review Week (no class)	--	--	--
16	2025/6/3	Final Exam	--	--	--