

## TIGP Bio 2022 Spring Syllabus

### Basic Molecular Biology II (B2)

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

**Place:** Room 107, New Building of the Institute of Information 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, 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 (<http://bit.ly/3g22mfl>)
- (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 above procedures.

Week	Date	Topics/Brief Description	Lecturers	Evaluation Method
1	<a href="#">2022/2/15</a> <a href="#">@Webex</a>	Genomics and Genome Analysis	Dr. Ueng-Cheng Yang	HW with a specified deadline
2	2022/2/22	NGS Analytics - Comparative and Evolutionary Genomics	Dr. I-Sheng Tsai	HW with a specified deadline
3	2022/3/1	Microbiome	Dr. Sen-Lin Tang	HW with a specified deadline
4	2022/3/8	Proteomics Informatic	Dr. Victor Ng	HW with a specified deadline
5	2022/3/15	Genome Assemblies and Annotations	Dr. I-Sheng Tsai	HW with a specified deadline
6	2022/3/22	Transcriptome Informatics	Dr. Ho-Ming Chen	HW with a specified deadline
7	2022/3/29	Review Week (no class)	--	
8	2022/04/05 (Holiday)	Holiday--Tomb Sweeping Day (no class)	--	
8	2022/4/6 (Wed) <a href="#">@O108</a>	Midterm Exam (take-home exams, no class)	--	
9	<a href="#">2022/4/12</a> <a href="#">14:00-17:00 @N101</a>	Metagenomics	Dr. Sen-Lin Tang	HW with a specified deadline
10	<a href="#">2022/4/19</a>	Medical Genomics	Dr. Ling-Hui Li	HW with a specified deadline
11	<a href="#">2022/4/26</a>	Population Genomics	Dr. John Wang	HW with a specified deadline
12	<a href="#">2022/5/3</a> <a href="#">@Webex</a>	Structural Bioinformatics in Pharmacogenomics	Dr. Jung-Hsin Lin	HW with a specified deadline
13	<a href="#">2022/5/13 (Fri)</a> <a href="#">@Webex</a>	From Data-Driven Analysis to Knowledge	Dr. Yu-Chao Wang	HW with a specified deadline
14	<a href="#">2022/5/17</a> <a href="#">@Webex</a>	Precision medicine and clinical informatics	Dr. Ueng-Cheng Yang	HW with a specified deadline
15	2022/5/24	Review Week (no class)	--	
16	2022/5/31	Final Exam (take-home exams, no class)	--	