

**TIGP Bioinformatics Program
Programming (Python) (P1)
Fall 2026 Syllabus**

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

Place: Room 308, Institute of Statistical Science, Academia Sinica
Time: Friday 10:00-12:00
Chair: Dr. John Wang (johnwang@gate.sinica.edu.tw)
Outline: This course introduces basic aspects of programming language and its application in bioinformatics. First, fundamental programming techniques in Python are introduced. After that, this course focuses on the practical implementation of programs to analyze various biological data. The use of existing available resources from the Internet is also incorporated. Finally, the students implement bioinformatics projects (i.e., motif finding, pattern matching, sequence alignment, biomedical database analysis, etc.)
Textbook:
 Python for Biologists: A complete programming course for beginners (Martin Jones)
 Advanced Python for Biologists (Martin Jones)
 (Reference) Python for Everybody - Exploring Data In Python 3 (Charles Russell Severance)
TA: Ya-Chu Hsu **Email:** j8675423@gmail.com
Office hours: Friday 12:00 pm-2:00 pm
Office location: Room 308, Institute of Statistical Science, Academia Sinica
Grades: Midterm exam 25%. Final exam 30%. Homework 35%. Class performance 10%.

【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://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 (Midterm/Final Exams)	Homework	Email
1	2026/9/11	Introduction to Python	Dr. John Wang	No exam. Points merged with Week 6.	Honor Code Form (no score)	johnwang@gate.sinica.edu.tw
2	2026/9/18	Basic Elements of Python	Dr. Ching-Fen Chang	Take-home exam with a specified deadline	TBA	janechang.stev@gmail.com
3	2026/9/23 (Wed) 10:00-12:00	Basic statements I: branching programs and inputs	Dr. Ching-Fen Chang	Take-home exam with a specified deadline	TBA	janechang.stev@gmail.com
3	2026/9/25	Class rescheduled to 9/23. Holiday—Mid-Autumn Festival (no class)	--	--	--	--
4	2026/10/2	Basic statements II: iterative programs	Dr. Jen-Hung Wang	Take-home exam with a specified deadline	TBA	a04928@tmu.edu.tw
5	2026/10/7 (Wed) 10:00-12:00	Functions: scope rules and passing arguments	Dr. Jen-Hung Wang	Take-home exam with a specified deadline	TBA	
5	2026/10/9	Class rescheduled to 10/7. Make-up Holiday for Double Tenth Day (no class)	--	--	--	--
6	2026/10/16	Modules, Files, and Exception Handling	Dr. Te-Chuan Chiu	Take-home exam with a specified deadline	TBA	theochiu@cs.nthu.edu.tw
7	2026/10/23	Review Week (no class)	--	--	--	--
8	2026/10/30	Midterm Exam (take-home exams, no in-class exam)				
9	2026/11/6	Regular expressions	Dr. Yi-Ju Lee	In-class exam on the final exam date	TBA	yijulee@stat.sinica.edu.tw
10	2026/11/13	Object-oriented programming: classes	Dr. Yi-Ju Lee	In-class exam on the final exam date	TBA	
11	2026/11/20	Introduction to Biopython	Dr. Ching-Fen Chang	Take-home exam with a specified deadline	TBA	janechang.stev@gmail.com
12	2026/11/27	Data analysis toolbox: NumPy, Pandas, Matplotlib	Dr. Shafique Ahmed	Take-home exam with a specified deadline (Questions to be released on 12/11)	TBA	shafique@as.edu.tw
13	2026/12/4	Machine learning I: scikit-learn	Dr. Shafique Ahmed		TBA	
14	2026/12/11	Machine learning II: scikit-learn & PyTorch	Dr. Shafique Ahmed		TBA	
15	2026/12/18	Review Week (no class)	--	--	--	--
16	2026/12/23 (Wed) 10:00-12:00	Final Exam (take-home exams, no in-class exam)	--	--	--	--
16	2026/12/25	Final Exam rescheduled to 12/23. Holiday—Constitution Day	--	--	--	--