

UIN SUNAN KALIJAGA YOGYAKARTA

FACULTY OF SCIENCE AND TECHNOLOGY

Jl. Marsda Adisucipto Yogyakarta 55281, Telp:+62274519739, Fax:+62274540971, <u>E-mail:</u> fst@uin-suka.ac.id, website: http://saintek.uin-suka.ac.id

Undergraduate Programme in Biology

Telp : +62274 519739

Email : bio@uin-suka.ac.id

Website : https://biologi.uin-suka.ac.id

MODULE HANDBOOK

Module Name	Computa	tional Biology				
Module level, if applicable	Bachelor					
Code, if applicable	BIO42507	<u>77</u>				
Subtitle, if applicable	-					
Courses, if applicable	Computa	tional Biology				
Semester(s) in which the module is	6 th (Sixth					
taught						
Person responsible for the module	Ardyan Pramudya K., S.Si., M.Si					
Lecturer(s)	Ardyan Pramudya K., S.Si., M.Si					
Language	Indonesia					
Relation to curriculum	compulsory course in the first year (2nd semester) Bachelor Degree					
Type of teaching, contact hours	100 minu	tes of lectures, and 120 minutes structured activities per week				
Workload	Total workload is 136 hours per semester, which consists of 100 minutes lectures					
	week for	16 weeks, 120 minutes structured activities per week, 120 minutes individual				
	study per	week, including mid-exam and final exam				
Credit points	3 credits (4,5 ECTS)					
Requirements according to the						
examination regulations						
Recommended prerequisites	No prerequisites are stated on					
Module objectives/intended learning	After completing this course, the students:					
outcomes	CO 1	Able to integrate principles of biology, biological resources,				
		environment, and other relevant knowledge as well as the concept of				
		its application in the field of general and specific biology P (LO 4; (Acts 11, 12)				
	CO 2.	Able to apply the basic principles of software applications, basic				
		instruments, standard methods for analysis and synthesis in general				
		and specific fields of biology carefully; P (LO 5; CP 13)				
	CO 3	Able to integrate relevant theories, materials, methodologies, ethical				
		frameworks and research procedures, as well as Islamic insights and				
		values in the study of biodiversity and conservation appropriately; P				
	60.4	(LO 6; CP 14)				
	CO 4	Examine the implications of the development or implementation of				
		science and technology in accordance with their expertise in a logical, critical, systematic, and innovative manner by applying humanities				
		values based on scientific rules, procedures and ethics in order to				
		produce ideas that are scientifically described in the form of final				
		project reports and uploading them on the university website; KU (LO				
		8; KU 17,				
	CO 5	CO Able to make appropriate decisions in the context of solving				
	problems in their field of expertise based on the results of					
		information and data analysis; KU (LO 9; KU 21)				



UIN SUNAN KALIJAGA YOGYAKARTA

FACULTY OF SCIENCE AND TECHNOLOGY

Jl. Marsda Adisucipto Yogyakarta 55281, Telp:+62274519739, Fax:+62274540971, <u>E-mail:</u> fst@uin-suka.ac.id, website: <u>http://saintek.uin-suka.ac.id</u>/

	CO 6 Able to present solutions in solving biology-related problems through the effective application of relevant biological knowledge, methods and technologies in the management of biological resources and the environment within a specific scope; KK (LO 10; KK 27, 28)							
Content	 Introduction to computational biology Molecular and genomic biology Introduction to programming for biology Bioinformatics and sequence analysis Genomics and Computational Proteomics Ecological modeling and simulation 							
Study and examination requirements and forms of examination	NO 1	Assessmen Final Exami	Weight (percentage)					
	2	Mid-Term E	35%					
	3	Class Activi	25%					
	NO 1 2 3 4 5	er value with Number Value ≥ 95 90-94.99 85-89.99 80-84.99 75-79.99 70-74.99	Letter Value A A- A/B B+ B B-	7 8 9 10 11 12	Number Value 65-69.99 60-64.99 55-59.99 50-54.99 55-34.99 <35	Letter Value B/C C+ C C- D E		
Media employed	White	-board, Lcd P	rojector, e-	learning	(https://darin	g.uin-suka.ad	c.id/)	
Reading list	2. Wü Pro 3. Pev Will 4. Wa and 5. Set Bio 6. Les Uni 7. Bax to 1 8. Shr	d Spring Hark inschiers, R. (cessing and A sner, J. (2015) ley-Blackwell. terman, M. S d Genomes. L ubal, J. C., & logy. Boston: k, A. M. (201 iversity Press kevanis, A. D., the Analysis of	por, NY: Col 2013). Com Analysis with 5). Bioinform 6. (1995). In ondon: Cha Meidanis, J PWS Publi 4). Introduct . & Ouellett of Genes an Dougherty,	d Spring putation the Linux, matics and troduction appman & L. (1997) shing Contion to the E. R., & Z	Harbor Labor nal Biology: A , MySQL, and F nd Functional ion to Comput & Hall/CRC. . Introduction ompany. Bioinformatics F. (Eds.). (2004 ins (3rd ed.). H Zhang, W. (201	atory Press. Practical Intr R. New York: Genomics (3) ational Biolog to Computat s (4th ed.). Ox). Bioinforma loboken, NJ:	rd ed.). Hoboken, NJ: gy: Maps, Sequences ional Molecular	



UIN SUNAN KALIJAGA YOGYAKARTA

FACULTY OF SCIENCE AND TECHNOLOGY

Jl. Marsda Adisucipto Yogyakarta 55281, Telp:+62274519739, Fax:+62274540971, <u>E-mail:</u> fst@uin-suka.ac.id, website: <u>http://saintek.uin-suka.ac.id</u>/

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
CO 1											
CO 2											
CO 3				V					V		
CO 4				V					V		