

Tsuyama College		Year	2021		Course Title	Bioinformatics
Course Information						
Course Code		0120		Course Category	Specialized / Elective	
Class Format		Lecture		Credits	Academic Credit: 2	
Department		Department of Integrated Science and Technology Advanced Science Program		Student Grade	5th	
Term		First Semester		Classes per Week	2	
Textbook and/or Teaching Materials		Textbook: Biology (Tokyo Shoseki) Reference book : Square latest illustration Biology (Daiichi Gakushusha)				
Instructor		MAEZAWA Takanobu				
Course Objectives						
1. To understand the stimulus response of animals 2. To understand the behavior of animals 3. To understand the environmental response of plants 4. To understand the outline of bioinformatics						
Rubric						
	Excellent		Good		Acceptable	Not acceptable
Achievement 1	The student can better explain in detail the stimulus response of animals		The student can explain in detail the stimulus response of animals		The student can explain the stimulus response of animals	The student will not try to explain the stimulus response of animals
Achievement 2	The student can better explain in detail the behavior of animals		The student can better explain in detail the behavior of animals		The student can better explain the behavior of animals	The student will not try to explain the behavior of animals
Achievement 3	The student can better explain in detail the environmental response of plants		The student can explain in detail the environmental response of plants		The student can explain the environmental response of plants	The student will not try to explain the environmental response of plants
Achievement 4	The student can better give a detailed overview of bioinformatics		The student can give a detailed overview of bioinformatics		The student can give a overview of bioinformatics	The student will not try to give a overview of bioinformatics
Assigned Department Objectives						
Teaching Method						
Outline	General or Specialized : Specialized Field of learning : Biology Required, Elective, etc. : Elective Program subjects Foundational academic disciplines : Biology / Basic Biology / Life Sciences Relationship with Educational Objectives : This subject corresponds to the academic objectives of the Department of Comprehensive Science and Engineering, "(2) Acquire basic science and technical knowledge" and "(3) Acquire deep foundation knowledge of the major subject area". Relationship with JABEE programs : The main learning / educational goal of this subject is "(A) Deepening of basic knowledge about technology". Course outline : Trying to understand life information as an electrical signal between cells Trying to understand it as a language of bioinformatics and genetic code I will explain it from the two aspects of bioinformatics.					
Style	Course method : Explain the main points while projecting materials such as figures and tables with a projector or explaining with a board according to the textbook. In a timely manner, issue report assignments that match the content of the lesson, and encourage review and self-study. Grade evaluation method : The scores of the two regular exams are evaluated equally (70%), and the quizzes, reports, and class attitudes up to each regular exam are added to this (30%) and evaluated each time. As a general rule, the first semester grades and intermediate grades are a simple average of all results. Textbooks and notebooks cannot be used for exams.					
Notice	Precautions for taking this course: Since this course is a compulsory course, it is necessary to take it (the number of absent hours is less than one-third of the prescribed number of class hours) at the end of the second grade. Mandatory. Course advice: Instead of memorizing the knowledge of living things, I want you to understand and acquire the mechanism of life phenomena. Foundational subjects : Biology I (1st year) General biology (2), Molecular biology (3), Applied biology (4), Developmental biology (4), Biology experiment (4), Biochemistry (4), Cell biology (4) Related subjects: Chemistry I (2nd year), Chemistry II (3rd), Experiments in Science (2nd), General Biology (2nd), Molecular Biology (3th), Applied Biology (4th), Developmental Biology (4th), Experiments in Biology (4th), Biochemistry (4th), Cell Biology (4th), Bioinformatics(5th) Attendance advice : Adhere to deadlines for report assignments. Late arrivals will be treated as absent after half the class time has passed. If you have any questions about the lecture or anything related to it, please feel free to ask questions and deepen your understanding.					
Characteristics of Class / Division in Learning						
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Course Plan						
			Theme		Goals	
1st Semester	1st Quarter	1st	Guidance and information flow from stimulus acceptance to response		Explain the flow of information from the reception of stimuli to the response.	
		2nd	The nature of neurons and how excitement works		Explain the nature of neurons and how excitement works. Explain cell homeostasis by transporting substances through cell membranes.	

		3rd	Mechanism of stimulus acceptance	Explain the mechanism of stimulus reception. Explain the function of signal transmitters and their receptors.
		4th	Information processing in the central nervous system	Explain information processing in the central nervous system.
		5th	The function of skeletal muscle as an effector	Explain the function of skeletal muscle.
		6th	Animal behavior	Explain the animal behaviors.
		7th	Environmentally responsive plant life and plant hormones, and environmental factors to regulate germination	Explain the life of plants according to the environment.
		8th	1st semester mid-term exam	
	2nd Quarter	9th	Return and commentary of exam answers	
		10th	Regulation of vegetative growth by environmental factors	Explain the regulation of vegetative growth by environmental factors
		11th	Regulation of stomatal opening and closing and regulation of flower bud formation by environmental factors	Explain the regulation of stomatal opening and closing and the regulation of flower bud formation by environmental factors.
		12th	Response to aging, leaf litter, and stress	Explain the response to aging, leaf litter, and stress.
		13th	Bioinformatics 1	Explain how to use various databases. Genome databases can be used to extract the DNA, RNA, and protein structures of specific genes.
		14th	Bioinformatics 2	Explain data processing using biostatistics.
		15th	(1st semester final exam)	
		16th	Return and commentary of exam answers	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	30	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	70	0	0	0	30	0	100
Cross Area Proficiency	0	0	0	0	0	0	0