

**Science 1**

**Earth Science 1 and Life Science 1**

<b>Basic Course Information</b>			
<b>Course Number</b>	01005019	<b>Subject Category</b>	Computatory/GI
<b>Class Format</b>	Lecture	<b>Credit Type and Number of Credits</b>	0.375
<b>Department</b>	Mechatronics	<b>Student Category</b>	Year 1
<b>Period of Study</b>	Semester 1	<b>Classes per Week</b>	3
<b>Required Materials</b>	Earth Science and Life Science		
<b>Instructor</b>	Rattawan Pooddroh		

**Course Objective**

- To gain basic knowledge of Earth Science and Life science which will be necessary for future engineering activities in an environment-friendly and eco-friendly manner.
- To develop students' human skills, such as thinking, explaining, discussing, and collaborating skills, through individuals and group works that are key competencies for global engineers to create something new.

Evaluation/Rubric	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fair)
Achievements 1 : Earth Science 1 1. Overview of the Earth 2. Internal structure and Activity of the Earth	Theoretically understand and explain the contents, Ability to correctly explain the contents.	Only understanding of the basic terms and contents.	Lacks the appropriate knowledge and understanding.
Achievements 2 : Life Science 1 3. Diversity and commonality of life 4. Vegetation on Earth			

**Relationship with Learning Outcomes**

- G(1) Wide knowledge on Science and Engineering and practical ability to apply them to solve problems in the society.**
- G(4) Creativity to make a new value with fusing the knowledge from various fields.**
- G(5) As an engineer, attitude to act with awareness of social roles and responsibility to make a better society.**

**Teaching Method**

<b>Outline:</b>	Students learn basic concepts and principles of Earth Science and Life Science. The worksheets and workbooks are designed to help the students to develop knowledge, problem solving skills and understanding.
<b>Class Format:</b>	Lecture
<b>Please Note :</b>	All materials will be posted on the Google classroom. The students are requested to keep photo copies or files of all submitted material to ensure further study by themselves.

Semester 1	Contents and Method of Course	Goals	Related MCC
1st week	Introduction of Earth science Overview of Earth (1)	1. Understand the relationship between Earth Science and human life.	II-E 1 1
		2. Understand that the earth is one of the planets that make up the solar system and that the Moon is a satellite of the Earth.	II-E 1 2
2nd week	Overview of Earth (2)	3. Explain that the Earth is a planet covered with atmosphere and water.	II-E 1 3
		4. Explain the major landforms of land and seafloor and its formation.	
3rd week	Internal structure and activity of the Earth (1)	1. Understand the internal structure of the earth and explain what are inside.	II-E 1 4
		2. Understand magma formation and volcanic activity.	II-E 1 5
		3. Understand the occurrence of earthquakes and fault movements.	II-E 1 6
4th week	Internal structure and activity of the Earth (2) Wrap-up Quiz	4. Understand plate tectonics, a fundamental theory of geoscience.	II-E 1 7
		5. Understand the features of earthquake activities in the plate boundary and the associated catastrophism.	II-E 1 8
		6. Conclude all contents, 7. Evaluation of students' comprehension.	
5th week	Introduction of life science Diversity and commonality of life (1)	1. Explain the relationship between Life Science and human life.	II-E 1 9
		2. Explain the biodiversity of the earth.	
6th week	Diversity and commonality of life (2)	3. Explain the relationship between the commonality and evolution of living organisms.	II-E 1 10
		4. Explain the common properties of organisms.	II-E 1 11
7th week	Vegetation on Earth (1)	1. Explain the succession of vegetation and its mechanism.	II-E 1 16
		2. Explain biomes in the world and their distribution.	II-E 1 17
8th week	Vegetation on Earth (2) Wrap-up Quiz	3. Explain the horizontal and vertical distribution of biomes in Japan and Thailand.	II-E 1 18
		4. Conclude all contents, 5. Evaluation of students' comprehension.	
9th week	Midterm Exam		
10th week	Return of examination script and reflection		
11-18th week	Chemistry 1		
19th week	Final Examination		
20th week	Return of examination script and reflection		

Do not

	Examination	Quiz	Manual Evaluations between students	Report	Portfolio	Other
Basic Ability	20	20	0		20	
Technical Ability	0	0	0			
Interdisciplinary Ability						

Science 1			
Physics 1	Chemistry 1	Life Science 1	Earth Science 1
50%	20%	12.5%	12.5%