Course Code and Course Title	Thai วทศน ๒๘๑ สะเต็มในชีวิตประจำวันและอาชีพ English SCGI 281 STEM in the Daily Life and Careers
Number of Credits	**2** (2-0-4) (Lecture 2 hours – Laboratory 0 hour/week - Self-Study 4 hours/ week)
Curriculum and Course Type	Program of Study Bachelor's Degree Program in Science and Technology (International Program, Multidisciplinary Program) Course Type Major Course
Course Coordinator	Assoc. Prof. Wannapong Triampo, Ph.D. Address: Department of Physics, Faculty of Science, Mahidol University 272 Rama VI Road, Ratchathewi District, Bangkok 10400, THAILAND Tel. 02-201-5770-1 e-mail: wtriampo@gmail.com, wannapong.tri@mahidol.edu
Semester/Year of Study	Academic Year 2024-25 First Semester (1/2024) /
Prerequisite	None
Co-requisite	None
Day/Time/Study Site Location	Thursday / 13.30-15.30 Faculty of Science, Mahidol University, Salaya Campus (ONLINE)
Date of Latest Revision	July 2024

Course Learning Outcomes (CLOs)

After successful completion of this course, students will be able to:

CLO1: Explain what STEM is and why it is important.

CLO2: Apply STEM to effectively solve problems especially relating to daily life experiences and ca-reers.

CLO3: Create new product(s), or process (es) or principle(s) thru STEM based learning to possibly benefit others.

Course Description

What and Why is STEM?; STEM vs. STEAM; Innovative vs. disruptive technology ; Engineering physics STEM; Food chemistry STEM; Health and medicine STEM; Internet of Things STEM; Artificial Intelligence STEM; Fo-rensic STEM

Credit hours / trimester

Lecture (Hours)	Additional class (Hours)	Laboratory/field trip/internship (Hours)	Self- study (Hours)
30 hours (2 hours x 15 weeks)	-		60 hours (4 hour/ 15 weeks)

Number of hours that the lecture provides individual counseling and guidance

1 hour / week or student requirement during prescribed date and time

Evaluation of the CLOs

Learning Measurement and Evaluation

A. Formative Assessment

Quiz & feedback for all CLOs with weight 40% (of total weight)

B. Summative Assessment

(1) Evaluation Methods and Weight

Course Learning Outcomes	Evaluation Strategies			Weight (%)
	Class Attendance, Participation and Behavior in Class	Written Exam	Class Project Executed without Plagiarism	
CLO1	5%	10%	-	15%
CLO2	5%	10%	-	15%
CLO3	5%	10%	15%	30%
Total	**15%**	**30%**	**15%**	**60%**

Note: Students have the right to request a review of a grade and appeal evaluation decisions

(Mahidol University Disciplinary Measures 2010)

Measurement and evaluation

After completion of the evaluation process each student is assigned a criterion-referenced grade (as shown in the table below). Evaluation and achievement will be justifying according to Faculty and University code, conducted by grading system of A, B+, B, C+, C, D and F. To pass this course, student must earn a grade of a least D.

The **tentative** Grade evaluation

Total Percentage of Evaluation	Below 50	50-54.99	55-59.99	60-64.99	65-69.99	70-74.99	75-79.99	80-100
Grade	F	D	D+	C	C+	B	B+	A

Teaching staff:

Code	Name	Email
WT	Wannapong Triampo R3/1- SC 3 Building N (MUSC-Salaya)	wtriampo@gmail.com, wannapong.tri@mahidol.edu

Teaching Schedule 1st Semester of Academic Year 2024-25

Teaching Plan

Week	Topic	Hours			Teaching methods/ multimedia	Instructor
		Lecture	Lab	Self-study		
1 15Aug	Introduction of the course discipline and class orientation. What and Why is STEM ?	2	0	4	Group discussion Active lecture GBL	Instructor (s) from the faculty of Science, Mahidol University or invited instructor(s)
2 22 Aug	STEM vs. STEAM Innovative vs. disruptive technology	2	0	4	Group discussion Active lecture GBL	
3 24 Aug	Engineering physics STEM	2	0	4	Group discussion Active lecture	
4 29 Aug	Engineering physics STEM	2	0	4	Group discussion Active lecture PBL	
5 5 Sep	Food chemistry STEM	2	0	4	Group discussion Active lecture	
6 12 Sep	Food chemistry STEM	2	0	4	Group discussion Active lecture PBL	
7 19 Sep	Health and medicine STEM	2	0	4	Group discussion Active lecture	
8 26 Sep	Health and medicine STEM	2	0	4	Group discussion Active lecture PBL	
9 3 Oct	**Midterm examination**					
10 10 Oct	Internet of Things STEM	2	0	4	Group discussion Active lecture	Instructor (s) from the faculty of Science, Mahidol University or invited instructor(s).
11 17 Oct	Internet of Things STEM	2	0	4	Group discussion Active lecture PBL	
12 24 Oct	Artificial Intelligence STEM	2	0	4	Group discussion Active lecture Oral presentation	
13 31 Oct	Artificial Intelligence STEM	2	0	4	Active Lecture, Group discussion PBL	
14 7 Nov	Forensic STEM	2	0	4	Active Lecture, Group discussion Case Study	
15 14 Nov	Forensic STEM	2	0	4	Active Lecture, Case study	
16	STEM Project	2	0	4	PBL	

Week	Topic	Hours			Teaching methods/ multimedia	Instructor
		Lecture	Lab	Self-study		
21 Nov						
17 28 Nov	**Final examination**					
	Total hours	30	0	60		