SAMSENWITTAYALAI SCHOOL
ENGLISH PROGRAM

COURSE OUTLINE

Subject: Technology (SC22161)　　　　　**Course Classification**: Additional
Learning Period: 2 Periods/Week (40 Hours)　　**Credit Unit**: 1.0
Grade Level: Mattayomsuksa 2 (Grade 8)　　**Semester** 2 **Academic Year** 2022
Learning Area: Science & Technology　　　**Samsenwittayalai School English Program**
Teacher: *Mr. Donjie Mejia Bardos*

I. COURSE DESCRIPTION

　　　　The course is aimed to study and analyze the basic principles of communicating data and computer networks; the principles and methods of problem solving through information technology processes. Learners search for data and communicate through computer networks morally and ethically; safely construct objects and utensils or methodologies through the technological process by conveying ideas through a three-dimensional sketch or a projected picture, leading to constructing models of objects and utensils, or conveying concepts of the methodology through models, and reporting on results of presenting the methodology.

　　　　By studying and understanding the concept of technology for living in a fast changing society, use knowledge and scientific skill, mathematical skill and others to solve the problem or develop the project creativity by using engineering design process, choose appropriate technology and realize the effects on life, society and environment.

　　　　For applying and using the calculating concept to solve the problem in daily life systematically, use information technology and communication in learning and solve the problem effectively, knowingly and ethically. It enables the students to obtain knowledge, reasonable undertakings, sacrificing, diligence, honesty, patience, creative thinking, appreciation of Thai wisdoms and ability to work with others. The course is designed to encourage the students to become innovative in technology design using the engineering design process.

II.　INDICATORS

1. Learners' reading, analytical thinking and writing skills meet the criteria prescribed by the respective educational institutions.
2. Learners' desirable characteristics meet the criteria prescribed by the respective educational institutions.
3. SC4.1.1 Estimate technological trends by considering the causes or factors affecting the change of technology and comparing, analyzing, choosing the technology and considering the effects on life, society and environment.
4. SC4.1.2 Specify the problem or desire in the local or community, scope the problem, collect the data related to the problems.

5. SC4.1.3 Design the solution by comparing, analyzing and choosing the important data under condition and natural resources, present solution guidelines to audiences, plan the step of solution and continue the step of problem solving.
6. SC4.1.4 Test, evaluate and explain the problems or the mistake occurring under condition framework and find the solutions and present the result.
7. SC4.1.5 Use the knowledge and skill of materials, equipment, tools, mechanisms, electricity and electronics to solve the problem or develop work properly and safely.
8. SC4.2.1 Design the algorithm by using computational thinking to solve the problem or working in daily life.
9. SC4.2.2 Design and programming by using logic and function to solve the problem.
10. SC4.2.3 Discuss the composition and principle of computer system and communication technology for applying to solve the basic problem.
11. SC4.2.4 Use the information technology safely, responsibility, create and present the publishing right.

III. TENTATIVE COURSE OUTLINE

Week	Topic	Indicators	Period(s)
1	Introduction to Design Calculation and Technology	3	2
2	The Importance of Design and Technology	3	2
3	Environmental technology	3	2
4	Analysis of Problem Situations Integrated with Design Software (Photoshop and Illustrator)	3	2
5	Data Collection to Solve the Problem	3	2
6	Analysis of Solutions	3	2
7	Creating Design Alternatives	3	2
8	Principles of Product Design	3	2
9	Creativity and Design	3	2
10	Designing Solutions for Problems	3	2
	MIDTERM EXAMINATION		
11	Drafting the Image	3	2
12	Writing Diagrams	3	2
13	Writing Flowchart	3	2
14	Model Making	3	2
15	Creative Planning and Presentation	3	2
16	Problem Solving on reducing working time	3	2
17	Things to know before creating a work piece	3	2
18	Testing, Evaluation and Improvement of the students work	3	2
19	Presentation of Work	3	2
20	Future Technology	3	2

	FINAL EXAMINATION		

Remarks: The course outline is subject to change as appropriate.

IV. Teaching Methods and Management

☑ Experiment ☑ Lecture/Discussion ☑ Group work
☑ Individual work ☐ Game ☐ Song
☑ Self-learning ☑ Demonstration ☐ Role play
☑ Project ☑ Experience ☑ ICT
☐ Local Wisdom based ☐ Others

V. Teaching Materials/ Supplements

☑ Handouts(soft copy) ☐ Worksheets(Softcopy) ☐ Teacher's text book
☑ Graphs/ Diagrams ☐ Maps ☑ Pictures
☑ Samples/ Models ☑ Exercises
☐ Commercial Text Book
☐ DVD/VCD

- Website
  - https://design-technology.org/
  - http://www.design-technology.info/home.htm
  - https://www.ucas.com/job-subjects/design-technology
  - https://www.data.org.uk/campaigns/what-is-design-and-technology/
  - https://www.schmalz.com/en/vacuum-knowledge/the-vacuum-system-and-its-components/system-design-calculation-example/

☐ Others

VI. ASSESSMENT AND EVALUATION

Indicator / Score from SGS	Formative I			Midterm	Formative II					Final
	1	2			10	11	12	13	14	
Total score	**5**	**5**		**10**	**10**	**10**	**10**	**10**	**20**	
1.Learners' reading, analytical thinking					10					
2. Learners' desirable characteristics						10				
3. SC4.1.1	5			10						
4. SC4.1.2		5								20
5. SC4.1.3							10			
6. SC4.1.4								10		
7. SC4.1.5									20	
Total	**10**			**10**	**60**					**20**

VII. ASSIGNMENT

SGS No.	Score (points)	Assignment	Deadline	Type			Remark
				Test	Individual	Group	
12	5	Project Research Analysis Presentation	3rd week of May 2022		✓		
12	5	Writing Flow Chart and Diagrams	June (3rd week) 2022			✓	
13	10	Model making, Creative Planning and Presentation	July 2022			✓	
MIDTERM	15	Midterm Test	August 2022	✓			
14	20	Design and Calculation Technology Innovation (Working Model)	September 2022			✓	
FINAL	20	Final Test	Week 18	✓			
		Total					