Course Specification

Course Title Science and Mathematics in Daily Life

Course Code 4000112

Semester 1 Academic Year 2020

Bachelor of Arts Programme in Hospitality Management
(International Programme)
School of Tourism and Hospitality Management
Suan Dusit University

Content

Course Specification

Name of institution Suan Dusit University
Campus/faculty/department School of Tourism and Hospitality Management

Section1 General Information

1. Course code and course title

4000112 Science and Mathematics in Daily Life

2. Number of credits

4(2-4-6)

3. Curriculum and type of subject

General Education

4. Responsible faculty members

4.1 Course coordinator Dr.Rungnapa Lertpatcharapong

4.2 Instructors Dr.Rungnapa Lertpatcharapong **Section :** I1
Asst. Prof. Natthakitta Suwannateep

5. Semester / year of study

Semester 1 / Student Year 2

6. Pre-requisite (if any)

None

7. Co-requisites (if any)

None

8. Venue of study

Suan Dusit University

9. Date of latest revision

June, 2020

Section 2 Aims and Objectives

1. Aims of the Course

1.1 Cognitive Theory (Knowledge from learning)

1.1.1 Students can explain the knowledge of science and mathematics and able to use in the life living in daily and support them to be human being completely.

1.1.2 Students can explain the foundation knowledge about social science, humanities, languages, science and mathematics.

1.1.3 Students can apply the knowledge with science and technology with their daily life living.

1.1.4 Students have the skills to seek lifelong knowledge for continuous self-improvement.

1.1.5 Students can have the logical thinking skills and able to explain with logically.

1.1.6 Students can explain the critical thinking, analyzing and problem solving skills.

1.1.7 Students can explain their creative thinking and innovative skills.

1.1.8 Students can explain the needed skills in 21st century.

1.1.9 Students can explain the foundation knowledge related to healthcare.

1.2 Skills (Abilities and skills acquired from learning)

1.2.1 Students are aware of rights, roles and duties as well as understanding, appreciating and respecting the other's rights.

1.2.2 Students have skills of coordination and corporation in team work. A Good leader and good fellowship needed to have good relationship skills for social problem solving such as problem recognition and understanding problem prioritize and solving the problem peacefully

1.2.3 Students have knowledge in using media and information equally.

1.2.4 Students have skills in calculating Numerical and logical analysis.

1.2.5 Students have computer skills and other technology skills for their works and communication.

1.3 Moral (Attitudes, Moral and Ethical derived from learning)

1.3.1 Students have Thai good characterized base on Thai good value characters.

1.3.2 Students know how to save and spend money based on sufficiency economic philosophy.

1.3.3 Students have their thinking skills as Suan Dusit students with love and faith in the university organization, live with honor, striving, dedicated as one union heart, pay attention and attempt to learn and practical. Students have a proper characteristic and show their leader skills with Suan Dusit student's style in all situations in the public properly.

2. Objectives of Course Development/Modification

2.1 To improve the content on the updated time of the situations, communities, societies and globalization.

2.2 To design the course which focused on students learning activities, flexibilities, and complexities which respond to the needs of learners, organizing the learning activities to complete human being, and to be a good graduate who lives well, happy and able to use science knowledge to solve the problem and create the creative society. They also need to understand the changing of technology difference, pros and cons of technology in communities and other society as well.

2.3 To improve the use of media and teaching technology to support student learning and to increase their potential of knowledge of student's communication for their continuing attention to learn more

Section 3: Course Description and Implementation

1. Course Description

Thinking and reasoning, personal finance, data analysis and decision-making, scientific skills and procedures, science and living factors, application of science for health, life quality and environment, information technology advancement, analysis and worthwhile use of information technology, online social media and ways of living in the digital age, and integration of science, mathematics and information technology, to solve everyday problems for benefits of living and working

2. Number of Hours per Semester

Lecture (Hour)	Additional class (Hour)	Laboratory/field trip/internship (Hour)	Self-study (Hour)
30	None	60	90

3. Number of hours that the lecturer provides individual counseling and guidance

3.3.1 Course instructor announces the course instructor's name with phone number and counseling session time on the orientation day.

3.3.2 Students are required to make the appointment in advance to meet their advisor by individual or by group on the appointment time.

3.3.3 Instructor will schedule the counseling session time by individual and by group for 2 hour per week (For interested students only)

Section 4 Development of Students' Learning Outcomes

The Development of Student's learning.

1. Morality and Ethics

1. The Development of Ethics and Moral

1.1 Ethics and Moral Development

Suan Dusit University aims to produce graduates with high moral and ethics principles and practical knowledge for being a good citizen in the society. With high professional ethics and moral, we are aware the sense of society as an important principle factor for entering the labor market by the following as:

1.1.1 Students must be characteristics based on good Thai values and behave themselves on the principle of ethics, love and royalty patriot for the nation, integrity, discipline, law protection, ideally value, gratitude, kind manner, respect and preserve Thai culture and traditions.

1.1.2 know how to saving and live based on the sufficiency economic philosophy

1.1.6 to be Suan Dusit student's unique style which are love and faith in the university, live with honor, commitment, dedication as union, diligent, patient and attention, meticulousness and real knowledge of what is done, good characteristic, leadership and proper behave with Suan Dusit student's style to the public and in all situations as well.

1.2 Teaching strategies for learning development in moral and ethical

1.2.1 Design learning activities by instructors analyzing learning behavior and learning results in moral and ethical. the activities should cover through all distributing responsibility, standards, learning outcomes.

1.2.2 Emphasizing the participation of learners when conduct learning activities by use the sample of case study in the society, guide them how to analyze to develop their thinking skills and able to apply to use in their lives.

1.2.3 Set up a special activities to support their continuing learning development in moral and ethics

1.2.4 give student assignment to complete the one project which reflected to moral and ethics as well as follow up the learning result by individual and by groups.

1.2.5 Instructor must perform as a good model

1.3 Learning Assessment Strategy in moral and ethics

1.3.1 Create assessment tools according to actual conditions by creating Scoring Rubric criteria.

1.3.2 Evaluate student's attendance and on-time assignment submission.

1.3.3 Evaluate student's activities participation and behavioral expressions when collaborative working.

1.3.4 Observing student's behavior when in the classroom.

1.3.5 Evaluating student's responsibilities, Royalty in Thai national, and public spiritual volunteer.

1.3.6 Assessment student's attitude in moral and ethics sides after teaching class completed in each class unit or each semester

2. Knowledge development

2.1 Knowledge Acquire

The knowledge that students receive from studying general education courses will consists of basic knowledge to understand their nature themselves and others in the society. They should have well knowledge of Thai society's changing as well as the world's society, including they can apply the knowledge to enhance human integrity to live in the society. The content of the multi-knowledge from student learning will cover the important factors as follows:

2.1.1 Students will have extensive knowledge to enhance humanity

2.1.2 Students will have the principle of knowledge in science related to social science, humanities, language and science and mathematics

2.1.3 Students can apply to use the scientific and technology knowledge in their life.

2.2 Teaching Strategy for learning development

2.2.1 The student's activities course design by instructor will help to analyze the learning knowledge outcomes based on the responsibility plan which focus on the responsibility plan through the learning standard of curriculum mapping points and design of the learning activities course and suitable for the students.

2.2.2 The using of teaching methodology that focus on students with variety of learning activities in accordance to the learning course content in each course, such as, case study, conversation, group discussion, and class presentation.

2.2.3 Learning from the original workplace, such as, project activities as well as work experience exchanging, or learning from the specialist or guest speaker from the local communities, etc.

2.2.4 Arrange a learning activity which cover all content based on the responsibility plan through the learning standard of curriculum mapping, and give the assignment to work as individual or group team project.

2.2.5 Organize the learning activity to enhance the learning research and support students to search for knowledge and make a conclusion by themselves.

2.3 Assessment Strategy for knowledge of learning

2.3.1 Questions and answers in the classroom during learning

2.3.2 Quizzes after class completed very week

2.3.3 Questions and answers after chapters

2.3.4 Mid-term and final examination

2.3.5 Assessment from the work piece such as reports, projects, and work piece.

2.3.6 Assessment from the learning outcome while occurred during the class's activities in each course

3. Intellectual Skills

3.1 An improvement of Intellectual Skills

A learner who have developed the intellectual skills would have a critical thinking skills process to analyze, distinguish and synthesize the useful concepts to apply using in daily life. Characteristic features that cover intellectual skills are:

3.1.1 lifelong seeking knowledge skills for continuous their self-improvement

3.1.2 overall thinking skills with logical and reasonable

3.1.3 analyze thinking and solving problem skills

3.1.4 creative thinking skills in innovative development

3.1.5 the needed skills in 21st century.

3.1.6 the ability to take care of themselves healthy

3.2 Teaching strategies that develop cognitive skills

3.2.1 Design learning activities by instructors to analyze the learning behavior and learning skill of learner and to cover on the responsibility plan through the learning standard of curriculum mapping and to design learning activities that are appropriate for each course

3.2.2 Arranging the student's activities which required the intellectual skills to apply, such as, project planning, problem solving making decision, generate thinking skills for analyzing and synchronize their though to write a conclusion as report, project, assignment, work piece, etc.

3.2.3 Encourage student's learning which emphasis on system analyze thinking process such as logical thinking, group discussion, class presentation or demonstration, assumption and doing pre-test based on the reliable concepts and references

3.2.4 Arranging the teaching and learning management from the Model sample for summary

3.2.5 Filed Trip

3.3 A learning strategy for intellectual skills assessment

3.3.1 An intellectual skills assessment on the actual student's activities period

3.3.2 A variety of assignment assessment such as reports, projects, or work pieces

3.3.3 Set up the academic project contest

3.3.4 Questions and answers in the classroom during learning

3.3.5 Quizzes after class completed very week

3.3.6 Mid-term and final examination

4. Interpersonal Skills and Responsibility

4.1 Interpersonal skills and responsibilities are their ability to express their role appropriately for living in the society as well as work together with others pleasantly and happy. It should cover the knowledge and skills by the following:

4.1.1 Awareness of their rights, roles, and duties as well as understanding, value appreciating and respecting the rights of others

4.1.3 having cooperation skills and abilities to work as a group team with good leadership, fellowship, and relationship. Acknowledging and understanding by prioritized problems and able to seek the solution for peacefulness.

4.2 Teaching methods

4.2.1 Design the course learning activity by observing the learner's behavior and learning's result in interpersonal skills and responsibilities to cover the responsibility plan through the learning standard of curriculum mapping for proper course learning design of each course.

4.2.2 Teaching arrangement which emphasis on case study in group's activities by set up a problem assumption and role plays

4.2.3 Teaching arrangement by assigning to work in group team and attempt to do group work process with full scarify.

4.2.4 Support the project group's activities and participations which emphasis on helping each other in multicultural society.

4.3 learning assessment strategy for interpersonal skills and responsibilities

4.3.1 group activity participation and team work assessment

4.3.2 observing the student's behavior for their scarify and spiritual volunteer as a team work

4.3.3 Evaluate the results of the project achievement that shows the determination divided roles, responsibilities, volunteerism, sacrifice, dependence and mutual support.

5. Numerical Analysis and Information Technology Skills

5.1 Numerical analysis, communication and information technology skills that need to develop the numerical analysis skills. The communication and use of technology are basic knowledge and ability to use in mathematics as well as the rational analysis for studying

and finding solutions Including using information technology are needed to access knowledge and ability to communicate effectively covers by the following features:

5.1.1 skills to use medias and information technology wisely

5.1.3 skills to calculate, numerical analysis, and logical thinking

5.1.4 computer skills and other technology using for workplace and communications

5.2 Teaching Strategy for learning skills improvement in numerical analysis, communication and use of information technology

5.2.1 Design learning activities course by instructors to analyze the learning behavior and learning results in numerical analysis skills, communication and use of technology to cover on the responsibility plan through the learning standard of curriculum mapping outcomes and to design learning activities that are appropriate for each course

5.2.2 Teaching arrangement which emphasis on numerical analysis, practical thinking based on logical thinking with cause and effects

5.2.3 Organizing the learning activities by creating the stimulated situation events and assign student role play to use their all English learning skills efficiency in communication skills such as reading, writing, speaking and listening skills according to the requirements of Office of the Higher Education Commission.

5.2.4 Focus on using technology in a variety ways to organize learning activities, such as creating communication channels between instructors and learners through online media such as the use of TV on demand, the use of e-learning in the flipped classroom that students can learn and review the lessons on their own both before and after attend to the class with the instructor

5.2.5 To encourage students to use a numerical analysis logical thinking with logical reasoning and data analysis. Speaking and writing communication for doing the report in a variety of contents according to the requirements in the course by using information technology in write a report or project study.

5.2.6 To organize the learning activities that use the STEM Education learning process to encourage the integration of numerical analytical thinking skills for communication and use of technology.

5.3 To use an assessment strategy learning skills in numerical analysis, communication and use of information technology

5.3.1 Questions and answers about the learning lesson while learning in the classroom

5.3.2 Quizzes after class completed very week

5.3.3 Assessment from the project or work piece assigned which use knowledge and skills in numerical analysis, communication and use of complementary technology for creating the project.

Section 5 Teaching and Evaluation Plans

1. **Teaching plan**

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
1	Course Orientation -Scientific process skills -STEM Education	3 3	**Teaching and Learning Activities** -Evaluation Expectation and student learning needs -Clarity the teaching and learning process, make an agreement of work assignment and evaluations -Scientific process skills **Teaching medias** - Learning sheets/ documents TGF. 3 -Textbooks, website for self-study - work sheet, - advisors, telephone contact number and counselling session -WBSC -STEM Education Activity -the presentation of STEM Education Activity	Dr.Rungnapa Lertpatcharapong Asst.Prof. Natthakitta Suwannateep
2-5	**Thinking and reasoning** -thinking process -logical and reasoning processes **Data analysis and decision making** -Data collecting -information presentation, data analysis -measuring of medium data,	3	**PBL Teaching and Learning Process** 1. Learning preparation 2. Thinking and topic choosing **Teaching and learning activities** 1. To explain course description, learning management process,	Dr.Rungnapa Lertpatcharapong Asst.Prof. Natthakitta Suwannateep

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
	-decision making **Personal Financial Management** **-**Mathematics with financial management **-**Mathematics with resource allocation		measuring and evaluating as well as teaching and learning media instruments 2. Open Clip Video, and Case Study which related to the content and start lecture. 3. Assign students' group to Brainstorm, choose problem to find the solution or something need to know by presenting at the front class with Flip Chart and work sheets. 4. Instructor brief teaching the lesson content to students. 5. Instructor assigned the research topics for student to do more research project by focus group and brainstorm to present at class by Video Clip or Sample Topic Flip Chart sample Topic -Thinking and reasoning -Data Analysis and decision Making -Personal Financial Management 6. Students select the research topic as "Super Saving" Project and write a planning works on work sheet and preparing to present in classroom. 7. Student presents their selected research project.	

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			8. Instructor brief teaching and advice for improvement and evaluate student who studied via Kahoot	
		0.5	**PBL Teaching and Learning Process**	
			3. Research Writing Method	
			Teaching and learning activities	
		1.0	1. Prepared students through Active Learning Activities.	
			2. Instructor reviews lesson from the previous week.	
		.05	3. Students present the revised research topic and ask classmates to question and answer.	
		1.0	4. Instructor brief review the writing research method.	
			5. Students perform brainstorming for researching the related content for their project and present to classroom for the procedure and process to do the project and draft writing research project for completion.	
		3.0	6. Instructor assigned the research topics for student to do more research project by focus group and brainstorm and present their Mind Map Thinking by Video Clip or Sample Topic Flip Chart,	

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			Thinking and reasoning, Data Analysis and decision Making, Personal Financial Management 7. Students present their research project 8. Instructor brief teaching and advice for improvement 9. evaluate student who studied via Kahoot **PBL Teaching and Learning Process**	
		0.5	4. Project implementation Teaching and learning activities 1. Prepared students through Active Learning Activities and review lesson content from the previous week.	
		1.0	2. Students present the step forward of their research project.	
		0.5	3. Instructor brief teaching by emphasis on the plan follow up of project implementation.	
		2.0	4. Students follow up their project implementation plan by collecting data as case study from their classmate such as meeting, seminar, focus group or launch the questionnaire and assigned other students as observer in this project too.	

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			5. Instructor brief teaching for overall. 6. Instructor assigned the research topics for student to do more research project by focus group and brainstorm and present their Mind Map Thinking by Video Clip Sample Topic Flip Chart -Thinking and reasoning -Data Analysis and decision Making -Personal Financial Management 7. Instructor brief teaching and advice for improvement 8. evaluate student who studied via Kahoot **PBL Teaching and Learning Process** 5. Project Presentation 6. Project Assessment **Teaching and learning activities** 1.Students present their project as Poster, Mobile Application, Video Clip, journal, Oral Presentation. 2.Instructor and students make an evaluation and write on work sheet together. 3.Instructor brief summarize the lesson 4.assessment. **Media**	
		2.0 6		

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			-WBSC	
6-9	**Scientific and factor of livings** -Foods -Medicines -Textile -Shelters **Scientific applied for health and beauty** -Health and exercise -Health and beauty -Energy for life -Environmental management	3 0.5 0.5 1.0 0.5 1.5	**PBL Teaching and Learning Process** 1.Prepared students 2.Thinking concept and topic selection **Teaching and learning activities** 1. To explain course description, learning management process, measuring and evaluating as well as teaching and learning media instruments 2. Open Clip Video, and Case Study which related to the content and start lecture. 3. Assign students' group to Brainstorm, choose problem to find the solution or something need to know by presenting at the front class with Flip Chart and work sheets. 4. Instructor brief teaching the lesson content to students. 5. Instructor assigned the research topics for student to do more research project by focus group and brainstorm and present their Mind Map Thinking by Video Clip or Sample Topic Flip Chart about the problems related	Dr.Rungnapa Lertpatcharapong Asst.Prof. Natthakitta Suwannateep

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			to foods, medicines, textile, shelters, health and exercise, cosmetics, energy, and environment. 6. Students select the research topic as “My Science Journal Project” and write a planning works on work sheet and preparing to present in classroom. 7. Student presents their selected research project. 8. Instructor brief teaching and advice for improvement 9.evaluate student who studied via Kahoot **PBL Teaching and Learning Process** 3. Research Writing Method **Teaching and learning activities** 1. Prepared students through Active Learning Activities. 2. Instructor reviews lesson from the previous week. 3. Students present the revised research topic and ask classmates to question and answer. 4. Instructor brief review the writing research method. 5. Students perform brainstorming for researching the related content for their	
		2.0 0.5 1.5 0.5 1.0		

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			project and present to classroom for the procedure and process to do the project and draft writing research project for completion.	
		2.5	6. Instructor assigned the research topics for student to do more research project by focus group and brainstorm and present their Mind Map Thinking by Video Clip or Sample Topic Flip Chart as Scientific and factor of livings. - Applied Scientific for health, Quality standard of living and environment. 7. Student presents their selected research project. 8. Instructor brief teaching and advice for improvement 9. evaluate student who studied via Kahoot	
			PBL Teaching and Learning Process	
		0.5	4. Project implementation **Teaching and learning activities** 1. Prepared students through Active Learning Activities and review lesson content from the previous week.	
		0.5	2. Students present the step forward of their research	

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			project.	
		1.0	3. Instructor brief teaching by emphasis on the plan follow up of project implementation.	
			4. Students follow up their project implementation plan by collecting data as case study from their classmate such as meeting, seminar, focus group or launch the questionnaire and assigned other students as observer in this project too.	
		1.0	5. Instructor brief teaching for overall.	
		3.0	6. Instructor assigned the research topics for student to do more research project by focus group and brainstorm and present their Mind Map Thinking by Video Clip or Sample Topic - Scientific and factor of livings - applied scientific for health, Quality standard of living and environment	
			7. Instructor brief teaching and advice for improvement	
			8. evaluate student who studied via Kahoot	
			PBL Teaching and Learning Process	

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			5. Project Presentation 6. Project Assessment **Teaching and learning activities** 1.Students present their project as Poster, Mobile Application, Video Clip, journal, Oral Presentation. 2. Instructor and students make an evaluation and write on work sheet together. 3. Instructor brief teaching 4. doing assessment via Kahoot **Media** -WBSC	
10-13	Advances in information technology -the cost effective analysis and use of information technology -social media and lifestyle in the digital era.	3 0.5 0.5 0.5	**PBL Teaching and Learning Process** 1.Prepared students 2.Thinking concept and topic selection Teaching and learning activities 1. To explain course description, learning management process, measuring and evaluating as well as teaching and learning media instruments 2. Open Clip Video, and Case Study which related to the content and start lecture. 3. Assign students' group to Brainstorm, choose problem to find the solution or	Dr.Rungnapa Lertpatcharapong Asst.Prof. Natthakitta Suwannateep

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			something need to know by presenting at the front class with Flip Chart and work sheets.	
		0.5	4. Instructor brief teaching the lesson content to students.	
		1.0	5. Instructor assigned the research topics for student to do more research project by focus group and brainstorm and present their Mind Map Thinking by Video Clip or Sample Topic Flip Chart about - the development of Information technology from the past to the present - Advances in information technology or an innovative of technology - Social medias and life effected - An information technology threat towards risky behavior for the Computer Crime Act 2007	
		3.0	6. Students select the research topic project and write a planning works on work sheet and preparing to present in classroom. 7. Student presents their selected research project. 8. Instructor brief teaching	

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			and advice for improvement 9.evaluate student who studied via Kahoot **PBL Teaching and Learning Process** 3. Research Writing Method Teaching and learning activities	
		0.5	1. Prepared students through Active Learning Activities.	
		0.5	2. Instructor reviews lesson from the previous week.	
		0.5	3. Students present the revised research topic and ask classmates to question and answer.	
		1.0	4. Instructor brief review the writing research method.	
		0.5	5. Students perform brainstorming for researching the related content for their project and present to classroom for the procedure and process to do the project and draft writing research project for completion.	
		3.0	6. Instructor assigned the research topics for student to do more research project by focus group and brainstorm and present their Mind Map Thinking by Video Clip or Sample Topic Flip Chart as - Government units or private	

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			sectors with high demand using of information technology, explain with reasons - The principles of buying the computer software, smartphones and other IT devices to meet the most of the user's needs, explain with reasons. 7. Student presents their selected research project. 8. Instructor brief teaching and advice for improvement 9.evaluate student who studied via Kahoot **PBL Teaching and Learning Process** 4. Project implementation **Teaching and learning activities** 1. Prepared students through Active Learning Activities and review lesson content from the previous week. 2. Students present the step forward of their research project. 3. Instructor brief teaching by emphasis on the plan follow up of project implementation. 4. Students follow up their project implementation plan	
		0.5 0.5		

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			by collecting data as case study from their classmate such as meeting, seminar, focus group or launch the questionnaire and assigned other students as observer in this project too.	
		1.0	5. Instructor brief teaching for overall.	
			6. Instructor assigned the research topics for student to do more research project by focus group and brainstorm and present their Mind Map Thinking about - News or topics being discussed and have affected by social medias. Brain storming by analyzing both positive and negative results. - Acting role play as behavior threat towards risky behavior for the Computer Crime Act 2007	
		0.5	7. Instructor brief teaching and advice for improvement	
		3.0	8. evaluate student who studied via Kahoot **PBL Teaching and Learning Process** 5. Project Presentation 6. Project Assessment **Teaching and learning activities**	
		6	1. Students present their	

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			project as Poster, Mobile Application, Video Clip, journal, Oral Presentation. 2. Instructor and students make an evaluation and write on work sheet together. 3.Instructor brief summarize the lesson 4. assessment via Kahoot. Media -WBSC	
14	**Chapter reviews**	2 2 2	-Thinking concepts and reasoning -data analysis and decision making -personal financial management -scientific and life factors -an applied scientific for health, beauty, energy of life, and environmental management -advances in information technology -the analysis and use of information technology -social media and lifestyle in the digital era. **Media** -WBSC	Dr.Rungnapa Lertpatcharapong Asst.Prof. Natthakitta Suwannateep
15	**Exhibition shows**	6	Show 3 pieces of work per group which on process the project during 2nd to 13th	Dr.Rungnapa Lertpatcharapong Asst.Prof.

Week	Topic	Hour	Teaching & Learning Activities, Instructional Media (if any)	Instructor
			week.	Natthakitta Suwannateep
16	**Final exam**			

2.Evaluation plan

Activities	Expected outcomes	Methods	Week	Percentage
1	1.1.1, 1.1.2, 1.1.6, 2.1.1, 2.1.4, 2.1.5, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6, 4.1.1, 4.1.3, 5.1.1, 5.1.3, 5.1.4	Project Presentation	15	25%
2	2.1.1, 2.1.4, 2.1.5, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6	Final exam	16	30%
3	1.1.1, 1.1.2, 1.1.6, 2.1.1, 2.1.4, 2.1.5, 3.1.6, 4.1.1, 4.1.3, 5.1.1, 5.1.3, 5.1.4	Students present their project	2-13	45%

Assessment Method

By organizing an exhibition event to present student's presentations, projects or group work projects and final examination are the factors to use for grading evaluation by mean in the ratio accumulated score 70 per cent and final examination 30 per cent.

Rubric Score Grading

Section 6 Teaching Materials and Resources

1. Texts and main documents

Faculty of science and technology. (2560). Science and Mathematics in Daily Life. Bangkok: Suan dusit university.

2. Documents and important

Section 7 Evaluation and Improvement of Course Management

1. Strategies for effective course evaluation by students

1.1 An assessment of instructional management of teachers to each of student by online systems and teaching and learning assessment by using the evaluation form's faculty.

1.2 Conduct the seminar session for discussion all problems among instructors and students at the end of academic year.

2. Evaluation strategies in teaching methods

2.1 Course teaching performance evaluation

2.2 Teaching observation from the participated team teachers

2.3 Chapter reviews of student's learning

3. Improvement of teaching methods

3.1 Sharing consideration among the participated team teachers for teaching and learning improvement by using the result of teaching assessment from students to discuss about the teaching and learning problems in the academic year between teachers and students and improve teaching and learning process together

3.2 Doing research in classroom

4. Chapter reviews according to the student achievement standards in courses conducted by the Achievement Verification Committee

4.1 Comprehensive assessment and examination of each course in accordance with the course objectives to consider along with the teaching concept.

4.2 Follow up and check the student's results, for overall and individual, especially, students with lower grade in academic performance than the criteria set by the university.

4.3 Chapter review by assessing student learning together with the course instructor.

4.4 Course instructor from General Education department have a meeting together with each of course instructors to certify student results in each of semester.

4.5 Take the results from the verification to improve TQF. 3 and inform the course instructor to Improve their teaching and learning management process to be more efficiency.

5. Review and planning of course effectiveness improvement

5.1 Course instructor responsible for the course preparation report of the course results (TQF.5) at the end of the semester based on the information given in no. 1 and no. 2

5.2 Bring the results to design learning course (TQF. 3) for the next academic year.