

Appendix A

Course Description

Learning matter group: science School: Pongpattanawittayakhom School

Code: 33266 Subject: Chemistry Level study: grade 12

Credit: 1.50 Time: 30 hours Semester: 2 Academic year: 2012

Students would be able to study, research and discuss about the origin of petroleum, natural gas separation processes, fractional distillation, utilization of derived products, effects of the petroleum utilization on living things, societies, and environment. Besides, there have to be the study about prevention and resolution on fuel problems in daily life. Also, students have to study the meanings and the origin of polymer and understand about natural and synthesized polymer. Students are expected to study structural properties, types, reactions, and the utilization of polymer as well as the effects from its utilization. The classification of some types of plastic based on the density is also expected. More issues to be mentioned are natural and synthesized rubbers, natural and synthesized fiber, the preparation of synthesized fiber, the effects on natural resources and environment. Students also study and analyze problems and the causes of problems, how to solve and prevent the problems, reserve and improve environment for sustainable use for societies.

In order to gain knowledge, to understand and to be able to think about causes and problems concerning environment occurring in the local areas, in Thailand, or in the world, student will have the skill to think about how to solve the problems. They should be able to reflect on the causes of pollutions. Benefits and effects from product utilization are highlighted using scientific processes through searching, thinking, investigating, integrating, and using scientific principles. Students will be able to explain the phenomena or problems in the real life and understand the relationship of science, technology, societies, and environment. In addition, students would be organize and analyze information, communicate, make decision, create works or resolutions and prevention for problems. They should also reserve and improve the environment aiming for the sustainability having scientific mind. Finally, students would be determined, responsible, and see the values of science, technology, and environment that influence society, moral principles, ethics, and proper values according to principles of science, technology, society and environment.

Appendix B

Curriculum structure

No.	Name of learning unit	Standard	Learning outcome	Learning Plan	Core Content	Time (hour)	Score weight
43	Chemistry and Environment	3.2	3.2.3	1. Petroleum Shadow;	1. Coal	3	30
			3.2.4	The reflection of life	2. Oil Shale		
			3.2.5	2. Polymer is beyond	3. Petroleum	4	
			3.2.6	our thoughts	4. Polymer		
			3.2.7	3. Pollutions! What you	5. Pollution occurring form the	4	
			3.2.8	and I should do?	producing and using the fossil fuel.		
44	Environment, and Living things and Society	2.2	2.2.1	4. Stop! Destroying the	1. Problem of environment and	3	20
			2.2.2	environment means	natural resources.		
			2.2.3	stop destroying life	2. Use, Protection of environment and natural resources.		
					3. Alertness and conservation		
45	Relationship between Science, Technology, Society and Environment	8.1	8.1.1-8.1.12	5. Science and Technology “Value existing” for life and environment	Science Project of life and environment	16	50
Total						30	100

Curriculum Vitae

Name	Miss Rungtiwa Kongson
Date of Birth	January 24, 1977
Educational Background	
Academic Year 2000	Bachelor of Education Majoring in Chemistry, Chiangmai Rajabhat University
Academic Year 2003	Master of Education Majoring in Curriculum and Instruction Naresuan University
Working Experiences	
November 2000:	Teacher position 1 level 3, Science Section Division of Secondary Education, Department of General Education, ministry of Education.
Current Position	Teacher position 2, Science Subject Secondary Education Area office Area 36, Office of Basic Education Commission Ministry of Education.

