



**YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCES**

SYLLABI

FRM/FMIPA/063-00
1 April 2010

Faculty : Faculty of Mathematics and Natural Science
Study Program : Science Education
Course / Code : Basic Science/201
Credit : Theory: 2 Practice:1
Semester : 1
Prerequisite/Code : --
Lecturer : Purwanti Widhy H, M.Pd & Susilowati, M.Pd

I. Course Description

This course will examine what is science, how science works, and how the influence of science on technological development and social life

II. Standard of Competence

Understanding the definition of science from many perspective (Science as way of Thinking, Science as way of investigating, and science as body of knowledge), applying scientific method to solve various problems in everyday life, and understanding the interactions between science, technology and society

III. Activity

Meeting	Basic Competence	Essentials Concept	Learning Strategy	Learning Materials/ References	Character
I	Recognize the most important characteristic of science	1. Understanding science : an overview 2. The Most Characteristic of science	Brainstorming, discussion	B.3	Curiosity, Religiosity
II,III,IV	Understand the definition of science from many	1. Myths of Science 2. Toward definition of science	Lecture, Group Discussions, Presentation	A.1, B.1, B.2,B.3	appreciation of diversity, confidence

	perspective	<p>(pertemuan 2)</p> <p>3. Science as a way of thinking (pertemuan 3)</p> <p>4. Science as way of investigating (pertemuan 3)</p> <p>5. Science as Body of Knowledge (pertemuan 4)</p>			
V,VI	Analyze the characteristic of science	<p>The Characteristic of Science:</p> <ol style="list-style-type: none"> 1. Focuses on the natural world 2. Aims to explain the natural world 3. Uses testable ideas 4. Relies on Evidence 5. Involves the scientific community 6. Lead to ongoing research 7. Benefit from scientific behavior 	Lecture and Discussion	B.3	Thinking logically, critically, creatively, and innovatively
VII	Able to analyze various topics of science based on the characteristics of science	A Science Prototype: Rutherford And The Atom	Case study	B.3	Thinking logically, critically, creatively, and innovatively
VIII	Midterm				
IX, X	Understand how science work and apply the scientific method to solve various problems in everyday life	<ol style="list-style-type: none"> 1. Scientific Method 2. Limitations of Scientific Method 3. The Real 	Lecture, Explorations, Brainstorming, Group discussion,	A.1, B.3	Thinking logically, critically, creatively, and innovatively

		Process Of Science 4. A blueprint of scientific investigation, 5. Explorations and discovery 6. Testing scientific idea	Group Investigating, Presentation.		
XI	Understand the interaction between science and society	1. Science and society 2. Supporting Science	Group Investigating and Presentation	B.1	Confidence
XII	Understand the interaction between science and technology	1. What has science done for us? 2. Fueling technology 3. Science and technology on fast forward 4. Making strides in medicine	Group Investigating and Presentation	A.1, B.1, B.3	Appreciative of works and achievements of others
XIII	Analyze the interaction between Science, Society, and technology	The dependency between Science, Society and Technology	Lecture, Group Discussion	B.1,B.3	Thinking logically, critically, creatively, and innovatively
XIV, XV	Popular Science	1. Energy and its source 2. Genetic Engineering	Lecture, Group Discussion	B.2,B.3	Thinking logically, critically, creatively, and innovatively
XVI	Final Exam				

IV. Reference

A. Compulsory

1. Hewitt, Paul G et al.(2007). *Conceptual Integrated Science*. San Francisco: Pearson Educations, Inc.

B. Additional

1. Chiappetta, Eugene L. (2010). *Science Instructional in The Middle and Secondary schools*. Boston : Pearson Educations, inc.
2. Griffith, Thomas. (2007). *The Physic of everyday phenomena*. New York: McGraw-Hill.
3. University of California. (2010). *Understanding science: How science really work?*. Accessed from <http://undsci.berkeley.edu/> on August 10, 2010.

V. Evaluation

No	Componen	Worth
1	Participation	20 %
2	Assignment	30 %
3	Midterm Exam	25%
4	Final Exam	25%
		100%