



YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCES

SYLLABI

FRM/FMIPA/063-00

1 April 2010

Faculty : Mathematics and Natural Science
Study Program : International Science Education
Course / Code : Labwork of Techniques and management natural science laboratory
Credit : practicum : 1 (one) sks
Semester : 3 (three)
Prerequisite/Code : -
Professor : Purwanti Widhy H, M.Pd

I. Course Description

This course develops competency to understanding the various things that relate to the techniques and management natural science laboratory related to the structuring, organizing equipment and activities in a variety of laboratory activities for learning natural science

II. Standard of Competence

1. Students are able to understand management laboratory, design laboratory, laboratory safety
2. Students are able to understand the introduction of laboratory equipment, handling of chemicals in the laboratory
3. Students are able to perform laboratory activities and respect to laboratory safety

III. Activity

Meeting	Basic Competence	Essentials Concept	Learning Strategy	References	Character
I		Introduction and course contract	Explanation		Curiosity
II	Students are able to understand management laboratory,	- Observation in science laboratory	practicum	A.1, A.2	appreciation of diversity, confidence

	design laboratory				
III		- Inventory tools and material in science laboratory	practicum	A.1, B.2, B1, A2	appreciation of diversity, confidence
IV		- Uses KIT science	practicum	A.1, B.2, B1, A2	appreciation of diversity, confidence
V		Make design of experiment using KIT science	practicum	A.1, B.2, B1, A2	appreciation of diversity, confidence
VI	Students are able to understand the introduction of laboratory equipment,	Uses of basic physics equipment	practicum	A.1, B.2, B1, A2	appreciation of diversity, confidence
VII		Uses of basic chemistry equipment	practicum	A.1, B.2, B1, A2	appreciation of diversity, confidence
VIII		Uses of basic biology equipment	practicum		appreciation of diversity, confidence, honesty
IX	Students are able to perform laboratory	Make Solution:	practicum	A.1, B.2, B1, A2	appreciation of diversity, confidence

	activities				
X		Sterilization	practicum	A.1, B.2, B1, A2	appreciation of diversity, confidence
XI		Using microscope	practicum		
XII		- Plant preparation	practicum	A.1, B.2, B1, A2	appreciation of diversity, confidence
XIII		Make Preparete - Animal Preparation	practicum		
XIV		- Make herbarium	practicum	A.1, B.2, B1, A2	appreciation of diversity, confidence
XV		- Make insectarium	practicum	A.1, B.2, B1, A2	appreciation of diversity, confidence
XVI		Make bioplastic	practicum		appreciation of diversity, confidence

IV. Reference

1. Bradbury, S. and Evennett, P., *Fluorescence microscopy, Contrast Techniques in Light Microscopy.*, BIOS Scientific Publishers, Ltd., Oxford, United Kingdom (1996). Collette, Alfred T. & Eugene L.
2. Chiappetta. (1994). *Science intruction in the middle and secondary schools*. New York: Macmillan Publishing Company.
3. Sund, Robert B. & Leslie W. Trowbridge. (1973). *Teaching science by inquiry in the secondary school*. Second edition. London: Charles E. Merrill Publishing Company.
A. Additional
4. Koesmadji Wirjosoemarto, Yusuf H. A., Bambang S., dan Riandi. 2004. *Teknik Laboratorium*. Bandung: UPI

5. Trowbridge, Leslie W. & Rodger Bybee. (1986). *Becoming a secondary school science teacher*. Columbus: Merrill Publishing Company
6. Johansen, D.A. 1940. *Plant Microtechnique*. 1st ed. New York: McGraw-Hill Publications in the Botanical Sciences.
7. Saas. J.E. 1958. *Botanical Microrechniques*. 3 ed. Ames, Iowa: The Iowa State College Press
8. Indrawati. 2008 .*Penataan Dan Pengadministrasian Alat Dan Bahan Laboratorium Kimia*.

V. Evaluation

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

Yogyakarta, 1-09-2013

Lecture

Purwanti Widhy H, M.Pd