

SYLLABUS & LESSON PLAN

General Chemistry I Laboratory Work



Lecturer :
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**YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
2010**



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FACULTY MATHEMATICS AND SCIENCES**

SYLLABUS

[SYL/KIC102/2010]

1. Faculty : Mathematics and Science Education
2. Study Program : Chemistry Education
3. Course Name & Code : General Chemistry I Laboratory Work (KIC 102)
4. Credit : 1 SKS (One day of week)
5. Semester : 1 (Odd)
6. Prerequisites : -
7. Lecture : Rr. Lis Permana Sari, M.Si. et al.

I. COURSE DESCRIPTION

Determination of the Compound formula from experimental data, entropy of system, enthalpy of reaction, colourimetry analysis, determination of relative atomic mass, Gas analysis based on the molar volum, the properties of electronegativity of elements, acids and bases titration.

II. COMPETENCE

a. Standart of Competence

To work out various methods of experiment to figure out several theories of chemistry.

b. Basic Competences

After following the General Chemistry I Laboratory Work, students can obtain experience in the experiment apparatus, observation the chemical changes, how to use the glassware, the chemicals and instrumens, data analysis, writing the report of the experiment.

III. SCHEDULE

Schedule		Activities	References
1 st	Introduction : Pre-laboratory, how to use some equipments, and instruments in laboratory.	Lecture and discussions	1,2,3 4,5
2 nd	Introduction 2 : Safety in chemistry laboratory, How to writing the report of the experiment.	Lecture and discussions	1,2,3 4,5
3 rd	Pre-test		

4 th	Determination of the Compound formula from the experiment data.	Laboratory work : Self activities in group with monitoring and guiding.	1,2,3 4,5
5 th	Determination of the relative atomic mass	Laboratory work : Self activities in group with monitoring and guiding.	1,2,3 4,5
6 th	Analyzes gas which is based on the molar volume	Laboratory work : Self activities in group with monitoring and guiding.	1,2,3 4,5
7 th	Determination of the gas molecular formula in Eudiometry	Laboratory work : Self activities in group with monitoring and guiding.	1,2,3 4,5
8 th	Enthalpy of reaction	Laboratory work : Self activities in group with monitoring and guiding.	1,2,3 4,5
9 th	Unit Test I		
10 th	Entropy of system	Laboratory work : Self activities in group with monitoring and guiding.	1,2,3 4,5
11 th	Valence of the Elements	Laboratory work : Self activities in group with monitoring and guiding.	1,2,3 4,5
12 th	Electronegativity Characteristic of Elements	Laboratory work : Self activities in group with monitoring and guiding.	1,2,3 4,5
13 th	Analyze in colorimetric	Laboratory work : Self activities in group with monitoring and guiding.	1,2,3 4,5
14 th	Acids, bases, and the titration curve	Laboratory work : Self activities in group with monitoring and guiding.	1,2,3 4,5
15 th	Inhall	Laboratory work : Self activities in group with monitoring and guiding.	
16 th	Final examination		

IV. REFERENCE BOOKS

Compulsary Book:

1. Chemistry Education Dept. (2010). Laboratory Work Manual '*General Chemistry Laboratory I*', Faculty of Mathematics and Science Education, Yogyakarta State University

Suggested Reference Books:

2. Baker, R.W. et al. 2008. *Chemistry 1 Laboratory Handbook*. Sydney: School of Chemistry, The University of Sydney.
3. Sienko, M.J., Plane, R.A and Marcus, S.T. (1984), *Experimental Chemistry*, 6nd edition, Japan : Kosaido Co
4. Heasley, V.L., Christensen, V.J. and Haesley, E. 1997. *Chemistry and Life in the Laboratory*, fourth edition. New York: Prentice Hall Inc.
5. Holum, J.R and Denison, D.C. 1978. *Laboratory Manual Fundamental of General, Organic, and Biological Chemistry*. 2nd edition, New York: John Willey & Sons

V. TEACHING MATERIAL/AIDS

- Laboratory Work Manual
- Laboratory apparatus
- Glassware
- Chemical stuff

VI. EVALUATION

No	Component	%
1	Observation	30
2	Unit test	20
3	Laboratory Work Report	25
4	Final Essay Test	25
		100

Yogyakarta,

Lecturer

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