


 FPMIPA UPI	SILABUS	No. Dok. : FPMIPA-SE-SL-22 Revisi : 00 Tanggal : 19 Januari 2011 Halaman : 1 dari 2
	ANALYTICAL CHEMISTRY (SE-307)	
Dibuat Oleh :  (Prof. Dr. Anna P.)	Diperiksa Oleh :  (Dr. Diana R.)	Disetujui Oleh :  (Dr. phil. Ari Widodo)

DESCRIPTION

This course is a necessary one in undergraduate science education. It is the basic of knowledge and pedagogical aspects of chemistry at school, so it is also functions as a supporting course for expertise course group at science education program. After attended this course, it is expected that the student can have the better understand to the basic concept of chemical analysis, both of conventional and modern analysis, which is needed to support student competencies as a science teacher. Course subject consist of Analytical chemistry as a part of chemistry, steps in chemical analysis, qualitative analysis, Quantitative analysis (titrimetric and gravimetric analysis), spectrometric analysis, speratation methods in analytical chemistry. The course will be arranged using Problem Based learning. Student ask to search the litelature related to subject, then discuss it in the class meeting. The students achievement checked by mid-semester test and final-semester test, individual and group task and presentation.

Syllabus

1. Course Identity


- | | |
|-------------------|--|
| a. Name | : Analytical Chemistry |
| b. Code | : SE-307 |
| c. Credit (s) | : 2 credits |
| d. Grade | : 2 nd grade, on 4 nd semester |
| e. Classification | : Concretion Competence Courses |
| f. Program | : IPSE-FPMIPA UPI/ S-1 |
| g. Statue | : compulsory |
| h. prerequisite | : Has attended fundamental chemistry |
| i. Lecturer | : Prof. Dr. Anna Permanasari, M.Si |

2. Standard Competence:

Understand that analytical chemistry is a part of chemistry that can be used to identify element in an inorganic compound, to analyze structure and to analyze the quantity of substance in materials.

3. Basic Competence:

- Can describe the steps in chemical analysis
- Can define the test to identify element in an inorganic compound
- Can describe basic concept in titrimetric methods (acid-base, redox, argentometric, and complexometric titration)
- Can do the calculation related to titrimetric methods

 FPMIPA UPI	SILABUS	No. Dok. : FPMIPA-SE-SL-22 Revisi : 00
	ANALYTICAL CHEMISTRY (SE-307)	Tanggal : 19 Januari 2011 Halaman : 2 dari 2

- e. Can describe the basic concept in spectrometric analysis (UV/VIS)
- f. Can use Lambert-Beers Law to calculate the concentration of sample matrix
- g. Can describe methods in separation chemistry.

4. Learning Activities

- Method(s) : demonstration, discussion, questions and answers,
- Approach(s) : Problem Based Learning
- Assignment : structured-assignment
- Media : LCD, OHP and apparatus

5. Assessment

The students achievement checked by mid-semester test and final-semester test and also paper (individual and group tasks) and presentation

- Unit Test (2x)
- Homework assignment
- Final Test
- Mid Term Test
- Participation in discussion
- Lecturer's Policy

6. Meeting's Agenda:

- 1st Meeting : Manipulation, Course preview
- 2nd Meeting : Analytical chemistry as a part of chemistry
- 3rd Meeting : Steps in chemical analysis
- 4th Meeting : Qualitative analysis (1)
- 5th Meeting : Qualitative analysis (2)
- 6th Meeting : Quantitative analysis (Acid-base titrations)
- 7th Meeting : Quantitative analysis (Argentometric titrations)
- 8th Meeting : Quantitative analysis (Redox titrations)
- 9th Meeting : Quantitative analysis (Complexometric titrations)
- 10th Meeting : Exercise on calculation in quantitative analysis
- 11th Meeting : Mid exam
- 12th Meeting : Spectrometric analysis (UV/VIS); Introduction to Lambert-Beer Laws
- 13th Meeting : Spectrometric analysis ; Exercises in spectrometric calculation
- 14th Meeting : Separation methods in analytical chemistry
- 15th Meeting : Separation methods in analytical chemistry
- 16th Meeting : Final exam

7. References

Day, Underwood (2004): Introduction to Analytical Chemistry, Prentice and Hall Pub, 5th edition, NewYork.