COURSE SYLABUS
ANALYTICAL CHEMISTRY

Credits: 02 (Lecture 1,5 – Pracices 0,5 – Self-study 06)

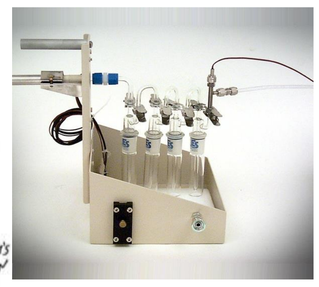
Code: MT01004

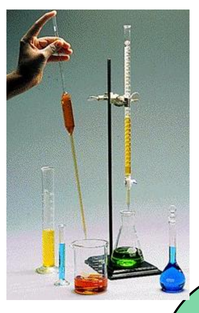
Experted Learning Outcomes

Indicator	Upon completion of the course, Student able to	Expected learning outcomes of program
Knowledge		
CELO1	Summarize certain concepts and principles in analytical chemistry; advantages and disadvantages of volumetric methods; instruemental analysis; concentration; sample analysis; errors and basic equipment.	ELO1: **Apply** the knowledge of natural science, politics, social science and humanities, law, economics, and awareness of contemporary issues in the field of environmental sciences.
CELO2	Apply volumetric method and instrumental analysis to analyze the presence of specific analytes in the environmental field.	ELO2: **Analyze** environmental quality including designing and conducting experiments, collecting data, and interpreting results. ELO3: **Evaluate** the impact of natural resource exploitation and emissions on environmental quality.
CELO3	Evaluate the analytical results obtained with current standards in the environmental field.	ELO2: **Analyze** environmental quality including designing and conducting experiments, collecting data, and interpreting results. ELO3: **Evaluate** the impact of natural resource exploitation and emissions on environmental quality.
Skills		
CELO4	Apply analytical methods adapted to the sample to be analyzed.	ELO 6: **Apply** systematic, critical, and creative thinking in solving problems in the environmental and related fields.
CELO5	Work in group.	ELO7: **Work** in groups and lead multi-functional teams effectively.
CELO6	Calculate results, discuss results and write reports.	ELO 10: **Use** modern technology, equipment, and techniques in the management and protection of the environment and natural resources.
Attitude		
CELO7	Be proactive and positive in learning and research.	ELO11: **Define** a clear career orientation; possess a passion for one's career and a sense of lifelong learning.

Brief descriptions

- Chapter 1: The basic concepts of analytical chemistry
- Chapter 2: Gravimetric method of analysis (lear more)
- Chapter 3: Titrations in analytical chemistry
- Chapter 4: Instrumental analysis





Student tasks

- Attendance: Students must attend at least 75% of the class and participate in class activities and 100% practical, discussion sessions.
- Preparing for the lecture: Students must read and carefully the lectures; do homework; presentation; groups discussion.
- Midterm test and final test: Students are required to take midterm test and final exam.

Assessment methods

1. Grading scale: 10
2. Evaluation:

- Attend class and group discussions: 10 %
- Pratice assessments: Students reach practice. These are the conditions for the final exam.
- Midterm test: 30%
- Final exam: 60%

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