Course Specifications

University	Beni-Suef
Faculty	Pharmacy
Dept.	Pharmaceutical Analytical Chemistry

1-Course Info.
Programme(s) on which the course is given: Bachelor in Pharmacy
Course Name and code No.: Analytical Chemistry-3 code: 604
Academic year/ Level: 2018-2019 level 2, semester 1
Credit hours: Lecture (2) hour + Practical (1) hour

2-Overall Aim of the Course

After completion of the course, the students should apply the basic principles of oxidation and reduction reactions in determination of some organic and in organic substances. The students will be able to suggest the most suitable electrochemical methods of analysis for determination of electrolytes (conductometry, potentiometry, and polarography).

3-Intended Learning Outcomes of the course (ILOs)

a. Knowledge and understanding

After completing this course, the student will be able to

a.1. Discuss comprehensive and detailed knowledge and full understanding in theory of redox reactions.

a.2. Describe conductometric and potentiometric titrations.

a.3. define theories and applications of polarographic methods of analysis

a. 4. Classify different types of electrodes and their uses.

b. Professional and Practical Skills

b.1. Correlate with minimum guidance in laboratories containing instruments such as potentiometers, pH meters.

b.2. Determine end points in titrations involving redox reactions.

b.3. Examine standard materials.

b.4. Create suitable analytical methods based on the knowledge and skills acquired.

b.5. Choose suitable glassware equipments used in titration analysis

c. Intellectual Skills

c.1. Classify compounds according to their oxidizing or reducing nature.

c.2. Differentiate between different types of electrochemical methods of analysis.

c.3. Generate suitable analytical methods for certain classes of pharmaceutical compounds based on redox titration reactions.

c.4. design stepwise scheme for the determination of different substances based on their electrical propertiess and the use of suitable analytical method for that purpose.

d. General and Transferable Skills

d.1. Evaluate proposed schemes for determination with colleagues

d.2. Adapt working as a part of a team for solving problems

d.3. Integrate properly with others (lecturer, instructor, colleagues)

d.4. Use equipments (pH meters) in addition to other glass wares professionally

d.5. Outline handling of instruments and chemicals safely and effectively.

d.6. Develop understanding and tolerance for personal differences.

4-Course Contents

Topics	No. of hours	
	Tutorial / Practical	Lecture
• Redox titration reaction	6	12
• Electrochemical methods of analysis (conductometry Potentiometry polarography)	6	12
Total	12	24

٥- Teaching and learning Methods

- Lectures
- Practical training in laboratory
- Class activity
- Take home assignments

7- Student Assessment Methods

a-Methods

a. **Practical exam** to assess professional and practical skills.

b. **Written exam** to assess knowledge, understanding and intellectual skills.

c. **Oral exam** to assess knowledge, understanding and intellectual skills.

b- Assessment Schedule

Assessment 1: practical exam 1 – 5th week
Assessment 2: practical exam 2 – 12th week
Assessment 3: final written exam – 14th week
Assessment 4: Oral exam -14th week

c- Weighting of Assessment Marks

Practical exams: 50 marks (34%)
Final written exam: 80 marks (53%)
Oral exam: 20 marks (13%)
Total : 150 Marks

8-List of References
a. Notes **Course notes:** prepared by staff members of the teaching department
b. Mandatory Books **None.**
b. Suggested Books • Vogel's textbook of Quantitative Chemical Analysis. 7th edition, revised by G. Svelhla, 1996. • Instrumental Methods of analysis, Willard, Merritt, Dean & Settle, 7th ed., 2003.
c. Journals • www.chemweb.com • www.chemistry.com

Course Coordinator: Ass. Prof. Dr. Eglal Abdelaleem

Head of department: Ass. Prof. Dr. Nehal Fayek Farid

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