

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	Technical Instruments Lab
Course number	PHCH2109
Faculty	
Department	
Course type	Major Needs
Course level	2
Credit hours (theoretical)	0
Credit hours (practical)	1
Course Prerequisites	

Course Objectives

1 - This practical course was designed to enhance the practical background of students with respect to instrumental analysis
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Intended Learning Outcomes

Knowledge and Understanding	* students to be able to select and apply appropriate instrumental methods of analysis to problems in any of the sciences. This goal involves understanding of the fundamental nature and practical applicability of measurement methods and how to apply them to real-world problems * to gain practical knowledge of how to carry out meaningful interpretation of data from analytical chemical measurements. The understanding necessary to interpret data correctly is achieved only by acquiring profound knowledge of both the theory and practice underlying a measurement system and any limitations involved * To learn the function of each unit in each instruments
Professional Skills	* To learn how to use the different instruments according to their general standard operating procedure SOP

Course Contents

- 1 - Refractometry: Quantitative analysis of glycerin water mixture
- 2 - Polarimetry: Quantitative analysis of dextrose IV infusion according to BP
- 3 - UV-VIS spectrophotometry: Determination of molar absorptivity from calibration curve
- 4 - UV-VIS spectrophotometry: The effect of solvent, pH, auxochrome on the UV absorbance
- 5 - UV-VIS spectrophotometry: assay of paracetamol tablets according to BP
- 6 - IR spectrophotometry: Sample handling techniques
- 7 - IR spectrophotometry: Drug identification using IR
- 8 - Flame Photometry: quantitative analysis of Normal saline infusion
- 9 - Flame Photometry: Determination of water hardness
- 10 - HPLC
- 11 - GC
- 12 - TLC

Teaching and Learning Methods

1 - lectures, laboratory instructions, demonstrations, videos

Students Assessment

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
Laboratory reports		35%
Evaluation/ oral quizzes		20%
Final exam		40%
Oral examinations		5%

Books and References

Recommended books Principles of instrumental analysis. Fifth edition, Skoog Hooler