



Course specification

University/Academy: Damanhour University

Faculty/Institute: Faculty of Science

Department: Chemistry

1. Course Data:

Course code: Chem. 402	Course title: Analytical chemistry	Academic year/level: 2009-2010 4 th year -2 nd term
Specialization: Special Chemistry	No. of instructional units: lecture <input type="text" value="2"/> tutorial <input type="text" value="1"/> practical <input type="text" value="6"/>	

course Aim

The course gives the students:

- The principles of thermal methods of analysis and radiochemical analysis.
- The principles of environmental analysis.

2. Intended learning outcome

Knowledge and understanding	By the end of the course, students will be able to: <ul style="list-style-type: none">• mention the principles of TG, DTA, DSC and radiochemical analysis.• describe the different methods of environmental analysis.• Give methods of pollutants analysis.
Intellectual skills	On completing this course, students will be able to: B3 analyse TG, DTA, DSC and radiochemical analysis. B2 Shows the methods of analysis. B1 Compare between different types of pollution, chemical pollutants and suggest analytical methods for common pollutants.
Professional skills	By the end of the course, students will be able to: C1 Examine the sheets of TG, DTA, DSC and radiochemical analysis.



	C2 Perform the data of the environmental analysis.				
General skills	By the end of the course, students will be able to: D1 IT and web search. D2 Communication with the Lecturer and colleagues. D3 Solving problems about environmental pollution.				
course content	<ul style="list-style-type: none"> • Introduction to thermal analysis • Methods of analysis • TG • DTA • DSC • Radiochemical analysis. Environmental analysis <ul style="list-style-type: none"> • (Pollution, chemical pollutants and their analytical methods) 				
Teaching and learning methods	4.1. Lectures and seminars using data show and board. 4.2. Assignment. 4.3. Group tutorial. 4.4. Reports.				
Taching and learning methods for students with special needs	a. Computer hall to be used in visual labs and simulation experiments. b. Data show, overhead projector, Molecular models and chemistry computer programs. c. Changing to credit hours system, it is more effective.				
Student Assessment	5.1. Mid term exam. 5.2. Reports. 5.3. Final term exam.				
Procedures used:					
Schedule:	<table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Assessment 1: Mid term exam</td> <td style="width: 40%;">Week: 8</td> </tr> <tr> <td>Assessment 2: Reports</td> <td>Week: 11</td> </tr> </table>	Assessment 1: Mid term exam	Week: 8	Assessment 2: Reports	Week: 11
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Assessment 2: Reports	Week: 11				



	Assessment 3: Final term exam	Week: 15
Weighing of Assessment:	Weighing of Assessments Mid-Term Examination: 15 Final-Term Examination: 100 Oral Examination: - Practical Examination : 25 Semester Work: 10 <hr/> Total: 150	
List of Textbooks and References:	Handbook Of Thermal Analysis Of Construction Materials By V.S. Ramachandran, Ralph M. Paroli, James J. Beaudoin, And Ana H. Delgado Institute For Research In Construction National Research Council Of Canada Ottawa, Ontario, Canada Noyes Publications William Andrew Publishing Norwich, New York, U.S.A 2002. Williams, Ian. <i>Environmental Chemistry, A Modular Approach</i> . Wiley. 2001. ISBN 0-471-48942-5	
Course Notes	Lecture notes	
Required Books (Textbooks)	- Handbook Of Thermal Analysis Of Construction Materials By V.S. Ramachandran, Ralph M. Paroli, James J. Beaudoin, And Ana H. Delgado Institute For Research In Construction National Research Council Of Canada Ottawa, Ontario, Canada Noyes Publications William Andrew Publishing Norwich, New York, U.S.A 2002. - Williams, Ian. <i>Environmental Chemistry, A Modular Approach</i> . Wiley. 2001. ISBN 0-471-48942-5	
Recommended Books	M C Ramos-Sánchez, F J Rey, M L Rodríguez, F J Martín-Gil, J Martín-Gil, "DTG and DTA studies on typical sugars", <i>Thermochim Acta</i> , 134: 55-60. 1988. Elsevier Science Publishers B.V., Amsterdam. Retrieved from " http://en.wikipedia.org/wiki/Thermal_analysis " N. Momoshima, Li-X. Song, S. Osaki and Y. Maeda, "Biologically induced Po emission from fresh water", <i>Journal of Environmental Radioactivity</i> , 2002, 63 , 187-197 Encyclopædia Britannica. 2006. Encyclopædia Britannica Online. 18 Dec. 2006 Radio-activity by Ernest Rutherford Phd, Encyclopedia Brit. 11th Edit. 1911	
Periodicals, web sites,....,etc	Periodicals, Web Sites, . . . etc www.Elsevier.com	

Course Instructor

Dr. Alaa E Ali

Head of Department

Dr. Medhat A. Shaker

Date: 20/9/2008