



Jordan University of Science and Technology
Faculty of Science & Arts
Chemistry Department

CHEM792 Research Methods In Chemistry

First Semester 2017-2018

Course Catalog

3 Credit Hours. This course aims to teach the students how scientific questions will be developed through the research proposal and the scientific reporting of findings in article style. The course includes both lecture and laboratory work, it is designed to enhance research-based learning opportunities and develop the ability of graduate students to investigate and interpret the chemical literature. The students will learn the fundamental of qualitative and quantitative research designs. The course will focus on the concrete issues of conducting research: research questions and hypotheses, selecting a topic, sampling, measuring methods, parametric and non-parametric statistics using SPSS software. Moreover, explaining type of articles and preparing thesis oriented proposal. This course will improve the students' skills of scientific thinking, scientific foundation of research, reading of articles, and analyzing data using variety of tasks (i.e., exams, paper critique, review paper, and search using library data base).

Text Book

Title	Research Design: qualitative, quantitative, and mixed methods approaches (2nd Edition), John. W. Creswell,
Author(s)	John. W. Creswell
Edition	2nd Edition
Short Name	Research Design
Other Information	SAGE publications, London, UK, 2003.

Course References

Instructor

Name	Dr. Ayat Bani Rashaid
Office Location	-
Office Hours	Sun : 10:00 - 11:00 Sun : 14:15 - 15:15 Mon : 11:30 - 12:30 Mon : 13:30 - 14:30 Tue : 11:00 - 12:00 Thu : 09:00 - 10:00

Email	ahbanirashaid@just.edu.jo
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Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 14:30 - 16:00 Room: M1305

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Communication Skills Presentation Skills	
Week 2	A framework for Design	
Week 3	Research Strategies and Ethical Considerations	
Week 4	The Introduction of research	
Week 5	Review Article and the Paper Critique	
Week 6	Research designs	
Week 7	Research designs	
	Quantitative Methods	
Week 9	Results and Discussion Sections of Scientific Research	
Week 8	Quantitative Methods	
Week 11	Abstract of Scientific Research	
Week 12	Parametric and Non-Parametric Statistics	

Mapping of Course Objectives to Program Student Outcomes ¹	Assessment method
Understand the major methods of research. [1e, 1f, 1g]	First Exam i.e., paper critique and presentation
Understand the scientific styles of writing and APA style of citation using the endnote software. [1g]	
Practiced reading, presenting, and writing in chemical literature. [1f, 1g]	First Exam i.e., paper critique and presentation
Interpreted and synthesized primary research proposal related to the student's thesis topic [1e, 1f, 1g]	

Relationship to Program Student Outcomes (Out of 100%)										
a	b	c	d	e	f	g	h	i	j	k
				23.33	33.33	43.33				

Evaluation	
Assessment Tool	Weight
First Exam i.e., paper critique and presentation	25%
Second Exam (i.e., poster)	10%
Mini proposal	15%
Final exam	20%
Detailed proposal	30%

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