



**Jordan University of Science and Technology**  
**Faculty of Pharmacy**  
**Pharmacy Department**

PHAR793 Critical Thinking And Analysis - JNQF Level: 9

First Semester 2025-2026

**Course Catalog**

2 Credit Hours. This course provides an introduction to tools and standards for critical thinking in science and ethics. It will begin with a review of foundations of logic and logical thought; encourage wide reading in the professional literature and lay media; exemplify various analytic methods; and challenge participants to listen and read carefully to be better able to identify faulty reasoning.

**Teaching Method:** Electronic Course

**Text Book**

<b>Title</b>	THE CRITICAL THINKING TOOLKIT
<b>Author(s)</b>	Galen A. Foresman, Peter S. Fosl, and Jamie C. Watson
<b>Edition</b>	1st Edition
<b>Short Name</b>	Ref#1
<b>Other Information</b>	2017

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Ref#2	Additional resources / websites	Websites	1st Edition	1. <a href="https://www.cambridge.org/us/education/blog/2018/10/18/teaching-critical-thinking-science-key-students-future-success/">https://www.cambridge.org/us/education/blog/2018/10/18/teaching-critical-thinking-science-key-students-future-success/</a> 2. <a href="https://www.researchgate.net/publication/321537481_Critical_Thinking_in_Science_What_Are_the_Basics">https://www.researchgate.net/publication/321537481_Critical_Thinking_in_Science_What_Are_the_Basics</a> 3. Dowd JE, Thompson RJ Jr, Schiff LA, Reynolds JA. Understanding the Complex Relationship between Critical Thinking and Science Reasoning among Undergraduate Thesis Writers. CBE Life Sci Educ. 2018 Spring;17(1):ar4. doi: 10.1187/cbe.17-03-0052. PMID: 29326103; PMCID: PMC6007780.
Ref#3	Additional resources	1. <a href="https://plato.stanford.edu/entries/fallacies/">https://plato.stanford.edu/entries/fallacies/</a> 2. <a href="https://www.logical-fallacy.com/articles/list-of-informal-fallacies/">https://www.logical-fallacy.com/articles/list-of-informal-fallacies/</a>	1st Edition	1. <a href="https://plato.stanford.edu/entries/fallacies/">https://plato.stanford.edu/entries/fallacies/</a> 2. <a href="https://www.logical-fallacy.com/articles/list-of-informal-fallacies/">https://www.logical-fallacy.com/articles/list-of-informal-fallacies/</a>
Ref#4	Introductory website	<a href="https://gwmatthews.github.io/ethics/what-is-critical-thinking.html">https://gwmatthews.github.io/ethics/what-is-critical-thinking.html</a>	1st Edition	<a href="https://gwmatthews.github.io/ethics/what-is-critical-thinking.html">https://gwmatthews.github.io/ethics/what-is-critical-thinking.html</a>
Ref#5	Additional readings	<a href="https://files.eric.ed.gov/fulltext/EJ887841.pdf">https://files.eric.ed.gov/fulltext/EJ887841.pdf</a>	1st Edition	<a href="https://files.eric.ed.gov/fulltext/EJ887841.pdf">https://files.eric.ed.gov/fulltext/EJ887841.pdf</a>
Ref#6	Extra reading	Sharples J M, Oxman A D, Mahtani K R, Chalmers I, Oliver S, Collins K et al. Critical thinking in healthcare and education BMJ 2017; 357 :j2234 doi:10.1136/bmj.j2234	1st Edition	Sharples J M, Oxman A D, Mahtani K R, Chalmers I, Oliver S, Collins K et al. Critical thinking in healthcare and education BMJ 2017; 357 :j2234 doi:10.1136/bmj.j2234

**Instructor**

<b>Name</b>	<b>Dr. Samah Al-Shatnawi</b>
<b>Office Location</b>	M5 L-4
<b>Office Hours</b>	Sun : 08:00 - 09:00 Sun : 10:00 - 11:00 Tue : 10:00 - 11:00 Wed : 08:00 - 09:00 Wed : 10:00 - 11:00 Thu : 08:00 - 09:00
<b>Email</b>	sfshatnawi@just.edu.jo

**Class Schedule & Room**

Section 1:  
 Lecture Time: Wed : 17:00 - 19:00  
 Room: متزامن الحضور منصة الكترونية

**Tentative List of Topics Covered**

Weeks	Topic	References
Week 1	Introduction to critical thinking	From <b>Ref#1</b> , From <b>Ref#4</b>
Week 4	Syllogistic logic	From <b>Ref#1</b>

Week 5	Induction Approach	Chapters 2,3,4 From Ref#1
Week 6	Deduction Approach	Chapters 2,3,4 From Ref#1
Week 7	Abduction Approach	Chapter 9 From Ref#1
Weeks 8, 9	In Class Assignment Presentations	
Week 10	Critical thinking in science	From Ref#3
Weeks 11, 12	Critical thinking in ethics	From Ref#5
Weeks 13, 14	Reasoning and public policy	From Ref#6
Weeks 15, 16	Summary and conclusion in logical approach	From Ref#1, From Ref#2, From Ref#3, From Ref#5
Weeks 2, 3	Informal fallacies	Chapter 5 From Ref#1, From Ref#2

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Evaluate scientific literature and media sources to identify faulty reasoning and bias [1PLO-BE2.2] [1L9S1]	25%	Final Exam
Apply appropriate analytical and ethical frameworks to assess real-world cases. [1PLO-BE2.3] [1L9C3]	25%	Interactive Learning
Apply basic principles of logic to analyze scientific and ethical arguments. clo1 [1PLO-BE2.1] [1L9K2]	25%	Midterm Exam
Demonstrate critical reading and listening skills through accurate identification of logical fallacies. [1PLO-BE3.1] [1L9C5]	25%	Final Exam

Relationship to Program Student Outcomes (O																					
PLO-PT1.1	PLO-PT2.1	PLO-PT2.2	PLO-PT3.1	PLO-PT3.2	PLO-PT3.3	PLO-PT3.4	PLO-PT3.5	PLO-PT3.6	PLO-PT3.7	PLO-PT3.8	PLO-PT3.9	PLO-MP1	PLO-MP2	PLO-MP3	PLO-MP4	PLO-PET1.1	PLO-PET2.1	PLO-PET2.2	PLO-PET2.3	PLO-PET3.1	PLO-PET3.2

Relationship to NQF Outcomes (Out of 100%)			
L9K2	L9S1	L9C3	L9C5
25	25	25	25

Evaluation	
Assessment Tool	Weight
Midterm Exam	25%
Interactive Learning	25%
Final Exam	50%

Date Printed: 2026-01-08