

COURSE INFORMATION					
Course Title	Code	Semester	L+P Hour	Credits	ECTS
Introduction To Critical Thinking	PHYS 528	2	2 + 0	2	4

Prerequisites	
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Language of Instruction	English
Course Level	Postgraduate
Course Type	Elective
Course Coordinator	
Instructors	
Assistant	
Goals	To help students distinguish between harmful forms of thought and beneficial forms of thought, to teach students to reason rationally, write sound and effective arguments, behave ethically, and understand how knowledge is gained.
Content	Critical thinking and its relation to science and humanism, argument mapping, egocentrism and sociocentrism, rational and irrational arguments, logical and formal fallacies, questioning, ethical thinking and the theory of knowledge.

Learning Outcomes	Teaching Methods	Assessment Methods
1) Human thinking left to itself leads to various forms of self-deception.	1 ,12	A
2)Realisation that many types of thinking can be harmful, but more congenial to human nature.	12	A
3) To distinguish between scientific thought and nonscientific thought. To recognise egocentrism and sociocentrism as being 'ordinary' thinking.	2,3,12	A ,C
4) The role of questioning in critical thinking requires being active in reading, writing, listening and thinking.	12	A
5) Development of the skills to map arguments effectively, avoiding logical fallacies.	1,2,3,12	A,C
6) To recognise and produce a good argument. To recognise what invalidates an argument and how to repair it.	1,2,3,12	A

7) To be familiar with informal fallacies, and their pitfalls	1,2,3	A,C
8) To be aware of tone, balance and bias in texts	1,2,3,12	A
9) Obtain understanding of ethical thinking	1	A
10) Obtain understanding of Socratic questioning and questions that will lead to good thinking	1, 2,3	A,C
11)To practice deep learning of a body of knowledge by organisation, thought and reflection.	1	A

Teaching Methods:	1: Lecture, 2: Question-Answer, 3: Discussion, 9: Simulation, 12: Case Study
Assessment Methods:	A: Testing, C: Homework

COURSE CONTENT		
Week	Topics	Study Materials
1	Components of critical thinking and ordinary thinking, humanism, bigotry and bias	Lectures,1, 2, 4
2	Critical thinking in science and socratic questioning	Lectures,1,2
3	Argument mapping 1- components of a simple argument, mapping logic	Lectures, 4
4	Argument mapping 1-case study 1	Lectures, 3
5	Argument mapping 2-multiple premises, co-premises, the golden rule, the rabbit rule, holding hands rule. Logical fallacies.	Lectures, 3
6	Argument mapping 2-case study 2	Lectures, 3
7	Midterm exam 1	
8	Egocentrism and sociocentrism as results of 'ordinary' thinking	Lectures, 1, 2
9	Classifying arguments: case studies, repairing arguments.	Lectures, 3
10	Informal fallacies 1: case studies, tone, balance and bias in texts.	Lectures,1, 3
11	Informal fallacies 2: case studies, tone, balance and bias in texts.	Lectures, 1,3
12	Midterm exam 2	
13	Standards for thinking: ethical thinking, Socratic questioning, questions that lead to excellence of thought.	Lectures,1
14	The theory of knowledge (TOK)	Lectures, 1

RECOMMENDED SOURCES	
Textbook	1. Critical thinking, 3rd edn – R. Paul and L. Elder
Additional Resources	2. Think critically- Facione and Gittens, 2013

MATERIAL SHARING	
Documents	3. Various articles from the media, 4. Developing critical thinking skills, W.T. Daly
Assignments	Four homework assignments
Exams	Two mid-term exams and one final

ASSESSMENT		
IN-TERM STUDIES	NUMBER	PERCENTAGE
Mid-terms	2	30
Lab practicals	0	0
Assignment	5	10
Seminars	3	10
Total		50
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		50
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		50
Total		100

COURSE CATEGORY	Expertise/Field Courses
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COURSE CATEGORY		Expertise/Field Courses				
No	Program Learning Outcomes	Contribution				
		1	2	3	4	5
1	Gets a sound base for the main fields of physics such as Classical Mechanics, Quantum Mechanics and Electromagnetism,		X			
2	Gets the ability of interpreting, analysing, forming a synthesis and relationships between the main fields of physics and/or other sciences,					X
3	Obtains the education required for the measurements in scientific and technological areas and the contribution of physics in the industrial applications and on the macroscopic scale such as the society,				X	

4	Follows the up-to-date scientific developments, makes the analysis/synthesis for the new ideas and evaluates them,					X
5	Uses the academic sources, the computer technology and the related devices,					X
6	Joins the working and research groups, also the scientific meetings, communicates well at the national and international level,		X			
7	Gets the ability of creative and critical thinking, problem solving, researching, producing a new and original work, improving himself/herself in his/her own fields of interest,					X
8	Gains the concepts of ethics and responsibility. Undertakes the responsibility for the solutions to the problems related with his/her field as required for having an intellectual identity.					X

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Including the exam week: 16x Total course hours)	16	2	32
Hours for off-the-classroom study (Pre-study, practice)	16	4	64
Mid-terms	2	2	4
Homework assignments	5	1	5
Final examination	1	2	2
Total Work Load			107
Total Work Load / 25 (h)			4.28
ECTS Credit of the Course			4