

GE2134: CRITICAL AND CREATIVE THINKING

Effective Term

Semester B 2022/23

Part I Course Overview

Course Title

Critical and Creative Thinking

Subject Code

GE - Gateway Education

Course Number

2134

Academic Unit

Public and International Affairs (PIA)

College/School

College of Liberal Arts and Social Sciences (CH)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

GE Area (Primary)

Area 1 - Arts and Humanities

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

GE2101 Rational Thinking and Creative Ideas

Exclusive Courses

POL/PIA2400 Critical Analysis SA/ POL2943 Critical and Creative Thinking

Part II Course Details

Abstract

A fundamental mission of university education is to prepare students to think critically and creatively in their daily lives and moral reasoning, and across the boundaries of traditional disciplines and professions. Specialization in education can narrow the mind of students, which make them fail to see that they can deal with the issues in one domain by drawing a parallel from the success in another domain. It is therefore important to introduce students the generic principles of rationality and the art of creative thinking and to teach them how to apply them in their daily lives and moral reasoning, and across different disciplines and professions. This course was designed with the aim to achieve such objectives by adopting an interdisciplinary approach. Current affairs and daily life examples, and cases in different academic and professional disciplines are used to illustrate the principles of rationality, the art of creative thinking and their applications. Upon completing the course, students should be able to acquire the styles of higher-order self-reflexive thinking that can help them transcend different domains of practical and ethical reasoning and the boundaries of tradition disciplines and professions.

The pedagogical approach of this course is interactive. Its teaching and learning activities include workshop, small group discussion, video clips screening, group presentation and project, individual assignments, and quiz.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if DEC-A1 DEC-A2 DEC-A3 app.)			
1	Master the principles of rational thinking and apply them in daily lives, in moral reasoning, and across different disciplines and professions.		x	x	
2	Formulate strategies to avoid committing to the common fallacies and cognitive biases in reasoning and decision making.		x	x	
3	Understand different styles and models of creative thinking and formulate their own style of creative thinking.		x	x	x
4	Master the art of discovery and innovative thinking in problem solving and moral reasoning.			x	x

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lecture	Introduction of basic principles of rationality, the art of creativity, and their applications in daily life, moral reasoning, and different disciplines and professions, and the identification of common fallacies and cognitive biases in reasoning and decision making.	1, 2, 3, 4 2 hrs on average
2	Workshop	An opportunity for students to clarify and raise questions about the lecture content, and to practice what they learn from the lecture by doing presentation, exercise, and discussion.	1, 2, 3, 4 1 hr on average
3	Group presentation and project	An opportunity for students to demonstrate their understanding and the mastery of the art of creative thinking.	3, 4
4	Individual assignment	An opportunity for students to demonstrate their more in-depth understanding and mastery of the art of critical thinking with more difficult exercises	1, 2
5	Final Quiz	An opportunity for students to demonstrate their basic understanding and mastery of the art critical thinking	1, 2

Assessment Tasks / Activities (ATs)

ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Individual assignment: Students are required to attempt more difficult exercises so as to test their more in-depth understanding and mastery of the art of critical thinking.	1, 2	20

2	Group presentation and project: Students are required to demonstrate their understanding and mastery of the art innovation and discovery, the ability to thinking creatively in problem solving.	3, 4	40	
3	Participation: This gives students an opportunity to practice what they learn by attempting in-class exercises under the supervision of the instructor, and is also a means to encourage students to make comments and raising questions to stimulate the discussion in the workshop and the group presentation sessions.	1, 2, 3, 4	20	
4	Final Quiz. This is used to test students' basic understanding and mastery of the art of critical thinking.	1, 2	20	

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)**Assessment Task**

1. Final Quiz

Criterion

Grasp of the basic principles, the practical skills and techniques of rational thinking

Critical and analytic skills to assess arguments

Grasp of the common fallacies and the cognitive biases dealt in the course

Excellent (A+, A, A-)

Excellent grasp of the basic principles, the practical skills and techniques of rational thinking; excellent capacity to identify, analyse, and evaluate different forms of arguments; excellent capacity to construct logical arguments, and the common fallacies and biases in reasoning, and to make sound judgements and decision making in an uncertain world.

Good (B+, B, B-)

Evidence of a good grasp of the basic principles, the practical skills and techniques of rational; good capacity to construct logical arguments, and the common fallacies and biases in reasoning, and to make sound judgements and decision making in an uncertain world.

Fair (C+, C, C-)

Some ability to grasp of the basic principles, the practical skills and techniques of rational; some capacity to construct logical arguments, and the common fallacies and biases in reasoning, and to make sound judgements and decision making in an uncertain world.

Marginal (D)

Minimal grasp of the basic principles, the practical skills and techniques of rational; minimal capacity to construct logical arguments, and the common fallacies and biases in reasoning, and to make sound judgements and decision making in an uncertain world.

Failure (F)

Little evidence of being able to grasp the basic principles, the practical skills and techniques of rational, to construct logical arguments, and the common fallacies and biases in reasoning, and to make sound judgements and decision making in an uncertain world.

Assessment Task

2. Group presentation and project

Criterion

Research skills to delineate and synthesize materials
Ability to give direct and adequate responses to challenges
Effective delivery to audience Originality

Excellent (A+, A, A-)

Evidence of outstanding originality; creative use of materials and imaginative design; excellent research depth; excellent grasp of the materials; excellent use of audio-visual aids and cooperativeness among group members for effective presentation; good and creative organization of materials; excellent ability to conduct in-class discussion; capability in responding to questions derived from alternative perspectives.

Good (B+, B, B-)

Evidence of some originality and creativity; good research depth; general grasp of the materials; good use of audio-visual aids and cooperativeness among group members for effective presentation; good organization of materials; good ability to initiate dialogues with other students.

Fair (C+, C, C-)

Some thought given to originality or creativity; basic and adequate understanding of the subject; some grasp of the materials; routine treatment of the materials; research not very deep; ability to respond to simple problems during discussion.

Marginal (D)

Minimal thought given to originality or creativity; an acceptable level of familiarity with the subject matter and grasps of materials.

Failure (F)

Lack of originality or creativity; little evidence of familiarity with the subject matter; limited or irrelevant use of literature.

Assessment Task

3. Individual assignment

Criterion

Grasp of the basic principles, the practical skills and techniques of critical thinking
Critical and analytic skills to assess arguments

Grasp of the common fallacies and the cognitive biases dealt in the course

Excellent (A+, A, A-)

Excellent grasp of the basic principles, the practical skills and techniques of critical thinking; ability to respond to questions directly and precisely; strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.

Good (B+, B, B-)

Evidence of a good grasp of the basic principles, the practical skills and techniques critical thinking; evidence of grasp of subject, some evidence of critical capacity and analytic ability, reasonable understanding of issues; evidence of familiarity with literature.

Fair (C+, C, C-)

Some ability to grasp of the basic principles, the practical skills and techniques of critical thinking; adequate understanding of the subject; ability to respond to simple problems.

Marginal (D)

Minimal grasp of the basic principles, the practical skills and techniques of critical thinking; sufficient familiarity with the subject matter to enable the student to progress without failing.

Failure (F)

Little evidence of being able to grasp the basic principles, the practical skills and techniques of critical thinking; little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited, or irrelevant use of literature.

Assessment Task

4. Participation

Criterion

Effort to participate in in-class activities
Contribution to classroom discussions

Excellent (A+, A, A-)

Very active in making comments and raising questions to stimulate the discussion in the workshop, and the group presentation sessions.

Good (B+, B, B-)

Quite active in making comments and raising questions to stimulate the discussion in the workshop, and the group presentation sessions.

Fair (C+, C, C-)

Fairly active in making comments and raising questions to stimulate the discussion in the workshop, and the group presentation sessions.

Marginal (D)

Minimally active in making comments and raising questions to stimulate the discussion in the workshop, and the group presentation sessions.

Failure (F)

Make very little or no attempt to participate in the discussion in the workshop, and the group presentation sessions.

Part III Other Information

Keyword Syllabus

Nature of rationality. Principles of rational thinking. Deductive logic. Arguments. Rules of inference. Fallacies. Inductive logic. Probability judgment. Decision making. Heuristics and Biases. Scientific reasoning and scientific discovery. Constructing and testing hypotheses. Marginal science, pseudoscience and superstitions. Nature of creativity. Different styles and models of creative thinking. Conceptual space. Divergent thinking. Imagination and association. Analogical reasoning, modelling and theory construction. Problem solving. Relationship between rational thinking and creativity. Rationality, creativity and moral reasoning. Higher-order thinking. Cases in different academic and professional areas, such as scientific discoveries, technological inventions, great experiments, groundbreaking ideas in philosophy, and social and business studies. Thinking styles of great thinkers, innovative scientists and engineers, leading politicians, successful entrepreneurs, and great artists, and so on. Cases of moral dilemma in daily and social life, and in different professions.

Reading List

Compulsory Readings

	Title
1	Barker, S F (2003) <i>The Elements of Logic</i> , 6th ed. New York: McGraw-Hill Book Company.
2	Baron, J (2008) <i>Thinking and Deciding</i> , 4rd ed. New York: Cambridge University Press.
3	Boden, M A (ed.) (1996) <i>Dimensions of Creativity</i> . Cambridge, MA.: MIT Press.
4	Buzan, T and Buzan, B (2000) <i>The Mind Map Book</i> . London: BBC.
5	Curtler, H M (2004) <i>Ethical Argument: Critical Thinking in Ethics</i> . New York: Oxford University Press.
6	Dawes, R M (1988) <i>Rational Choice in an Uncertain World</i> . Forth Worth, TX.: Harcourt Brace Jovanovich College Publishers.
7	De Bono, E (1985) <i>Six Thinking Hats</i> . Boston: Little Brown.
8	De Bono, E (1992) <i>Serious Creativity: Using the Power of Lateral Thinking to Create New Ideas</i> . New York: HarperCollins.
9	Dennett, D C (2014) <i>Intuition Pumps and Other Tools for Thinking</i> . London: Penguin Books.
10	Giere, R N (1997) <i>Understanding Scientific Reasoning</i> , 4th ed. Forth Worth, TX.: Harcourt Brace College Publishers.
11	Glass, A L and Holyoak, K J (1986) <i>Cognition</i> , 2nd ed. New York: Random House.
12	Just D R <i>Introduction to Behavioral Economics: Noneconomic Factors that Shape Economic Decisions</i> . New York: John Wiley & Sons, Inc.
13	Kahneman D (2012) <i>Thinking, Fast and Slow</i> . London: Penguin Books.
14	Levitin, D J (2016) <i>A Field Guide to Lies: Critical Thinking in the Information Age</i> . New York: Dutton.
15	Matlin, M W (1994) <i>Cognition</i> , 3rd ed. Forth Worth, TX.: Harcourt Brace Publishers.
16	Thaler R H and Sunstein C R (2009) <i>Nudges: Improving Decisions about Health, Wealth, and Happiness</i> . London: Penguin Books.
17	Thomson, A (2001) <i>Critical Reasoning in Ethics: A Practical Introduction</i> . London and New York: Routledge.

Additional Readings

	Title
1	Baggini, J and Fosl, P S (2003) <i>The Philosopher's Toolkit: A Compendium of Philosophical Concepts and Methods</i> . Oxford: Blackwell Publishing.
2	Baggini, J. and Stangroon, J. (2006) <i>Do You Think What You Think You Think? The Ultimate Philosophical Quiz Book</i> , London: Granta Books.
3	Blackburn, S (1999) <i>Think: A Compelling Introduction to Philosophy</i> . Oxford: Oxford University Press.
4	Gardner, H (1993) <i>Creating Minds: An Anatomy of Creativity Seen Through the Lives of Freud, Einstein, Picasso, Stravinsky, Eliot, Graham, and Gandhi</i> . New York: Basic Books.

5	Gardner, H (1989) <i>To Open Minds: Chinese Clues to the Dilemma of Contemporary Education</i> . New York: Basic Books.
6	Gardner, M (1982) <i>Aha! Gotcha: Paradoxes to Puzzle and Delight</i> . New York: W. H. Freeman and Company.
7	Gigerenzer, G (2002) <i>Calculated Risks: How to Know When Numbers Deceive You</i> . New York: Simon & Schuster.
8	Huff, D. (1954) <i>How to Lie with Statistics</i> . New York: W.W. Norton & Company Inc.
9	Laudan, L (1997) <i>Danger Ahead: The Risks You Really Face on Life's Highway</i> . New York: John Wiley & Sons, Inc.
10	Law, S (2003) <i>The Philosophy Gym: 25 Short Adventures in Thinking</i> . London: Review.
11	Law, S (2003) <i>The Outer Limits: More Mysteries from the Philosophy Files</i> . London: Dolphin.
12	Levitt, S. D. and Dubner, S. J. (2000) <i>Freakonomics: A Rogue Economist Explores the Hidden Side of Everything</i> . London: Penguin Books.
13	Miller, A. I. (2000) <i>Insights of Genius: Imagery and Creativity in Science and Art</i> . Cambridge, MA: MIT Press.
14	Phelan, P and Reynolds, P (1996) <i>Argument and Evidence: Critical Analysis for the Social Sciences</i> . London: Routledge.
15	Plous, S (1993) <i>The Psychology of Judgment and Decision Making</i> . New York: McGraw-Hill, Inc.
16	Pospessel, H (2000) <i>Introduction to Logic: Propositional Logic, Revised 3rd ed.</i> Upper Saddle River, N.J.: Prentice Hall.
17	Pospessel, H (2003) <i>Introduction to Logic: Predicate Logic, 2nd ed.</i> Upper Saddle River, N.J.: Prentice Hall.
18	Priest, G (2000) <i>Logic: A Very Short Introduction</i> . Oxford: Oxford University Press.
19	Shermer, M (1997) <i>Why People Believe Weird Things: Pseudoscience, Superstition, and Other Confusions of Our Time</i> . New York: W. H. Freeman and Company.
20	Singer, I (2011) <i>Modes of Creativity: Philosophical Perspectives</i> . Cambridge, MA: MIT Press.
21	Sternberg, R J (ed.) (1999) <i>Handbook of Creativity</i> . New York: Cambridge University Press.
22	方子華、陳浩文等 (2005) 《批判思考》 Singapore: McGraw-Hill Education.
23	谷振詣 (2000) 《論證與分析-邏輯的應用》 北京：人民出版社
24	余錦波、方子華 (1994) 《思考常談》 香港：嶺南學院
25	陳文江、秦美珠 (2004) 《智者的邏輯》 台北：究竟出版社
26	羅成昌、詹華軍 (2001) 《創意無限-如何開發你的創新能力》 香港：香港教育工作者會

Annex (for GE courses only)

A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:

Please indicate which CILO(s) is/are related to this PILO, if any (can be more than one CILOs in each PILO)

PILO 1: Demonstrate the capacity for self-directed learning

1, 2, 3, 4

PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology

1, 2, 3, 4

PILO 3: Demonstrate critical thinking skills

1, 2

PILO 4: Interpret information and numerical data

1, 2

PILO 5: Produce structured, well-organised and fluent text

1, 2

PILO 6: Demonstrate effective oral communication skills

1, 2, 3, 4

PILO 7: Demonstrate an ability to work effectively in a team

3, 4

PILO 9: Value ethical and socially responsible actions

1, 2, 3, 4

PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation

1, 2, 3, 4

B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.

Selected Assessment Task

Group Presentation and Project