

GENERAL EDUCATION, KMITL

COURSE SYLLABUS

Course Code	96642011	Course Title	Critical Thinking				
Total Credits	3(3-0-6)	Semester / Year of Study	1/2025	Section		Date- Time	
Course Description (English)	This course explores issues about the nature and techniques of critical thought, viewed as a way to establish a reliable basis for our claims, beliefs, and attitudes about the world. We explore multiple perspectives, placing established facts, theories, and practices in tension with alternatives to see how things could be otherwise. Views about observation and interpretation, reasoning and inference, valuing and judging, and the production of knowledge in its social context are considered. Special attention is given to translating what is learned into strategies, materials, and interventions for use in students' own educational and professional settings.						
Course Coordinator	Dr. Bruce Weeks						
Course Instructors	Dr. Bruce Weeks						
Teaching Assistant (if any)	-						
Counselling Schedule	Line Group / Microsoft Teams			Teaching Language	☐ Thai ☒ English ☐ Others, please specify.....		
Website or Online Teaching Method (if any)	Microsoft Teams						
Course Learning Outcomes							
By the end of this course, the student will be able to CLO-1. Understand and apply the basics of critical thinking CLO-2. Identify common psychological barriers to logical and critical thinking CLO-3. Detect logical fallacies in moral, political, and business arguments. CLO-4. Formulate arguments with sound and persuasive reasoning. CLO-5. Evaluate academic sources of information CLO-6. Develop news literacy and truthfulness in various sources of media CLO-7. Evaluate and respond to competing arguments Students can apply creative thinking insights in real-life perspectives, whether in personal matters, professional work, or social interactions, with efficiency.							

General Education Learning Outcome: GE-LO		
GE-LO	Value	
☒ GE-LO-1 Analytical and Critical Thinking	7	
☐ GE-LO-2 Complex Problem Solving		
☒ GE-LO-3 Creativity	3	
☐ GE-LO-4 Interpersonal Skills		
☒ GE-LO-5 Integrity and Perseverance	1	
☒ GE-LO-6 Active Learning and Learning Strategies	2	
☐ GE-LO-7 Resilience, Stress Tolerance and Flexibility		
☒ GE-LO-8 Leadership and Social Influence	2	
☐ GE-LO-9 Communication		
☐ GE-LO-10 Entrepreneurship and Startup		
☐ GE-LO-11 Digital Quotient Literacy and Digital Media Production		
Total Value	<u>15</u>	

Teaching Plan and Evaluation Plan

Week	Topic/Sub-topic	Activities	Notes
1	Introduction to Critical Thinking	Lecture and quiz	
2	Think Fast Think Slow by Daniel Kahnemen (PART 1)	Lecture and quiz	
3	Think Fast Think Slow by Daniel Kahnemen (PART 2)	Lecture and quiz	
4	Ideas of Logic	Lecture and quiz	
5	Ideas of Logic Argument Basics	Lecture and Quiz	
6	Inductive and Deductive Reasoning	Lecture and Quiz	
7	Creating Basic Arguments	Individual Assignment	MIDTERM PROJECT
8	CRAAP formula in choosing valid references, News Literacy and Truthfulness in Media	Assignment	
9	Lateral Thinking	Lecture and Group Activities	
10	Student Presentations	Activities	
11	Toulmin's Model for Presenting Arguments	Lecture and Group Activities	
12	Scriven's Model for Analysing arguments	Lecture and Group Activities	
13	Student Presentations	Activities	

Week	Topic/Sub-topic	Activities	Notes
14	Decision Trees, Bayesian Decision Making, Toyota's 5 Why Analysis for Problem Solving	Lecture and Quiz	FINAL PROJECT
15	Course Wrap Up Final Project Assignment	Lecture	FINAL PROJECT

Evaluation Plan

Assessment Activities	Value	Score	Week of Evaluation	Notes
1. Quizzes	2	8	Weeks 1,2,3,4,5,6,14	End of each class. Based on each week's lecture topics
2. Individual Assignments	3	12	Weeks 8, 11	Submit 1 week after assigned. Not submitting work results in 0 points
3. Group Assignments	5	20	Weeks 8, 11	Submit 1 week after assigned. Not submitting work results in 0 points
4. MIDTERM PROJECT	1	6	7	Mid Term Week
5. FINAL PROJECT	4	14	14-15	Individual Assignment
Total	15	60		

Evaluation criteria

☐ Group-based								
☒ Standard-based								
Grade	A	B+	B	C+	C	D+	D	F
Score (60 points)	57-60	49-56.9	41-48.9	34-40.9	27-33.9	21-26.9	15-20.9	0-14.9
☐ Satisfactory/Unsatisfactory (S/U)								
Grade	S				U			
Score (60 points)	30-60				0-29.9			

Scoring criteria according to Assessment Plan

Assessment Activities	Learning Outcomes	Value	Level			
			4 (Excellent)	3 (Good)	2 (Fair)	1 (Poor)
1. Quizzes Weeks	GE-LO-6	2	Score above 80%	Score above 70%	Score above 60%	Score less than 55%
2. Individual Assignments	GE-LO-1	2	Strong evidence of original critical thinking; good organization, capacity to analyze and synthesize arguments; superior grasp of subject matter; evidence of extensive knowledge base	Evidence of grasp of subject, basic evidence of critical capacity and ability to recognize and create arguments.	Basic understanding of the subject; ability to develop arguments and logical connections. Some demonstration of critical thinking	Little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited or irrelevant use of subject material
	GE-LO-5	1	Students exhibits a commitment to completing the assignment in a thoughtful, detailed manner. Seek unique solutions demonstrating critical thinking ability.	Student demonstrates a strong commitment to completing the assignments. They explore solutions and apply critical thinking, but may not always seek the most unique or innovative approaches.	Student completes the assignment with a reasonable level of effort. Critical thinking is present but somewhat limited.	
3. Group Assignments	GE-LO-3	3	Students indicate a solid understanding of the	Students demonstrate a basic understanding	Students responses lacks organization,	Students show Little evidence of familiarity with the subject matter; weakness in

Assessment Activities	Learning Outcomes	Value	Level			
			4 (Excellent)	3 (Good)	2 (Fair)	1 (Poor)
			material and show some evidence of critical thinking and analytical ability. Present Apply the Scriven/Lateral Thinking paradigms.	of the subject, with limited critical engagement of the Apply the Scriven/Lateral Thinking paradigms.	relevance, and applications of the Apply the Scriven/Lateral Thinking paradigms.	critical and analytic skills; limited or irrelevant use of subject material
	GE-LO-8	2	Students demonstrate a high degree of cooperation and ability to contribute to the group project	Students actively participate in group discussions/presentations and contribute meaningful ideas.	Students participate in group work but may rely on others to take the lead. Their contributions are inconsistent.	Students show minimal engagement in the group project, contributing little to discussions or tasks.
4. Midterm Assignment Creating Arguments incorporating Logic and Reasoning covered in previous lectures	GE-LO-1	1	Answers demonstrate strong evidence of critical thinking, well-organized structure, with a logical progression of ideas. Relevant and well integrated evidence or examples to support arguments.	Students indicate a solid understanding of the material and show some evidence of critical thinking and analytical ability.	Answers in this category reflect a Students demonstrate a basic understanding of the subject, with limited critical engagement	Student responses lacks organization, relevance, and critical engagement.
5. Final Project	GE-LO-1	4	The student's work is complete according to	Student's work is complete and meets all	Student's work meets basic	Student's work is incomplete or does

Assessment Activities	Learning Outcomes	Value	Level			
			4 (Excellent)	3 (Good)	2 (Fair)	1 (Poor)
Analyzing Arguments, demonstrating an understating of thinking processes and holistic critical thinking abilities.			the given instructions, and they can create original work that satisfies all specified components. Furthermore, they achieve all objectives for each component demonstrating mastery of the course content.	given instructions. They demonstrate a solid understanding of the course content and achieve most objectives, though originality or depth may be somewhat limited.	requirements but may be missing some components or lack depth. Their understanding of the course content is evident but not fully developed, and objectives are only partially achieved.	not fully follow instructions. Understanding of the course content is minimal, and they achieve few objectives, showing little mastery of key concepts.