

Gyalpozhing College of Information Technology

Analytical & Critical Thinking and Storytelling with Data

Programme(s): Bachelor of Computer Science
Year / Stage: Year 2 Semester 2
Module Code: ACT201
Effective Academic Year: AY 22/23 Spring Semester

Instructional Hours

This module consists of 120 curriculum hours.

Module Aims:

This module provides students with the skills to analyze and evaluate information in order to obtain the greatest amount of knowledge from a piece of data, and leads students to be rational and disciplined thinkers. This will provide the best chance of making the correct decision, reduce bias and minimize damages if a mistake does occur while learning the right writing approach to create your narrations through storytelling. Students will bring data to life through immersive storytelling by art of speaking the language of data.

Teaching Methods / Learning Tasks:

The module will be taught using teaching sessions and assignments.

- During teaching sessions, students will learn about the theories and principles on Analytical and Critical Thinking, Storytelling with Data through lectures, case study and SDL.
- During assignments, students will be able to apply the learning through individual and group work. Exercises will improve their understanding of the module.

Means of Assessment:

CA1	25%
CA2	35%
CA3	40%
Total	100%

CA1: Assignment

Students will produce a report to demonstrate the application of Analytical Thinking process on a given problem statement and data.

CA2: Assignment

Students will assign into teams to deliver on a report to demonstrate Critical Thinking Process being applied on assigned project or topic.

CA3: Assignment

Students will form team in producing a report and presentation to demonstrate Storytelling with Data on assigned project or topic.

E Textbook:

1. Analytical Thinking : Oxford Center for the Mind by Gary Laorrison (2014)
2. Critical Thinking – Learn the Tools the Best Thinkers Use by Linda Elder and Richard Paul (Mar 2020 edition)
3. Storytelling with Data – a data visualization guide for business professionals by Cole Nussbaumer Knaflic (2015)

References:

1. Critical Thinking: Your Guide to Effective Argument, Successful Analysis and Independent Study by Tom Chatfield
2. Factfulness: Ten Reasons We're Wrong About the World--and Why Things Are Better Than You Think by Hans Rosling
3. Critical Reasoning : A Practical Introduction - Anne Thomson (3rd Edition)

Special Requirements:

Prerequisite	Nil
Software	Word Processing/Presentation Software
Hardware	Laptop/PC (16GB ram)
Others	Nil

Table of Specifications:

Topics	Abilities (%)				Total
	K	C	A	HA	
A. Analytical Thinking	5	10	15	5	35
B. Critical Thinking	5	10	15	5	35
C. Storytelling with Data	5	5	10	10	30
Total	15	25	40	20	100

Notes:

1. The letters K, C, A and HA in the table of specifications denote the knowledge, comprehension, application and higher than application respectively, in the cognitive domain of Bloom's Taxonomy.
2. In the detailed syllabus, which follows, all objectives should be understood to be prefixed by the word: "At the end of instruction, the learner should be able to..."

Detailed Syllabus:

<u>Learning Outcomes</u>		Hours 120			
		L	T	P	SDL
A.	<u>Analytical Thinking</u>		6	24	2
1.1	Types of Thinking				
1.2	Introduction to Analytical Thinking				
1.3	Explain elements of Analytical Thinking				
1.4	Describe analysis methods and techniques				
B.	<u>Critical Thinking</u>		9	33	2
2.1	Introduction : Access the Context of the Problem				
2.2	Explain Context Assessment and Defining Problem Statement				
2.3	Explain Bridging the Gap				
2.4	Explain Weighting Feasibility and Desirability				
2.5	Explain Deriving Alternatives Solutions				
2.6	Explain Anticipate Objections				
C.	<u>Storytelling with Data</u>		9	33	2
3.1	Explain elements of Effective Visual				
3.2	Explain Thought Process and Design Choices				
3.3	Explain elements of story				
3.4	Explain construction process and narratives, delivery techniques				
Total Running Time: 120			24	90	6

Notes:

1. The letters L, T, P and SDL in the detailed syllabus denote lecture, teaching, practical and self-directed learning respectively.