

Faculty of Engineering & Technology

Scientific Thinking

Information :

Course Code : SCT 101

Level : Undergraduate

Course Hours : 2.00- Hours

Department : University Requirments

Area Of Study :

Upon completion of this course, students will be able to:

- Apply the basic concepts, theories and information about the scientific thinking and factors affecting it.
- Use basic science in scientific thinking.
- Demonstrate professional responsibilities, ethical, cultural and societal aspects about thinking scientifically.
- Own the needed knowledge and skills in scientific thinking.
- Carry out a self-learning and research in scientific thinking field.

Description :

This course provides students with basic understanding of scientific thinking. Students will be exposed to concepts, terminology, principles and theories that comprise a course in thinking scientifically. Topics covered are to synthesize the broad range of knowledge about thinking scientifically, to emphasize research methodology, to encourage critical thinking, and to convey a scientific as well as systematic approach to think over a concept

Course outcomes :

a.Knowledge and Understanding: :

1 -	Describe insights into their environment and their scientific thinking well-being.
2 -	Select different human behavior and ways of its motivation.
3 -	Define different scientific thinking terms, concepts and principles.
4 -	State major perspectives in scientific thinking.
5 -	Discuss the ways that scientific thinking theories are used to assess, predict and change human behavior.

b.Intellectual Skills: :

1 -	Apply critical thinking using scientific thinking theories and principles on personal relationships.
2 -	Assess human behavior in scientific thinking.
3 -	Criticize research paper in scientific thinking.

c.Professional and Practical Skills: :

1 -	Use observational methods to describe, explain, predict as well as control behavior of scientific thinking.
2 -	Show scientific thinking to influence and improve lives of human beings.

d.General and Transferable Skills: :

1 -	Communicate effectively with others by applying the information they gained about scientific thinking.
-----	--

2 -	Set goals and plans to achieve them.
3 -	Appreciate continuous professional development and lifelong learning.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction: What is scientific Thinking?	2	1	0
Types of scientific thinking-scientific thinking components	2	1	0
Levels of thinking-bloom taxonomyscientific thinkers'; behavior, attitudes and tools	2	1	0
Elements of science-scientific methodcollecting information-implementation of tools of thinkers as well as scientific method into phases of thinking	2	1	0
Elements of science-scientific methodcollecting information-implementation of tools of thinkers as well as scientific method into phases of thinking [continued]	2	1	0
Concept	2	1	0
Hypothesis-Research assignment discussion	2	1	0
Variable	2	1	0
Strategies and problem solving	2	1	0
Analysis-practice	2	1	0
Analysis-practice	2	1	0
Analysis-practice	2	1	0
Decision making	2	1	0

Teaching And Learning Methodologies :

Interactive Lectures including Discussions
Self-Study (Project / Reading Materials / Online Material / Presentations)
Case Studies

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments	10.00		
Final Exam	40.00		
Individual Projects	15.00		
Midterm Exam (s)	30.00		
Presentations	5.00		

Course Notes :

Course Notes are available with all the slides used in lectures in electronic form on Learning Management System (Moodle)