Non-Engineering Courses (NE)

Non-Engineering Courses Group

NE 264 – Scientific Thinking

COURSE INFORMATION

Course Title:	Scientific Thinking		
Code:	NE 264		
Hours:	Lecture – 2 Hrs.	Tutorial – 2 Hrs.	Credit –3.
Prerequisite:	None		

GRADING

Class Performance/Attendance:	10%
Midterm # 1/Assignments – (7^{th} Week):	30%
Midterm # 2/Assignments – (12^{th} Week):	20%
Final Exam:	40%

COURSE DESCRIPTION

Thinking Patterns Development.Meaning & Construction of Science + Scientific Values & Directions. Science, non-science & other-than science +Science, Engineering & Technology. Properties of science. Objectives of science + Postulates of scientific Thinking. Mental operations used in science + Scientific Guessing. Types of deductions + Representation. Research methods in mathematical sciences + Postulates, definitions. Research methods in natural sciences. Experiments & Observations + Scientific postulates & their conditions

Verification of scientific postulates. Problems solving + general methods of problems solving. Creative Thinking + Fluency types. Flexibility & Originality + Basics of Brain Storming.

TEXT BOOK &REFERENCES

Scientific thinking by A. Monem Hassan .

COURSE AIM

The main goal of the course is to develop the students skills in applying different methods of Scientific Thinking.

SPECIFIC OUTCOMES OF INSTRUCTION

Get acquainted with the historical development of these methods

COURSE OUTLINE

Week Number 1:	Thinking Patterns Development
Week Number 2:	Meaning & Construction of Science + Scientific Values & Directions
Week Number 3:	Science, non-science & other-than science +Science, Engineering & Technology
Week Number 4:	Properties of science
Week Number 5:	Objectives of science + Postulates of scientific Thinking
Week Number 6-7:	Mental operations used in science + Scientific Guessing
Week Number 8:	Types of deductions + Representation
Week Number 9:	Research methods in mathematical sciences + Postulates, definitions
Week Number 10:	Research methods in natural sciences
Week Number 11:	Experiments & Observations + Scientific postulates & their conditions
Week Number 12:	Verification of scientific postulates
Week Number 13:	Problems solving + general methods of problems solving
Week Number 14:	Creative Thinking + Fluency types
Week Number 15:	Flexibility & Originality + Basics of Brain Storming
Week Number 16:	Final Exam.

COURSE COORDINATOR AND DEMAND

Course Coordinator: Dr.Samir Youssef.

Course Demand: *Required*