Engineering economics
&
law

GNE 502

Course Lecturer: Dr. OGEDENGBE T.S.

Course Content

- Module 1: Introduction to Engineering Economics
- Module 2a: Costing of Production Systems
- Module 2b: Sources of Finance
- Module 3: Investment Appraisals/Resource Allocation
- Module 4: Interest Rates & Interest Formulas and Problems
- Module 5: Annual Costs, Present Worth and Rate of Return
- Module 6: Valuation of Assets/Depreciation Accounting
- Module 7: Financial Management & Statements/ Accounting Methods

Course Content

- Module 8: Budgets & Budgetary Control
- Module 9: Law of Contract/Law of Torts
- Module 10: Patents Requirements/ Registered Design/ Company Law

GRADING PATTERN

- **EXAMINATION - 60MARKS**
  - **PART A - MCQ - 20 MARKS**
  - **PART B - ESSAY - 40 MARKS**

- **CONTINUOUS ASSESSMENT**
  - **ATTENDANCE - 10 MARKS**
  - **TEST - 30 MARKS**

Module 1: Introduction to Engineering Economics

Module Learning Outcomes

At the end of this module students are expected to be able to;

- **Have a general understanding of the place of Economics in Engineering.**
- **Understand the basic concept of Engineering Economics**
- **Explain Economics as a science and as a art.**
- **Have a general understanding of the place of Law in Engineering.**

MODULE 1: Basic Concept of Engineering Economics

- What is Economics?

  Definition based on Wealth

  - Adam Smith defined economics as the study of nature and causes of wealth of nations.

  Definition based on Welfare

  - Alfred Marshall argued that it is better defined as the study of scarce commodity and human welfare.

Engineering Defined:

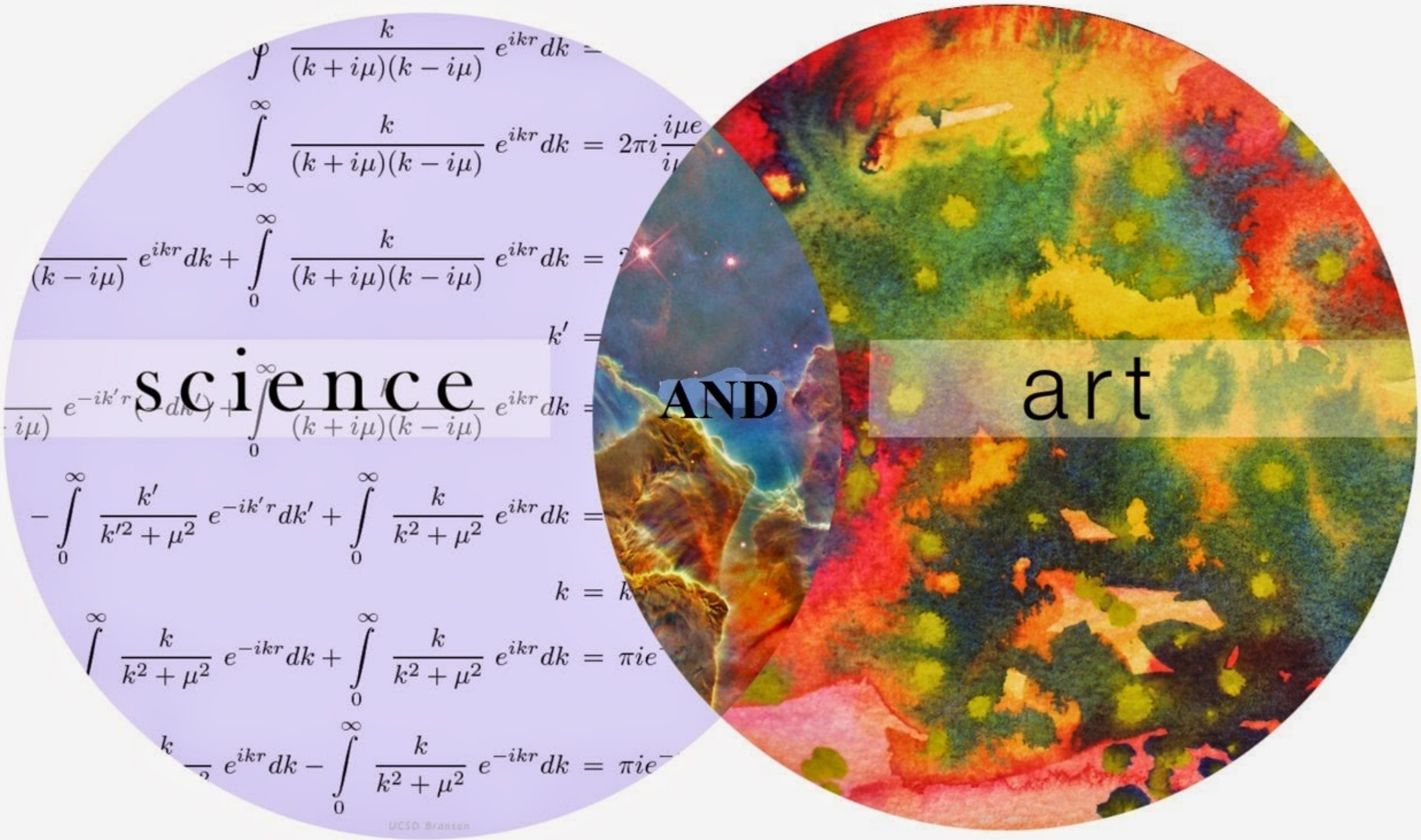
The profession in which the knowledge gained in physics, chemistry, life sciences and mathematics is applied to make products in large scale that increases the prosperity of man.

Science is a field of study where the basic principles of different physical systems are formulated and tested.

Engineering is the application of science.

Hence **Engineering Economics** deals with the methods that enable one to take economic decisions towards minimizing costs and/or maximizing benefits to business organizations.

Is Economics a Science or an Art?


science
AND
art

Economics as a Science

- Science is a field of study where the basic principles of different physical systems are formulated and tested.
- Economics is regarded as a social science because simply because it adopts the use of scientific methods to build theories that can help explain the behavior of individuals, groups and organisations.
- It deals with principles and theories related to costs, demand and supply, etc. hence it is regarded as a science.

Economics as an Art

- Art is the expression or application of human creative skill and imagination.
- When the facts that are studied in a science are followed in real life, it makes the science an art.
- For example, a doctor studies science, but after becoming doctor he puts his knowledge into practice by attending to patients.
- Economics is an art because all principles and studies in economics are applied in real life situations to better the lot of mankind.

Engineering Law

- This involves the application of laws as required during the practice of professional engineering.
- It involves the general consultation and application of ethics and legal entities during necessary engineering practices.
- It is needful to ensure safety of the public and is as such very vital for the society.
- Some of such laws affect how efficient an engineer will be and as such are very needful.
- Examples include Laws guiding contract (Law of Contract), Laws guiding human actions and inaction/wrong doings (Law of Torts) etc

Practice Question

1. Explain Economics as proposed by
   (a) Adam Smith
   (b) Alfred Marshall

2. Explain briefly the following terms
   (i) Science
   (ii) Art
   (iii) Engineering
3. What is Engineering Economics

4. Economics is a science and an art, discuss.

5. What is Engineering Law?

6. Engineering Law is a necessary course of study for an Engineering Student. Discuss.

References

1. **Engineering Economics by R. Panneerselvam (2001).** PHI Learning Private Limited, New Delhi.
2. **Contemporary Engineering Economics by** Chan S. Park (2007) (4th Ed.) Pearson Education, Inc.