



# THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

## *Department of civil Engineering*

### **CVE 501 – Engineering Economics**

#### **COURSE PARTICULARS**

**Course Code:** CVE 501

**Course Title:** Engineering Economics

**No. of Units:** 3

**Course Duration:** Two hours of theory and one hour of tutorial per week for 15 weeks

**Status:** Compulsory

**Course Email Address:**

**Course Webpage:**

**Prerequisite:** NIL

#### **COURSE INSTRUCTORS**

**Engr. O. Adeniyi**

*First Floor; SEET Building*

*Dept. of Civil Engineering*

*Federal University of Technology, Akure, Nigeria.*

**Phone:** +2348044560792

**Email:**

#### **COURSE DESCRIPTION**

This course is for engineering students who are studying their first formal course in engineering economy. It is concerned with economic analysis of alternatives by widely used non-mathematically sophisticated methods.

Its purpose is to give the student a sound understanding of the basic aspects of the subject and some insight into approaches that can be used for making sound economic decisions concerning the types of problems he is likely to encounter in other engineering courses and in his career. As a course, which focus is to impart useful skills and enhance the ability to make practical choice in situations with alternative financial profiles, a rigorous tutorials/worked example sessions have been included.

## COURSE OBJECTIVES

The objectives of this course are to:

- foster the environment whereby students are with cognate theories of the particular sub-discipline as well as adequate practical background to be of immediate valued to industry and the nation in general.

## COURSE LEARNING OUTCOMES / COMPETENCIES

Upon successful completion of this course, the student will be able to:

- explain varieties of alternative business situations ranging from small to large organisation and furthermore the differences as to the phase of technology in use.
- appreciate different nature of costs incurrence as in outlay of cashflow in one or another nature of investment and also different industrial.
- understanding variety of approaches to issues in industry like proper appreciation of the nature of depreciation, risks, uncertainty etc and how each affect investment decision making
- know more than the above, all which will enable the student acquire a solid base for further study after graduation. This will permit him to understand and use more advanced, and a constant development that open him to procedures needed or adjudged helpful in analysing the more complex economic problems that he may encounter in his later career.

## GRADING SYSTEM FOR THE COURSE

This course will be graded as follows:

Class Attendance	5%
Assignments	10%
Test(s)	25%
<u>Final Examination</u>	<u>60%</u>
<b><u>TOTAL</u></b>	<b><u>100%</u></b>

## GENERAL INSTRUCTIONS

**Attendance:** It is expected that every student will be in class for lectures and also participate in all practical exercises. Attendance records will be kept and used to determine each person's qualification to sit for the final examination. In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with any of the instructors, indicating the reason for the absence.

**Academic Integrity:** Violations of academic integrity, including dishonesty in assignments, examinations, or other academic performances are prohibited. You are not allowed to make copies of another person's work and submit it as your own; that is plagiarism. All cases of academic dishonesty will be reported to the University Management for appropriate sanctions in accordance with the guidelines for handling students' misconduct as spelt out in the Students' Handbook.

**Assignments and Group Work:** Students are expected to submit assignments as scheduled. Failure to submit an assignment as at when due will earn you zero for that assignment. Only under extenuating circumstances, for which a student has notified any of the instructors in advance, will late submission of assignments be permitted.

**Code of Conduct in Lecture Rooms and Laboratories:** Students should turn off their cell phones during lectures. Students are prohibited from engaging in other activities (such as texting, watching videos, etc.) during lectures. Food and drinks are not permitted in the laboratories.

## READING LIST

E. Paul DeGarmo and John R. Canada. Engineering Economy, 5<sup>th</sup> Edition, Macmillan Publishing Co. Inc., New York, USA, 573p.

Eugene L. Grant and W. Grant Ireson. principles of Engineering Economy, 4<sup>th</sup> Edition, The Ronald Press Company, New York, 574p.

## COURSE OUTLINE

Week	Topic	Remarks
1	Economics of business setting, costing of production systems. <ul style="list-style-type: none"> <li>• Alternative locations for manufacturing plants, warehouse, retail stores etc and the contrasting differences in construction costs, taxes, insurance rates and operating costs</li> </ul>	
2	Objective of cost analysis and control	
3	Source of Finance, Money and Credit for Projects. <ul style="list-style-type: none"> <li>• Bank deposits\</li> <li>• corporate and foreign bonds</li> <li>• treasury securities</li> <li>• mortgages</li> </ul>	The student should be able to distinguish between short term and long term loan and the use of each and the risks
4	Investment Appraisal <ul style="list-style-type: none"> <li>• Assigning financial feasibility</li> <li>• difference in result of various methods</li> </ul>	
5	Resources allocation	
6	Interest rates. interest formulas and problems <ul style="list-style-type: none"> <li>• interest and Money-Time relationships</li> <li>• uniform series and uniform (Arithmetic) gradient series.</li> <li>• normal and effect interest rates.</li> </ul>	
7.	Annual costs. Present worth, rates of return. <ul style="list-style-type: none"> <li>• perpetuities and capitalized cost.</li> </ul>	
8	Cost reducing	MID-SEMESTER TEST
9	Depreciation Accounting valuation of assets	
10-11	Financial Management accounting methods; financial statement, element of costing	
12	Budget and Budgeting control <ul style="list-style-type: none"> <li>• annual accounts</li> <li>• cost control</li> </ul>	
13	Dwelling with multiple alternatives and uncertainties. Planning and decision making procedure	
14-15	Macroeconomics, Economic growth, National income.	
15	Revision	This is the week preceding the final examination. At this time, evaluation will be done to assess how far the students' expectations for the course have been met.