



# THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

## *Department of Mining Engineering*

### MNE 201 – Engineer-in-Society

#### COURSE PARTICULARS

**Course Code:** MNE 201

**Course Title:** Engineer-in-Society

**No. of Units:** 1

**Course Duration:** One hour of theory per week for 14 weeks and four hour of Symposium on the Role of Engineers in the Society.

**Status:** Compulsory

**Course Email Address:** [akinbinuvictor@gmail.com](mailto:akinbinuvictor@gmail.com)

**Course Webpage:** <http://www.fwt.futa.edu.ng/courseschedule.php?coursecode=MNE%20201>

**Prerequisite:** NIL

#### COURSE INSTRUCTORS

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#### COURSE DESCRIPTION

Philosophy of science. History of engineering and technology. Engineering professions and specializations. Engineering Draftsmanship. Engineering training, institutions and post-training capacity building. Safety in engineering and introduction to risk analysis. The role of engineers in nation building. Invited lectures by professionals in practice at an organized symposium.

#### COURSE OBJECTIVES

The objectives of this course are to:

- introduce students to the techniques of scientific investigation and valid augment;
- provide students with what is expected of engineers in work place and challenges
- Provide students with information on registration with engineering professional bodies (COREN, NSE) and hierarchy in the engineering profession.

#### COURSE LEARNING OUTCOMES / COMPETENCIES

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

*(Knowledge based)*

- explain the role of engineers, technologist and draftsmanship in engineering work.
- apply valid argument in scientific investigation;
- know the importance of engineering profession in national building.

*(Skills)*

- familiarisation with organization of symposium and elements it compose of,
- familiarisation with risk and challenges involved in engineering and
- role of professional bodies and registration formalities

## GRADING SYSTEM FOR THE COURSE

This course will be graded as follows:

Class Attendance	5%
Symposium	5%
Assignments	10%
Test(s)	20%
<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 the symposium. 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. Students are not allowed to get involved in 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' course material.

**Assignments and Group Work:** Students are expected to submit assignments as scheduled. Failure of students to submit assignments at the set time 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. Group discussions are allowed after every lecture to enable every student to interact and share their knowledge of the course.

**Code of Conduct in Lecture Rooms:** 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

John L. 2001. A Historical Introduction to the Philosophy of Science, 4<sup>th</sup> edition Oxford University Press, Oxford.

<b>Week</b>	<b>Topic</b>	<b>Remarks</b>
1	Introduction and Course Requirements Overview	During this first class, the expectation of the students from the course will also be documented.
2 & 3	Philosophy of science <ul style="list-style-type: none"> <li>• introduction to Philosophy of science</li> <li>• characteristic that distinguish scientific inquiry from other investigation</li> <li>• procedure to follow in scientific investigation</li> <li>• when is scientific explanation is valid</li> <li>• cognitive status of scientific laws and principles</li> </ul>	Illustration with examples will be given.
4 & 5	Analysis of Procedures and logic of Scientific Explanation <ul style="list-style-type: none"> <li>• Facts</li> <li>• Explanation of facts</li> </ul>	Students will demonstrate their understanding of scientific facts
6 & 7	Aristotle's Philosophy of Science <ul style="list-style-type: none"> <li>• Inductive and deductive methods</li> </ul>	Example of valid arguments. Inductive and deductive stages to give clarity to students. Drawing conclusion from valid premises
8 & 9	Empirical requirements for scientific explanation <ul style="list-style-type: none"> <li>• Structure of a science</li> <li>• Four causes</li> <li>• Demarcation of science</li> </ul>	Students will demonstrate their understanding of arguments.
		MID-SEMESTER TEST
10 & 11	Symposium (Four hour). Invited Guest Speaker will talk on: <ul style="list-style-type: none"> <li>• Role of engineers in society</li> <li>• Risk and safety in engineering</li> <li>• History and specialisation in engineering</li> </ul>	Students will interact with each other and with professionals and demonstrates their understanding of the course.

12 & 13	<p>Engineering</p> <ul style="list-style-type: none"> <li>• Engineers</li> <li>• Technologist</li> <li>• Engineering Draftsmanship.</li> </ul> <p>Engineering training, institutions and post-training capacity building</p>	<p>Students will demonstrate their knowledge of the different cadre in the engineering profession and the important of training in capacity development in engineering.</p>
14	<p>Test</p>	<p>Ability of the students will be evaluated.</p>
15	<p>REVISION</p>	<p>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.</p>