MEC7112: Manufacturing Processes and Product Quality Control

Hours per semester				Weighted Total Mark	Weighted Exam Mark	Weighted Continuous Assessment Mark	Credit Units
LH	PT	TH	CH	WTM	WEM	WCM	CU
45	00	00	45	100	60	40	3

Course description

This course is designed to present the concept of total quality control through the study of techniques presently used by industry.

Course objectives:

Students will learn to view quality from a variety of functional perspectives and in the process, gain a better understanding of the problems associated with improving quality. To equip students with the knowledge of quality tools utilized in service and international/environments and the ability to select the best tools in a particular context.

Learning objectives:

Upon completion of this course the student should be able to do the following;

- Compare and contrast the key elements of total quality.
- Explain the rationale for the total quality approach to doing business.
- Examine and describe the relationship between quality and competitiveness.
- Compare and contrast the tools used in the total quality setting.
- Define decision making and examine problem solving as it relates to total quality.
- Explain the requirements for total quality implementation

Course content:

- Introduction, evolution and integration of total quality management in Organizations (4 hours)
- Quality management philosophies and frameworks (4 hours)
- Process management and performance measurement (4 hours)
- Quality in product and process design (6 hours)
- Defining quality characteristics and diagnosing quality problems (6 hours)
- Statistical Process Control (6 hours)
- Lean and agile management (6 hours)
- The sixth sigma approach (4 hours)
- Building and sustaining Total Quality Management in organizations (5 hours)

Delivery Method:
The teaching of students will be conducted through lectures, tutorials, short classroom exercises, case studies, group discussions among the students and projects aimed at solving real life problems. The lecture material will be availed to the students in advance to enable

them have prior reading. Solving real life problems in each theme or a number of topics will enhance the students' understanding of the problem based learning techniques

Method of assessment

Assessment will be done through coursework which will include assignments, class room and take home tests, project work and presentations and a written examination. Course work will carry a total of 40% and written examination carries 60%. Coursework marks will be divided into; Assignments 5%, Tests 10% and Practical Work 25%.

Reading list/references

1. Evans. J.R. and Lindsay, W.M (2008), Management for Quality and Performance Excellence, 7th Edition HARD BOUND, Thomson South-Western Publishing
2. Jiju Antony and David Preece; Editors, (2002), Understanding, Managing and Implementing Quality Frameworks, techniques and cases, Routledge, London.
3. James Fairfield Sonn , (2001), Corporate Culture and the Quality Organisation, Quorum Books., Westport, CT. ISBN 0-89930-903-8
4. Greg Bounds, Lyle Yorks, Mel Adams, Gipsie Ranney, (1994), Beyond Total Quality Management: Toward The Emerging Paradigm, Irwin/McGraw-Hill, ISBN-10: 0070066787, ISBN-13: 978-0070066786