COURSE SYLLABUS

DIVISION: Workforce Services **Revised:** January 2015

CURRICULUM: Electrical Electronics Engineering Technology

COURSE NUMBER AND TITLE: ELE 201, Instruments & Instrument Analysis

CREDIT HOURS: 3 **HOURS/WEEK LECTURE: 2**

HOURS/WEEK LAB: 3 **LECTURE/LAB COMBINATION: 5**

I. CATALOG DESCRIPTION:

Presents assignments and individual projects to supplement the student's course of study. Requires the selection, operation and interpretation of laboratory instruments. May require formal reports to demonstrate state- of-the-art techniques

II. RELATIONSHIP OF THE COURSE TO CURRICULUM OBJECTIVES:

Prepares the student to start utilizing the various devices and equipment that they have been studying

III. REQUIRED BACKGROUND/PREREQUISITES/COREQUISITES:

Student must have completed the first four terms or have the instructor's permission.

IV. COURSE CONTENT:

Lecture and laboratory assignments will cover these instruments and applications:

1. Meter movements (taut band) (pivot and jewel) Meter resistance (internal) Meter loading, meter shunts and multipliers.
2. Leakage testers, hi-pot tests
3. Maximum power transformer theorem
4. PH meters
5. Lasers
6. Ultra-sonic generators
7. Bausch and Lomb Spectronic 20 (colometer/spectrophotometer)
8. Dip oscillators
9. Simpson 604 Recording voltmeter
10. Gauss meters
11. Individual assignments for a formal report by each student for an instrument that the instructor and student agree upon

V. LEARNER OUTCOMES : **VII. EVALUATION:**

Demonstrate an understanding of safety around instruments, measuring devices and electricity in laboratory settings.	Written quizzes and tests Oral and written reports Homework and projects
Demonstrate an understanding of principles and theory of instrument analysis.	
Demonstrate the knowledge of storing, maintaining and calibrating instruments.	
Demonstrate an understanding of the techniques used to troubleshoot instruments.	
Demonstrate an understanding of how to use instruments in the problem solving process.	
Demonstrate an understanding of the correct operation of measurement devise.	
Demonstrate an understanding of cables, software and tools used with the instruments.	
Understand the importance of proper record keeping when using instruments.	

VII. The course supports the following general education goals/objectives:

DCC Educational Objectives

- Communication
- Critical Thinking
- Information Literacy
- Quantitative Reasoning