APPLY ANALOGUE ELECTRONICS II

UNIT CODE: 0714441 11A

TVET CDACC UNIT CODE: ENG/OS/MDE/CC/10/5/MA

UNIT DESCRIPTION

This unit covers the competencies required in applying analogue electronics II. These competencies include; building amplifier circuits, constructing signal generators, constructing signal filter circuits and applying opto-electronics

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function	**PERFORMANCE CRITERIA** These are assessable statements which specify the required level of performance for each of the elements. ***Bold and italicized terms are elaborated in the Range***
1. Build amplifier circuits	1.1 ***Amplifier*** circuit construction components, tools and equipment are assembled as per work requirement 1.2 Amplifier circuits are built as per circuit design 1.3 Amplifier circuits are tested as per work requirement
2. Construct signal generators	2.1 ***Signal generator*** construction components, tools and equipment are assembled as per work requirement 2.2 Signal generator circuits are built as per circuit design 2.3 Signal generator circuits are tested as per work requirement
3. Construct signal filter circuits	3.1 ***Signal filter*** circuit construction components, tools and equipment are assembled as per work requirement 3.2 Signal filter circuits are built as per circuit design 3.3 Signal filter circuits are tested as per work requirement
4. Apply opto-electronics	4.1 Types of Opto-electronics semiconductors are identified as per operation characteristics

	4.2 Lasers and masers are identified as per operations 4.3 Drive requirements are determined as per display.

RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
1. ***Amplifier*** may include but not limited to:	• Operational amplifiers • Classical amplifier
2. ***Signal generator*** may include but not limited to:	• Function generator • Radio Frequency generator • Audio signal generator • Pulse generator
3. ***Signal filter*** may include but not limited to:	• Band pass filters • Low pass filters • High pass filters
4. Lasers may include but is not limited to	• Gaseous lasers • Solid lasers

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Communication skills
- Listening skills
- Problem solving skills
- Organizational skills

- Time management
- Critical thinking
- Mathematical skills
- Geometrical skills
- Electronic troubleshooting
- Interpretation of information
- Technical reporting skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- Entrepreneurship
- Environmental awareness
- Electrical and electronics safety awareness
- Electrical and electronics measurements and units

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Built amplifier circuits as per circuit design 1.1.Tested Amplifier circuits as per work requirement 1.2.Built Signal generator circuits are as per circuit design 1.3.Tested Signal generator circuits as per work requirement 1.4.Built signal filter circuits as per circuit design 1.5.Identified Opto-electronics semiconductors as per operation characteristics
2. Resource implications	The following resources should be provided: 2.1 Appropriately simulated environment where assessment can take place

	2.2 Access to relevant work environment 2.3 Resources relevant to the proposed activities or tasks
3. Methods of assessment	Competency in this unit may be assessed through: 4.1 Practical assessment 4.2 Project 4.3 Portfolio of evidence 4.4 Third party reports 4.5 Written tests 4.6 Oral questioning
4. Context of assessment	Competency may be assessed in a: 4.1.Workplace or 4.2.simulated workplace
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector and workplace job role is recommended.