



**COMPETENCY BASED CURRICULUM  
FOR  
ELECTRICAL ENGINEERING (POWER OPTION)**

**KNQF LEVEL: 6**

**ISCED PROGRAMME CODE: 0713 554B**



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## **SECURITY SYSTEM INSTALLATION**

**UNIT CODE:** ENG/CU/PO/CR/06/6/B

### **Relationship to Occupational Standards**

This unit addresses the unit of competency: Install Security Systems

**Duration of Unit:** 110 hours

### **Unit Description**

This unit covers the competencies required in installing of security systems. Competencies includes; security system design, marking out of security systems zones, laying system cables, mounting accessories, terminate system cables and testing of the system.

### **Summary of Learning Outcomes**

1. Design security system
2. Mark out security system zones or call points
3. Lay system cables
4. Mount accessories
5. Terminate system cables
6. Test and inspect security system

### **Learning Outcomes, Content and Suggested Assessment Methods**

<b>Learning Outcome</b>	<b>Content</b>	<b>Suggested Assessment Methods</b>
1. Design Security system	<ul style="list-style-type: none"><li>• Meaning of Terms</li><li>• Types of security systems e.g<ul style="list-style-type: none"><li>• CCTV</li><li>• Alarms</li><li>• Electric Fence</li></ul></li><li>• Components of security system<ul style="list-style-type: none"><li>• Smoke sensors</li><li>• Vibration sensors</li><li>• Security cameras</li><li>• Transmitters</li><li>• Receivers</li></ul></li><li>• Factors to consider in design of security system</li><li>• Wiring security system</li></ul>	<ul style="list-style-type: none"><li>• Written tests</li><li>• Oral questioning</li><li>• Practical tests</li></ul>

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> <li>• Security system integration with other components</li> </ul>	
2. Mark out security system zones and call points	<ul style="list-style-type: none"> <li>• Meaning of zones in security system</li> <li>• Marking, Piping and fixing tools e.g <ul style="list-style-type: none"> <li>• Scribes</li> <li>• Pliers</li> <li>• Connectors</li> </ul> </li> <li>• Importance of marking</li> </ul>	<ul style="list-style-type: none"> <li>• Oral questioning</li> <li>• Written tests</li> <li>• Practical tests</li> </ul>
3. Lay system cables	<ul style="list-style-type: none"> <li>• Types of cables in security system</li> <li>• Factors to consider in security system cable laying</li> <li>• Segregation in cable laying</li> <li>• Importance segregations</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Written tests</li> <li>• Oral questioning</li> </ul>
4 Mount Accessories	<ul style="list-style-type: none"> <li>• Meaning of terms</li> <li>• Accessories used in security system</li> <li>• Security system control panels</li> <li>• Insulation classes of enclosures e.g. <ul style="list-style-type: none"> <li>• IP 44 (Ingress protection)</li> <li>• IP 55</li> <li>• IP 65</li> <li>• IP 66</li> <li>• IP 67</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Oral questioning</li> <li>• Written tests</li> </ul>
5 Terminate System cables	<ul style="list-style-type: none"> <li>• Meaning of termination</li> <li>• Meaning of Terms</li> <li>• Importance of termination</li> <li>• Cable lugging</li> <li>• Tools used in cable termination e.g. <ul style="list-style-type: none"> <li>• Connectors</li> <li>• Strip Knife</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Oral questioning</li> <li>• Written tests</li> </ul>
6 Test and Inspect Security system	<p>Meaning Testing</p> <p>Types of tests in security system e.g</p> <ul style="list-style-type: none"> <li>• Insulation test</li> <li>• Short circuit test</li> <li>• Continuity test</li> <li>• Arming and disarming tests</li> </ul>	<ul style="list-style-type: none"> <li>• Oral questioning</li> <li>• Written tests</li> <li>• Practical test</li> </ul>

### **Suggested Methods of Instruction**

- Demonstration by trainer
- Practice by the trainee
- Discussions

### **Recommended Resources**

#### **Equipment**

- Drawing instruments

#### **Materials and supplies**

- Computer
- Stationery

#### **Reference materials**

- Manufacturers manuals
- IEE regulations
- KPLC by-laws
- County by-laws