



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

**KNQF LEVEL: 6**

**ISCED PROGRAMME CODE: 0713 554B**



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NAIROBI

## 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

Learning Outcome	Content	Suggested Assessment Methods
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>Scribers</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