

ENGINEERING GRADUATE DEVELOPMENT PROGRAM (EGDP) COURSE OUTLINE

TRAINING SCHEDULE

Duration: 12 Weeks

Training Mode: Blended (Online + Physical Practical Sessions)

- **Online Sessions:** 3 days per week, 2 hours per day (Evenings)
- **Practical Sessions:** Every Saturday, 3 hours

TRAINING SEQUENCE

1. **Electrical and Electronic Industrial Principles (EEIP)**
2. **General Automation (GA)**
3. **Motor Drive Systems and Variable Frequency Drives (MDS & VFDs)**
4. **Programmable Logic Controller (PLC)**
5. **Pneumatics and Electro-Pneumatics (PN & EPN)**
6. **Hydraulics and Electro-Hydraulics (HY & EHY)**
7. **Supervisory Control and Data Acquisition (SCADA)**
8. **Life Skills for Engineers**

COURSE BREAKDOWN

Week 1: Electrical and Electronic Industrial Principles (EEIP)

- Power generation and distribution
- Electrical components and circuits
- Electrical schematics and protection systems
- *Practical:* Circuit assembly, testing, protection devices

Week 2: General Automation (GA)

- Automation systems overview
- Control systems, PLC basics, sensors & actuators
- Signal types and I/O devices

- *Practical:* PLC programming, sensor-actuator integration

Weeks 3-4: Motor Drive Systems and Variable Frequency Drives (MDS & VFDs)

- AC/DC motors, VFD principles and features
- Motor protection and industrial applications
- *Practical:* VFD setup, troubleshooting, PLC integration

Weeks 5-7: Programmable Logic Controller (PLC)

- PLC introduction, architecture, and programming
- Intermediate and advanced ladder logic
- PLC-SCADA-HMI integration
- *Practical:* PLC programming, analog signals, debugging

Weeks 8-9: Hydraulics and Electro-Hydraulics (HY & EHY)

- Fluid power fundamentals, electro-hydraulic systems
- Advanced controls, safety, diagnostics
- *Practical:* Circuit assembly, troubleshooting

Weeks 10-11: Pneumatics and Electro-Pneumatics (PN & EPN)

- Pneumatic systems and logic circuits
- Electro-pneumatic integration and control
- *Practical:* Circuit building, PLC integration

Weeks 12-13: Supervisory Control and Data Acquisition (SCADA)

- SCADA architecture, components, protocols
- Alarm management, data logging, remote control
- *Practical:* SCADA system design, programming

Week 14: Life Skills for Engineers

- Personal branding, networking, communication
- LinkedIn optimization, conflict resolution
- Introduction to technical sales in engineering



KASNEB Towers 10th Floor,
Matumbato Road, Off Hospital Road, Upperhill
P.O. Box 12971 - 00100, Nairobi.
Tel: Airtel: +254 786 630 623
Safaricom: +254 113 626 129
E-mail: enquiries@viscarcapacity.com
www.viscarcapacity.com

Certification: Participants will be awarded a certificate upon successful completion of the program.

Contact Information:

- Email: enquiries@viscarcapacity.com
- Phone: +254 715 389 245