MAGNA SKILLS DEVELOPMENT INSTITUTE

Capacity Building • Professional Training • Organisational Development

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Course Profile Document

Land, Agriculture and Food Sciences

Instrumentation and Project Management Essentials

Prepared as a professional course profile for delegate review, sponsorship approval and organisational training planning.

COURSE CODE	DELIVERY	DURATION	PREPARED FOR
MSDI	**Online / Face-to-Face**	**Flexible**	**Organisation Approval**

Register for this Course **View Online Course Page**

Course Overview

The Instrumentation and Project Management Essentials course by Magna Skills combines foundational knowledge of industrial instrumentation with key project management principles. Participants will not only learn the fundamentals of sensors, control systems, and safety protocols but will also gain insights into project planning, execution, and risk management specific to instrumentation projects. This integrated approach equips participants with a well-rounded skill set for success in the field.

Course Outcomes

1. **Understand Instrumentation Fundamentals:**
   - Define key terms and concepts in instrumentation.
   - Explore the basic principles behind measurement and control.
2. **Learn Instrumentation Devices and Sensors:**
   - Identify and describe common sensors and transducers used in industrial settings.
   - Understand the functioning of pressure, temperature, level, and flow sensors.
3.

Study Control Systems:

- Explore different types of control systems.
- Understand the role of controllers, actuators, and final control elements in a control loop.

4. **Calibration and Maintenance:**
   - Learn the importance of calibration in maintaining instrument accuracy.
   - Understand best practices for instrument maintenance.
5. **Process Control Strategies:**
   - Explore various control strategies, including feedback and feedforward control.
   - Understand the concept of proportional, integral, and derivative (PID) control.
6. **Safety and Compliance in Instrumentation:**
   - Understand safety protocols in handling instrumentation equipment.
   - Familiarize with industry standards and regulations related to instrumentation.
7. **Project Management in Instrumentation:**
   - Introduction to project management principles.
   - Project planning, scheduling, and resource allocation.
8. **Risk Management in Instrumentation Projects:**
   - Identify potential risks in instrumentation projects.
   - Develop strategies for risk mitigation and contingency planning.
9. **Hands-On Lab Sessions:**
   - Apply theoretical knowledge in practical scenarios through hands-on lab sessions.
   - Gain proficiency in using common instrumentation tools and equipment.

Course Outline / Curriculum

Module 1: Introduction to Instrumentation

- Overview of industrial instrumentation
- Basic principles of measurement and control

Module 2: Sensors and Transducers

- Types of sensors (pressure, temperature, level, flow)
- Sensor characteristics and selection criteria

Module 3: Control Systems

- Introduction to control systems
- Components of a control loop

Module 4: Calibration and Maintenance

- Importance of calibration
- Procedures for instrument maintenance

Module 5: Process Control Strategies

- Feedback and feedforward control
- PID control

Module 6: Safety and Compliance

- Safety protocols in instrumentation
- Industry standards and regulations

Module 7: Project Management in Instrumentation

- Project initiation, planning, and execution
- Resource allocation and scheduling

Module 8: Risk Management in Instrumentation Projects

- Identification of project risks
- Mitigation and contingency planning

Module 9: Hands-On Lab Sessions

- Practical application of instrumentation concepts
- Use of common instrumentation tools and equipment

Target Audience

Technical managers, supervisors and engineers who need to develop their managerial skills.

Key Course Benefits

Work-Ready Skills

Delegates leave with practical tools, templates and methods they can apply immediately at work.

Better Institutional Results

The programme supports stronger planning, reporting, compliance, accountability and service delivery.

Sponsor-Friendly

This document is designed to help supervisors, HR units and sponsors approve delegate participation quickly.

Professional Recognition

Delegates receive training documentation and a certificate of completion after successful participation.

Our Training Centres & Delivery Options

Magna Skills offers flexible delivery through face-to-face training centres across Africa and beyond, plus Online / E-Learning for delegates who prefer remote participation.

Southern Africa

Practical training destinations with strong travel access and delegate support.

- Pretoria, South Africa
- Vic Falls, Zimbabwe
- Livingstone, Zambia

East Africa

Popular regional centres for government, NGO and donor-funded project teams.

- Kigali, Rwanda
- Kampala, Uganda
- Nairob
- Zanzibar, Tanzania

West Africa & Islands

Strategic locations for regional networking and executive capacity building.

- Accra, Ghana
- Port Louis, Mauritius

International Executive Venue

Premium destination training for senior teams and international delegates.

- Dubai, United Arab Emirates

Online / E-Learning

Attend from anywhere through live online, blended or self-paced learning options.

- Online, E-Learning
- Remote Teams
- Flexib

Organisation-Based Training

Magna Skills can also arrange dedicated in-house training for ministries, NGOs and companies.

- Onsite
- Custom Dates
- Group Training

Ready to Nominate Delegates?

Use the links below to register, review the live course page or contact Magna Skills for organisation-based training support.

Register / Apply Online | **View Full Course Page**

About Magna Skills

Magna Skills Development Institute provides practical capacity building programmes for government departments, NGOs, public institutions, donor-funded projects and private sector professionals across Africa. Our training approach combines expert facilitation, real workplace case studies, practical tools, post-training support and professional documentation that helps organisations strengthen staff performance and service delivery.

Government Training | NGO Capacity Building | Corporate Workshops | Online Learning | Face-to-Face Training | Certifica

Approval & Authorisation Form

This section may be completed by the organisation, department, HR office, finance office or sponsor approving delegate participation. It can be attached to an internal memo, procurement request or training approval submission.

Organisation / Department	
Delegate Name(s)	
Approved Course	Instrumentation and Project Management Essentials
Preferred Delivery Mode	☐ Online ☐ Face-to-Face ☐ Organisation-Based Training
Preferred Training Venue /Date	
Estimated Number ofDelegates	
Budget / Vote Number	
Contact Person	
Email / Mobile	

Authorised Name _____ Signature / Stamp _____ Date _____