



DEMONSTRATE LOGICAL PROBLEM SOLVING AND ERROR DETECTION TECHNIQUES

Unit Standard: 115367



Course Information



Qualification Title

National Certificate: Information Technology (Systems Development)

Course Title

Demonstrate Logical Problem Solving and Error Detection Techniques

Course Level

5

Course Credits

8

Course Duration

Three days

Cost of Course

R 2 800,00 per delegate (excluding 15% VAT)

Course Overview

This highly interactive and practical course is designed to provide delegates with a sound knowledge of all elements of problem solutions to:

- Describe different approaches to problem solving.
- Use logical operations in descriptions of rules and relationships in problem situations.
- Simplify Boolean expressions with Boolean algebra and Karnaugh maps.
- Describe the basic concepts of error detection.

Systems Development

Who Should Attend?	Intended for a person working with knowledge of problem solving and solution driven activities.
Course Objectives	- The fundamental objective of the course is to allow delegates to an opportunity to be able to conduct or apply algebra methods to find solutions. - Describe different approaches to problem solving. - Use logical operations in descriptions of rules and relationships in problem situations. - Simplify Boolean expressions with Boolean Algebra and Karnaugh maps. - Describe the basic concepts of error detection.
Benefits	Benefits of this course include learning to: - Identify, solve problems, and make decisions in relation to the current systems development environments. - Organise and manage him/herself and his/her activities responsibly and effectively. - Communicate effectively using visual, mathematical and or language skills in the modes of oral and/ or written persuasion when engaging with systems development. - Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exists in isolation. - Contribute to his/her full personal development and the social and economic development of the society at large by being aware of the importance of: reflecting on and exploring a variety of strategies to learn more effectively, exploring education and career opportunities, and developing entrepreneurial opportunities

Course Content

Course Modules	Course modules consist of: 1. Different approaches to problem solving. 2. Top-down; Bottom-up; Systems Approach (at least two) 3. Different problem-solving techniques.
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	4. Situations where specific problem-solving techniques would be more suitable 5. Using the top-down problem-solving approach in real life problems known to the learner. 6. Practice of problem breakdown in picture drawing applications. 7. Logical operators in descriptions of rules and relationships in a problem situation. 8. Usage describes the logical operators by drawing truth tables. 9. Usage provides examples of problem situations where a specific operator can be used. 10. Identify which of the operators should be used to represent given situations. 11. Combine different operators to form Boolean expressions by setting up truth tables. 12. Simplify Boolean expressions with Boolean algebra and Karnaugh maps. 13. The rules of Boolean algebra. 14. Boolean algebra rules to simplify given expressions. 15. Karnaugh maps to represent Boolean expressions. 16. Writing down the simplified expression from the map. 17. The basic concepts of error detection. 18. Common causes of errors. 19. Error isolation techniques. 20. Various testing techniques.
Certification and Assessments	All delegates who complete the summative assessment will be assessed, moderated, and receive a SOR (Statement of Results). Thereafter a Certificate of Competence from WWiSE (or SETA for qualifications) will be issued.

About WWiSE

Who are we?

World Wide Industrial & Systems Engineers (WWiSE) is an ISO consultancy, training, business solutions, and systems implementation firm based in Southern Africa that provides clients with effective business processes management solutions in preparation for ISO compliance. The solutions we provide and implement allow our clients to compete favourably in modern competitive business environments, both locally and internationally. We also strive to be the leading training providers in SHERQ, ISO, Engineering, Finance, Business, and Project Management.

What do we do?

Our services are aimed at the improvement of quality, efficiency, knowledge, and competitiveness of client companies. This service range includes:

- ISO and SHERQ Systems implementation services, whereby we assist clients in meeting the requirements of (but not limited to) ISO 9001, 14001, 22000, 31000, 27001, 20000-1, 50001, and ISO 45001 Standards.
- Integrated Management Systems development whereby we integrate several business systems and management solutions into a single management system to comply with standards.
- Training of all employees (Shop Floor to Executive Management) in the fields of SHERQ, Engineering, Finance, Business, and Project Management to meet job responsibilities and expertise requirements of International Standards.
- ISO and Legal Auditing which includes Gap Analysis Audits, Product, Process, Procedural, and Systems auditing by our registered SAATCA Auditors.
- Customised web-based solutions integrating current systems to be in line with ISO requirements.

We are a Level 1 BBBEE Contributor that specialises in systems development, consultancy, training, and auditing.