



EXCEL
INTERNATIONAL

Course Name: Problem Solving with Technology

1. Course Module Structure

This course is divided into 10 structured modules designed to develop problem-solving skills using modern technology tools and digital platforms. Each module builds progressively, helping learners identify problems, apply logical and computational thinking, and use technology effectively to design solutions in academic, professional, and real-life contexts.

2. Module, 3. Topic & 4. Module for 10

Module 1: Introduction to Problem Solving with Technology

Topics:

- What is problem solving?
 - Role of technology in problem solving
 - Types of problems (simple & complex)
 - Real-world examples
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Module 2: Understanding Problems

Topics:

- Identifying the problem
 - Breaking down complex problems
 - Defining goals and objectives
 - Problem analysis techniques
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Module 3: Computational Thinking

Topics:

- Basics of computational thinking
 - Decomposition
 - Pattern recognition
 - Algorithm design
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Module 4: Digital Tools for Problem Solving

Topics:

- Introduction to digital tools
 - Using spreadsheets and software
 - Online collaboration tools
 - Selecting the right tool
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Module 5: Data Collection and Analysis

Topics:

- Types of data
 - Methods of data collection
 - Organizing data
 - Basic data analysis
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Module 6: Designing Solutions

Topics:

- Generating possible solutions
 - Evaluating alternatives
 - Prototyping ideas
 - Planning implementation
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Module 7: Programming Basics

Topics:

- Introduction to coding concepts
 - Logic building
 - Simple programming structures
 - Writing basic programs
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Module 8: Testing and Debugging

Topics:

- Importance of testing
 - Identifying errors
 - Debugging techniques
 - Improving solutions
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Module 9: Real-World Applications

Topics:

- Case studies using technology

- Solving academic problems
 - Industry applications
 - Project-based learning
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Module 10: Practice and Assessment

Topics:

- Hands-on exercises
- Scenario-based problem solving
- Performance evaluation
- Feedback and improvement**