**1. Getting Started with LabVIEW**

* Front Panel & Block Diagram
* Controls & Indicators
* Controls Palette vs. Functions Palette
* Tools Palette Overview
* Data Types: Numeric, Boolean, String

**2. Basic Programming Structures**

* Constants & Variables
* Structures:
  + While Loop
  + For Loop
  + Case Structure
  + Sequence Structure (Flat & Stacked)
  + Event Structure
* Timing Functions (e.g., Wait(ms), Elapsed Time)
* Highlight Execution & Debugging Tools

**3. Data Handling in LabVIEW**

* Arrays: Creation, Indexing, Manipulation
* Clusters: Creating, Bundling/Unbundling
* Tables: Creating, Updating, ListBox, Multicolumn ListBox
* Type Conversion (Number <-> String etc.)

**4. Modular Code Design**

* SubVIs: Creating and Reusing
* Icon and Connector Pane Setup
* Error Handling Basics (Error In/Error Out clusters)

**5. Advanced Data Operations**

* Property Nodes
* Local & Global Variables
* Formula Nodes (Custom Math/Logic)

**6. File I/O**

* Read/Write Text Files

**7. Communication & Integration**

* **ODBC Database Connectivity**:
  + Setting up DSN
  + Using Connection Strings
  + Executing SQL Queries (Select, Insert)
* **HTTP Requests**:
  + GET, POST Methods
  + Using HTTP Client VIs
  + Parsing JSON Responses

**8. State Machines**

* Introduction to State Machines
* Implementing State Machines using Case Structures
* Practical Use Cases (e.g., test sequences, device control)

**9. Data Visualization**

* Charts vs. Graphs (Waveform Chart, XY Graph, etc.)
* Real-Time Plotting
* Display Formatting and Scaling

**10. User Interface Design0020**

* Customizing Controls and Indicators
* Using Tabs and Decorations
* Event-driven UI Programming

**11. Debugging & Testing**

* Probes
* Breakpoints
* Execution Highlighting
* Error Clusters & Custom Error Handling