GS1 Standards Certificate Course - Curriculum

Learn how GS1 Standards help you identify products, improve business processes, and reduce costs.

COURSE CURRICULUM

1. Basics and Principles of the GS1 System

This first section explains the foundational principles of the GS1 System (listed just below) and acts as an introduction to the GS1 General Specifications.

- GS1 System Principles
- Identification System Policies
- GS1 Company Prefix
- Sunrise and Sunset Dates

2. Application Identification

The GS1 General Specifications can be thought of as an application standard. That means you apply these specifications for identification and barcode marking for the areas of application listed just below. For example, there are specific rules around how to identify and mark (put a barcode on) items that you wish to offer for sale in a retailer setting. There are other rules about how to identify and mark shipping containers when you ship those items you want to offer for sale- etc. This section explains each area of ‘application’ in detail.

- Trade Items
- Logistic Units
- Assets
- Locations
- Service Relationships
- Special Applications

3. GS1 Application Identifier (AI) Definitions

The GS1 System uses Application Identifiers (2, 3, & 4 digit numbers) to define the meaning, format and length of data that is encoded into barcodes. This section explains how to use AI’s and details each of the AI’s with definitions and descriptions of their format and length.
Course Curriculum Continued


The GS1 System has 2 types of data- Keys (which are primary identification) and attribute data (which give information about the Key). This section details how each of the Keys are allocated and what attribute data must be paired with which Key.

- GTIN Rules
- SSCC Rules
- Allocating GS1 System Asset Identifiers
- GLN Rules
- GSRN Rules
- GDTI Rules
- GINC Rules
- GSIN Rules
- GCN Rules
- Data Relationships
- Human Readable Interpretation (HRI) Rules
- Multiple Bar Code Management Practices for Consumer Trade Items (cross-sector)

5. Data Carriers

We call barcodes and RFID tags- data carriers. Each different data carrier has specific rules about how it is made called code/decode algorithms. This section gives an overview of each of the GS1 System data carrier decode algorithms and specifications as well as rules to be followed when assessing the print quality of the carrier.

- Linear Bar Codes - EAN/UPC Symbology Specifications
- Linear Bar Codes - ITF-14 Symbology Specifications
- Linear Bar Codes - GS1-128 Symbology Specifications
- Bar Code Production and Quality Assessment
- Linear Bar Codes – GS1 DataBar
- Two Dimensional Bar Codes – GS1 DataMatrix Symbology
- Composite Bar Codes
- Two Dimensional Bar Codes – GS1 QR Code Symbology

6. Symbol Placement Guidelines

The GS1 System has specific rules about where to put the barcode on your package to aid efficiency increases. This section details all of those placement rules.

- General Placement Principles
- General Placement Guidelines for Point-of-Sale
- Placement Guidelines for Specific Package Types
- GS1 Logistics Label Design
- Symbol Placement for Regulated Healthcare Trade Items
Course Curriculum Continued

7. AIDC Validation Rules

AIDC is Automatic Identification and Data Capture. This is machine reading and processing of information with little or no human intervention. This section details some of the miscellaneous rules around the facilitating of machine readable data.

- Synopsis of Message Processing
- Conversion of Weights and Measures in User Applications
- Extended Example of a Trade Item Hierarchy
- Elements Strings Represented in Data Carriers
- Element Strings with Pre-Defined Lengths Using Application Identifiers
- The Function 1 Symbol Character (FNC1)
- National Healthcare Reimbursement Number (NHRN)
- Check Digit Calculations
- GTIN-12 and RCN-12 in a UPC-E Bar Code
- The GS1 Subset of International Standard ISO/IEC 646
- Determination of Century in Dates

8. GS1 Standards Glossary of Terms

The GS1 System uses many terms that could be confusing and a plethora of acronyms. All of these terms and acronyms are defined for you in this section.

- GS1 Glossary Terms and Definitions
- GS1 Abbreviations
- Legacy (Retired) Terms