Machine Vision and Quality Control with the Cognex In-Sight 2000 – Lab Course 2

COURSE OUTLINE

Catalogue Number	8089-0000
Category	Mechatronics
Duration	15 Hours
Prerequisite Courses	Machine Vision and Quality Control with the Cognex In-Sight 2000 – Lab Course 1

Activity 1: Types of Vision Systems

Introduction to the Course

Review of Vision System Components

Overview of Different Types of Vision Systems (1D, 2D, and 3D)

Activity 2: Vision Systems and Manufacturing

Integration of Vision Systems in Manufacturing

Processing Steps

Applications in Manufacturing

Results and Communications

Activity 3 (Lab): The Color Tool

Using Colors In QC

Creating QC Applications with the IS 2000's Color Pixel Tool

Activity 4 (Lab): Inputs and Outputs

Types of Input and Output Devices in Manufacturing

Communicating Using the IS 2000

Defining Inputs and Outputs

Activity 5 (Lab) Deployment

Implementing System Deployment Utilities

Assigning Access Levels

Determining Access Levels for Specific Roles

Activity 6 (Virtual Lab): Setting Up an Emulator

Introduction to the Emulator

Applications of Emulation

Getting Connected

Using the Emulator for the First Time

Exploring Emulated Cameras

Activity 7 (Virtual Lab): Calibration

Review of Edge Detection

Gauging Applications

Calibrating with An Emulated Camera

Activity 8 (Virtual Lab): Identification Tools

OCR and OCV

Types of Identification Tools

Applications of Identification Tools

In-Sight Identification Tools

Activity 9 (Virtual Lab): Filtering Tools

Applications of Filters in Machine Vision

Neighborhood and Point Filters

In-Sight Filter Types

Applying Filters in In-Sight Explorer

Activity 10 (Virtual Lab): Logic Tools

Logic Statements and Functions

AND, OR, & NOT Logic

In-Sight Math and Logic Tools

Applying Logic to EasyBuilder jobs

Activity 11: Introduction to General Spreadsheets (Optional)

General Overview of Spreadsheets

Dealing with Spreadsheet Data

Referencing

Charts and Graphs

Activity 12 (Virtual Lab): Introduction to Spreadsheet View: Part 1

Spreadsheet View Quick Tour

Adding Vision Tools, Functions, and Snippets

Tool Property Sheets

Constructing Tool Logic

Locating Parts with the FindPatterns Tool

Activity 13 (Virtual Lab): Introduction to Spreadsheet View: Part 2

Defect Detection with the ExtractHistogram Tool

Measuring with the FindSegment Tool

Gauging Holes with the ExtractBlob Tool

Error Handling

Creating a User Interface