

Robotics & Materials Handling 1 and 2 with SCORBOT-ER 4u

SPECIFICATIONS:

Robotic system

SCORBOT-ER 4u mechanical arm and Controller-USB

Software:

Course 1: SCORBASE for Controller-USB

Course 2: RoboCell for Controller-USB

Additional components:

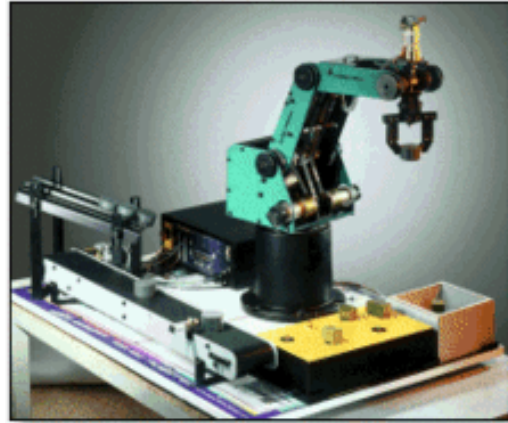
Linear conveyor with photoelectric sensor

Gravity parts feeder

Parts bin and parts

I/O experiment table

Laminated coordinate grid



Robotics & Material Handling 1 (RMH1)

LEARNING & MANAGEMENT TOOLS:

Topics - Course 1:

Introduction to Robotics

Using Robotic Control Software

Recording Robot Positions

Writing and Running a Robot Program

Cartesian Coordinates

Inputs and Program Jumps

Outputs

Joint and XYZ Coordinate Systems

Relative Positions

Joint and XYZ Coordinate Systems

Subroutines

Contact and Non-Contact Sensors

Servo Control of the Conveyor

I/O Control of the Conveyor

Conclusion

Topics - Course 2:

Introduction to Robotics
Basic Robotic Programming Tools
Manipulating Blocks Project
Programming the Robot to Execute Circular Movements
Drawing a House
Roll and Pitch
Block Alignment Project
Feeders and Templates
Peripheral Devices
Linear Slidebase Project
Encoders
Conditional Branching
Programming with Conditional Branching
Analog Inputs and Outputs
Programming a Sorting System Project

Content format and delivery:

Delivered to student desktops via the Internet or LAN network

Interactive, multimedia format with high-quality graphics, animations, video, audio and demonstrations that teach complex procedures and show real-world applications

Contains small, easily assimilated segments of instruction

Contains approximately 15 activities, each of which provides 45-50 minutes of learning content

Each activity clearly defines learning objectives, materials required, related competencies and skills, self-check assessments, background and theory, and detailed procedures in the form of tasks

Includes computer-based tests and self-check assessments using many types of questions, such as multiple-choice, true/false, fill-in-the-blank, drag and drop, hotspot

Includes subject-related glossary and set of resource links

Instructor resources (as appropriate)

Hardware and/or software installation and operation guides in printable format
Programming and/or project solution files

Learning management system: LearnMate LMS

Grade tracking and automatic grade recording

Detailed tracking of competencies and skills

Tracking of module activity at both exposure and mastery levels

Easy to use content authoring tool for creating and editing SCORM-compliant course content; supports numerous multimedia file formats

Assessment utility enables nine types of questions, linking to multimedia files, hints, objectives or competencies, and answer feedback

Over 30 predefined reports (e.g., grades, transcripts) with filters to generate specific data output

Security settings to ensure protection of content and records

Collaboration tools include chats, bulletin boards, internal messaging