Robotics Concepts & Programming

Fundamentals of Robotics courses provides students the fundamental skills needed to operate, maintain, program and test robotic systems. Building on Fundamentals of Robotics, Advanced Robotic Programming courses explores advanced robotic programming.

**Course Information**

<table>
<thead>
<tr>
<th>Type</th>
<th>Virtual</th>
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<tbody>
<tr>
<td>Languages</td>
<td>English</td>
</tr>
<tr>
<td>Hours of instruction per course</td>
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**Fundamentals of Robotics for SCORBOT-ER 4u**

The Fundamentals of Robotics for SCORBOT-ER 4u course features RoboCell, a 3D-solid modeling robotic simulation software, which allows students to develop programming skills through a variety of simulated robotic workcells.

**Course Outline**

- Introduction to Robotics
- How Robots Work
- Using Robotic Control Software
- Recording Robot Positions
- Programming a Simple Pick and Place Task

**Fundamentals of Robotics for SCORBOT-ER 9Pro**

In Fundamentals of Robotics for SCORBOT-ER 9Pro course, students use RoboCell to gain a greater understanding of the robotics concepts, programming, and capabilities.

**Course Outline**

- Introduction to Robotics
- How Robots Work
- Using Robotic Control Software
- Recording Robot Positions
- Programming a Simple Pick and Place Task

**Advanced Robotics Programming with SCORBOT-ER 4u**

Building on Fundamentals of Robotics, Advanced Robotic Programming with SCORBOT-ER 4u course explores advanced robotic programming. Using RoboCell, students gain a greater understanding of the robotics concepts, programming, and capabilities.

**Course Outline**

- Programming with Subroutines
- Digital Inputs
- Digital Outputs
- Delivering Materials with a Conveyor Project
- Conditional Branching
- Programming with Conditional Branching - Project #2
- Analog Inputs and Outputs
- Loops and Counters
- Contact and Non-Contact Sensors
- Programming a Sorting System Project

**Advanced Robotics Programming with SCORBOT-ER 9**

In Advanced Robotics Programming with SCORBOT-ER 9 course you will use RoboCell to teach positions, write programs, debug robotic applications, and test their execution offline using a virtual SCORBOT ER 9Pro robot.

**Course Outline**

- Programming with Subroutines
- Digital Inputs
- Digital Outputs
- Delivering Materials with a Conveyor Project
- Conditional Branching
- Programming with Conditional Branching - Project #2
- Analog Inputs and Outputs
- Loops and Counters
- Contact and Non-Contact Sensors
- Programming a Sorting System Project

**Ordering Information**

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<thead>
<tr>
<th>Course</th>
<th>Code</th>
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<tr>
<td>Fundamentals of Robotics for SCORBOT-ER 4u</td>
<td>77-3046-0000</td>
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<td>Advanced Robotics Programming with SCORBOT-ER 4u</td>
<td>77-3048-0000</td>
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<tr>
<td>Fundamentals of Robotics for SCORBOT-ER 9Pro</td>
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<tr>
<td>Advanced Robotics Programming with SCORBOT-ER 9</td>
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Robotics series courses includes LearnMate®, Intelitek’s innovative e-learning platform. Self-paced interactive LearnMate content may be deployed stand-alone or through the robust learning management system (LMS). The LearnMate e-learning suite provides everything needed for the ultimate blended learning experience:

- SCORM-compliant interactive content
- Anytime, anywhere accessibility
- Student and class management
- Grade tracking
- Skill/competency reporting mapped to national academic skill standards

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