



Robotics Engineering



Description

The Robotics Engineering Level I curriculum introduces students to the exciting field of robotics. Students learn the mechanical design and construction of robots through hands-on activities. Activities include the construction of a remote control robot and the use of SOLIDWORKS software.

Skills

- Read, interpret, and construct CAD drawings
- Construct a robot
- Develop problem solving skills
- Test robotic mechanisms

Knowledge

- Physics
- Engineering design principles
- Electronics wiring and implementations
- Radio control system usages
- Robotic components and uses
- Common components of pneumatic systems

Activities

- Activity 1 Introduction
- Activity 2 SOLIDWORKS
- Activity 3 SOLIDWORKS - Assembly
- Activity 4 Drive Train
- Activity 5 Construct the Chassis
- Activity 6 Introduction to Pneumatics
- Activity 7 Pneumatics
- Activity 8 Add the RC Components
- Activity 9 Robot Operation
- Activity 10 Post-Test and Wrap-Up
- Activity 11 Bonus Activities
- Activity 12 Challenge
- Activity 13 Open-Ended Challenge
- Activity 14 Careers
- Activity 15 Internet

Standards

Math, Reading, Problem Solving

Module Includes:

Student Workbook, Instructor's Manual, Installation CD, SOLIDWORKS® Software, Gears IDS kit, Headphones (2)
Computer is required and sold separately.

Requirements

Computer is required and sold separately.

Curriculum Specifications

The student workbook contains concise hands-on procedures, illustrations, screen captures, and photographs, which reinforce the multimedia content. Special attention is placed on interesting and relevant graphics to encourage visual learning. DEPCO Studio is an effective curriculum delivery system that uses the power of the computer to deliver educational content. By using interesting digital videos, full-color animations, professional quality narrations, challenging interactions, relevant photographs, and computer aided instruction (CAI), DEPCO has modernized the way subject matter is taught. Curriculum consists of 15 units: 10 basic activity days with Pre-Test, Post-Test, and Activity Review Questions, and 5 enrichment activities that include vocabulary reinforcement, problem-solving, open-ended challenges, careers, and Internet activities. An instructor's section includes: lesson plan