

# NAO - Humanoid Robotics Level 1



Academic Representative



Technology Education Concepts

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## Description

The NAO—Humanoid Robotics Level 1 curriculum introduces students to the world of robotics. Students learn about early robots and their inventors as well as how the field of robotics has evolved. Students learn about the NAO robot and how it has revolutionized the field of robotics.

Students also learn how to program the robot to perform various tasks using the telepathe and Choregraphe® software.

## Objectives

- Identify early forms of robots and inventors in the field of robotics
- Identify the various mechanical and electrical components of the NAO robot
- Use Monitor to test the sensors and temperatures of the NAO robot parts
- Use Choregraphe® to program the NAO robot to perform various tasks
- Use basic Python scripting to program the NAO robot
- Explore the benefits of robotics in other fields of study

## Activities

- Lesson 1: Evolution of Robotics
- Lesson 2: Introduction to the NAO Robot
- Lesson 3: Safety and Set Up
- Lesson 4: Introduction to Monitor
- Lesson 5: Telepathe
- Lesson 6: Introduction to Choregraphe®
- Lesson 7: Basic Interactions I
- Lesson 8: Basic Interactions II
- Lesson 9: Vocal Recognition
- Lesson 10: Facial Detection and Recognition
- Lesson 11: Object Learning and Recognition
- Lesson 12: Timeline Animation with NAO
- Lesson 13: Timeline Animation with 3D NAO
- Lesson 14: Behavior Layers
- Lesson 15: Walking
- Lesson 16: Logic Boxes
- Lesson 17: Menu Creation and Data Transfer
- Lesson 18: Basic Python Scripting
- Lesson 19: Python Scripting with NAO
- Lesson 20: Challenge and Review

## Standards

DEPCO courseware is developed from the Common Core State Standards for Mathematics and the National Skill Standards Board (NSSB). Close correlation with these standards will provide students with the skills and knowledge necessary for success in the workplace.

## Module Includes:

Training Manuals, Instructor's Manual, Installation CD, NAO Robot, Monitor Software, Choregraphe® Software, USB Key (2), Power Supply, Object Recognition Card, Object Recognition Ball (2), Carrying Case (Optional)

Computer is required and sold separately.

Note: A router or Wi-Fi connection is needed to program the robot. This equipment is not included.

## Curriculum Specifications

The Industrial Training Manual 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 utilizes 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.

Units are 20 lessons of instruction per level with lesson reviews. An instructor's manual includes: lesson outlines, installation guide, answer keys, suggestions, troubleshooting, and pages to copy.

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