

**New Horizons Regional Education Center
Advanced Robotics and Fiber Optics
Course Syllabus**

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Office Hours: 7:20am- 7:35 am and 10:15am- 10:45am
12:00pm-12:14pm and 2:45pm- 3:00pm

Course Description: The Advanced Robotics and Fiber Optics program provides instruction in basic computer programming, electronics, motor control, and feedback systems used in assembly and manufacturing settings. In addition, students learn how to program a microcontroller for robotic manipulation. The instructional framework for this competency-based CTE course is designed to help students achieve the validated, specific tasks and/or competencies considered essential for working in the following occupational fields: Science, Technology, Engineering and Mathematics. Some employment positions are Mechanical Engineer, Quality Technician, Process Control Technician and Robotician.

Required Textbooks, Lab Books and Software:

Text: Introduction to Electronics Fifth Edition (Chapters 25-38)

Author: Gates

Publisher: Thomson Delmar Learning

Lab books: Introduction to Electronics Fifth Edition (Chapters 25-38)

Author: Gates

Publisher: Thomson Delmar Learning

Textbook: Introduction to Fiber Optics

Author:

Publisher:

Lab books: Fiber Optics Cabling Workbook -

Author: Heathkit

Publisher:

Simulation Software:

(Amatrol) Pegasus Robotics I and II

Lap 1: Introduction to teach pendant

Lap 2: Programming

Lap 3: Interfacing and Integration

(Intellitek) Scorbot Robot

Robocell teachpendant

Conveyor system

Manufacturing workcell

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Simulation Software and Trainer Systems:

Electrical Systems I and II
Control Systems I and II
Pneumatics and Hydraulics
Programmable Logic Control (PLC;s)
Fiber Optics Trainer

Course Fees:

NOCTI Testing: \$29.50 (National Credentialing tests, 1 pretest and 1 post test)
Class supply fee: \$16.00
Total fees: \$ 45.50

Materials for class:

Quantity	Item
2	Pencils (#2 lead)
2	Pens (black or blue ink color)
1	Three subject spiral notebook or 3 single subjects
1	Pack of college ruled filler paper
1	Calculator with scientific and engineering functions
1	Composition book for Engineering notebook
1	Combination Lock for locker

Evaluation of Students Performance:

Grading Criteria:

Employability skills: (example: Attitude, Work Ethics, etc)	30%
Related Instruction: (Class assignments, tests, quizzes, projects, labs)	35%
State Competencies: (Defined by the Department of Education)	35%

Grading system:

90-100 = A
80-89 = B
70-79 = C
60-69 = D

**All software programs, text books and tools/equipment used in class are provided by the school. Please make sure all items are brought to school within the first week of school to insure a successful school year !

