Discipline: Supply Chain Automation

Degree Credit [X]
Non Credit [ ]
Nondegree Credit [ ]
Comm Service [ ]

Riverside Community College District
Integrated Course Outline of Record

Supply Chain Automation 1

College: R___ M___ N_X_
Lecture Hours: 36
Lab Hours: 54
Units: 3.00

SCA-1: Introduction to Automated Warehousing

COURSE DESCRIPTION

Prerequisite: None.

An industrial technology overview course covering the basic knowledge and skills needed for supply chain technicians to successfully work in an automated distribution center. Introduction to the troubleshooting and maintenance of complex electromechanical systems is a major focus of this class. 36 hours lecture and 54 hours laboratory.

SHORT DESCRIPTION FOR CLASS SCHEDULE

An industrial technology course introducing the basic knowledge and skills needed for a supply chain technician to work in an automated high-tech distribution center.

ENTRY SKILLS
None.

STUDENT LEARNING OUTCOMES
Upon successful completion of the course, students should be able to:

Articulate safety procedures related to working in a distribution center

Describe the functions performed by PLC's, scanners and label makers.

Describe correct scales, symbols and meanings used in diagrams and schematics.

Perform electro-mechanical systems repairs using appropriate troubleshooting methods.

COURSE CONTENT

1. Workplace Safety
    a. Safety
    b. Personal Protective Equipment
    c. Lockouts and Tagouts
    d. Hazardous Materials
2. Maintenance Principles
    a. Preventative Maintenance
    b. Predictive Maintenance
    c. Troubleshooting
3. Mechanical Systems
    a. Hydraulics
    b. Pneumatics
    c. Lubricants
    d. Bearings
    e. Oil Seals
    f. Mechanical Drives
    g. Couplers
    h. Belts/Rollers
    i. Belt Alignment
    j. Blueprint Reading
4. Electrical Systems
    a. Electrical Principles
    b. Circuits
    c. Diagrams
    d. Power Distribution
    e. Test Equipment
5. Electronics
    a. Programmable Logic Controllers
    b. Solid State Devices
    c. Scanners/Optics
6. Supply Chain Principles
    a. Shipping/Receiving
    b. Storage
    c. Inventory Control
7. Career Opportunities
    a. Educational Pathways
    b. Career Pathways

METHODS OF INSTRUCTION

Methods of instruction used to achieve student learning outcomes may include, but are not limited to:

- Class lectures using multimedia technology will promote student development of the major topics related to supply chain technology.
- A series of assigned writing assignments will develop critical thinking and communication skills for situations and problems currently found in high tech distribution center.
- Assigned problem solving tasks and activities found in distribution centers will exercise student interpretation, analysis and evaluation skills.
- Hand-outs and web links will enable students to recognize standard symbols, circuits, devices and methodologies used in distribution centers.
- Small group discussions, exercises and team building activities will develop student interpersonal skills, verbal communication and synergistic problem solving skills that are often needed in distribution centers.
- Invited guest lecturers will bring current material handling maintenance experiences into the classroom so students may assess industry trends and integrate important aspects into their future goals.
- Laboratory experiments and exercises will reinforce lecture and reading assignments so students can practice skill building to improve retention.

METHODS OF EVALUATION

Students will be evaluated for progress in and/or mastery of learning outcomes by methods of evaluation which may include, but are not limited to:

- Quizzes and tests are designed to assess the students' ability to recall, analyze, and apply key concepts related to supply chain technology, including the purpose and operation of various components and equipment commonly found in distribution centers.
- Participation in laboratory tasks as required by the instructor is to ensure progress towards mastery of topics related to supply chain technology and repair equipment.
- Both a mid-term and final examination is designed to assess the students' progress towards mastering the concepts, troubleshooting and repair techniques commonly used in distribution centers.
- A term paper will be required from students, wherein they will evaluate key concepts and materials related to supply chain technology. This term paper will demonstrate the students' ability to articulate key concepts and demonstrate the ability to effectively communicate in writing.

SAMPLE ASSIGNMENTS

Outside-of-Class Reading Assignments

- Reading assignments will be given to prepare students to receive new lecture information related to supply chain technology. Additionally, students will be able to solidify information already received in previous lectures and readings
- Students will be given journal articles to read that relate to supply chain technology.
- Students may be asked to read technical repair manuals to help them better understand repair procedures related to supply chain technology.

Outside-of-Class Writing Assignments

- Students will be required to give written documentation of their work done in lab exercises.
- Written responses to supply chain related textbook homework questions will be required.

Other Outside-of-Class Assignments

- A term-paper will be required from students, wherein they will evaluate some aspect of what they learned over the course of the semester. This will demonstrate the ability of each student to communicate effectively in writing.

COURSE MATERIALS

All materials used in this course will be periodically reviewed to ensure that they are appropriate for college level instruction. Possible texts include:

Green, Denis (2010). *Industrial Maintenance* Orland Park Ill American Technical Publishers.
Reddy, L. & Hutton, R. (2009). *Supply Chain Logistics, Mid-Level Technical Knowledge* (Second/e). Alexanria, VA Manufacturing skill standards council.
Reddy, L. & Hutton, R. (2009). *Supply Chain Logistics, Foundational Knowledge* (Second/e). Alexandria, VA Manufacturing Skill Standards Council.