Course Outline

Course Title: Industrial Pneumatics
Semester Course Prefix and Number: PAS 1244
Old Quarter Course Prefix and Number:

Number of Credits: 2
Semester(s) Offered: Fall
Class Size: 24

Number of Lecture Credits: 0
Number of Lab Credits: 2
Number of Lab Hours: 4
Number of Studio/Demonstration/Internship Credits:

Course Purpose Code:

- 0 – Developmental Courses
- 1 – Non-transferable, General Education
- X – 2 – Technical course related to career programs
- 3 – College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
- 4 – Other college course not considered a part of general education (MNTE) (e.g. computer science, health, physical education)
- 5 – Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements or intended for transfer.
- 9 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

Catalog Description:

This course covers the general fundamentals of machine control utilizing pneumatics and electropneumatics. Concentrates on pneumatic systems, control devices and actuators related to machine control with practical applications involving robotic workcells, pick and place robots, parts handlers, motion control and interfacing of air and electrical circuits.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): None
Reading Prerequisite: None
Composition Prerequisite: None
Mathematics Prerequisite: None

Career Programs and Transfer Majors Accessing this Course:

Process Automation Systems Diploma
Process Automation Systems AAS

Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:
(Note: No more than two goals may be met by any one course. Curriculum Committee review and the Chief Academic Officer’s approval are required.)

0. X None
1. Communications
2. Critical Thinking
3. Natural Sciences
4. Mathematical/Logical Reasoning
5. History and the Social and Behavioral Sciences

6. The Humanities and Fine Arts
7. Human Diversity
8. Global Perspectives
9. Ethical and Civic Responsibility
10. People and the Environment
Learning Outcomes: (including any relevant competencies listed in the Minnesota Transfer Curriculum)

Following the completion of this course the student will be able to demonstrate the ability to:

1.) Work safely with pneumatic fluid power systems.
2.) Identify the basic schematic symbols related to pneumatic devices.
3.) Apply the laws of physics related to temperature, pressure and volume.
4.) Apply the laws of physics related to force, pressure and area.
5.) Identify and use simple pumps and compressors
6.) Identify and use directional and variable flow rate control valves.
7.) Identify and use pneumatic actuators.
8.) Observe proper safety procedures.
9.) Work cooperatively.
10.) Apply critical thinking skills.

Student Assessment Methods:

Lab assignments, worksheets, papers, and tests.

Use of Instructional Technology: (includes software, interactive video and other instructional technologies):

Power Point Software, videos, software based lab simulators.

Outline or Statement of Major Course Content:

See “Learning Outcomes” above.

Additional Special Information: (special fees, directives on hazardous materials, etc.)

Laptop Computer Lease

Transfer Information: (Please list colleges/majors that accept this course in transfer.)

None

Approvals:

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<th>Body</th>
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<tr>
<td>Curriculum Committee</td>
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<tr>
<td>Faculty Association</td>
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<td>Academic Affairs Standards Committee</td>
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Distribution: Original – Administrative Office
Copies: Curriculum Committee Chair, AASC Chair, Transfer Specialist, Originating Faculty Member, Scheduler, Records, Student Services, Learning Center, Library
Revised: October 2006