DEM222 Advanced Hydraulic Systems Syllabus

Course Information
Organization  Washburn Institute of Technology
Credits  3
Instructor  Jay Thowe/Zach Frisbie
E-mail Address  jay.thowe@washburntech.edu
Zach.frisbie@washburntech.edu
Office Phone  785-228-6434
Campus  Washburn Institute of Technology
Address  5724 SW Huntoon
City/State/Zip  Topeka, Kansas 66604
Office Fax  785-273-7080

Description
Course includes: Hydraulic and hydrostatic systems used on construction equipment; diagnosing and testing to solve system problems; interpretation of fluid hydraulic schematic and diagrams; and electronic and computer-controlled systems.

Students are expected to observe and comply with all safety rules and regulations at all times.

Textbooks
none

Student Learning Outcomes:
A. Communicate effectively
B. Integrate technology
C. Learn effectively
D. Demonstrate cooperative teamwork skills
E. Think critically and creatively
F. Demonstrate responsible work ethics

Competencies
1. Identify and describe hydraulic system schematics and symbols
2. Analyze pressure reading and convert the measures from OEM spec to PSI reverse
3. Diagnose and explain proper operations of hydraulic motors, swivels, swing motors, swing gears, pumps (to include variable, fixed displacement, rotary and gear pumps), cylinder and control valves
4. Identify and describe various steering and brake systems
5. Demonstrate proper usage of a flow meter
6. Explain the difference between open center and closed center hydraulic systems
7. Demonstrate the ability to clean a contaminated hydraulic system to include system cleaning, filter caddying oil, particulate count review and oil sampling
8. Demonstrate attachment flows and pressures
9. Identify various types of hydraulic fittings
Guidelines for Success

Assessment Plan
Assessment is an integral part of the educational process at Washburn Tech and accurate feedback is an important tool in continuously improving the institution’s technical programs. Students can expect to participate in assessment activities prior to entry into programs, within specific courses and following program completion for specific fields of study.

Grading Criteria

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100%</td>
</tr>
<tr>
<td>B</td>
<td>80 - 89%</td>
</tr>
<tr>
<td>C</td>
<td>70 - 79%</td>
</tr>
<tr>
<td>F</td>
<td>Below 70%</td>
</tr>
</tbody>
</table>

Instruction includes 30% lecture and 70% laboratory exercises.
Labs: Pass/Fail

Attendance
Classroom attendance is required. Material missed must be made up with instructor.

Disability
The Special Support Services (SSS) Office is responsible for assisting in arranging accommodations and for identifying resources at Washburn Institute of Technology for persons with disabilities. Qualified students with disabilities MUST register and provide documentation with the office to be eligible for services. New requests for accommodations should be submitted two months or more prior to the date services should begin; however, contact the SSS Office as soon as a need may arise. Depending on the accommodation request, four to eight week lead time may be needed for timely and effective provision of services. SSS coordinates and assist in arranging services it deems appropriate of eligible students on a case-by-case basis.

If you are a student with a disability that may substantially limit your ability to participate in this class and believe you will need accommodations, it is your responsibility to contact:

Special Support Services Coordinator
Phone: 785-228-6356
E-Mail: ssscoordinator@washburntech.edu