DEM132 Power Trains I Syllabus

Course Information
Credits 4
Campus Washburn Institute of Technology
Address 5724 SW Huntoon
City/State/Zip Topeka, Kansas 66604
Office Fax 785-273-7080

Description
Course includes: Introduction to characteristics and principles of powertrain units. Content includes introduction to diesel drive trains, drive shafts, power take-offs, and standard transmissions; procedures in disassembly, reassembly, component identification, wear analysis, failure analysis drive trains; and components of light & heavy wheel diesel and construction equipment, clutch systems, differentials, and axles.  

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

Textbooks

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. Calculate gear ratio
2. Calculate gear rotation
3. Calculate gear speed
4. Adjust clutch linkage free travel
5. Remove clutch assembly
6. Inspect a clutch disc
7. Check a clutch housing alignment
8. Inspect a pressure plate and cover
9. Inspect a pilot bearing and pilot bushing
10. Reinstall a clutch assembly
11. Remove, inspect, repair and reinstall a 15 1/2 inch dual disc clutch
12. Check flywheel run-out
13. Check a manual transmission fluid level
14. Remove and disassemble a manual transmission
15. Inspect transmission parts
16. Reassemble a manual transmission
17. Install a manual transmission
18. Test a manual transmission after rebuilding
19. Remove and replace a propeller shaft
20. Disassemble, inspect, and reassemble a U-joint with bolted end
21. Remove and replace a cross and roller U-joint
22. Align and time a propeller shaft
23. Assemble air line with reusable fitting
24. Assemble air line with compression fitting
25. Compute the length of a flat belt
26. Compute the length of a V-belt
27. Troubleshoot safety mechanisms

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

90-100% A
80 - 89%  B
70 - 79%  C
Below 70%  F

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@washburn.edu