IND 116 Lathe/Mill/Grind for Industrial Maintenance Syllabus

Course Information

Credits 3
Campus Washburn Institute of Technology (Forbes Facility)
Address 6530 SE Forbes Avenue
City/State/Zip Topeka, Kansas 66619
Office Fax 785-670-2734

Description
This course will cover fundamental manual machine operator skills and basic precision measuring techniques. Specific course topics will be on machines, tools and measurements to produce an end product. Participants will work independently and as small teams in completing the hands-on lab activities.

Textbooks

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

Competencies
1. Acquire and apply all standards in general shop safety and machine specific safety.
2. Demonstrate measuring and application techniques with the following tools: Micrometer, Vernier scale, Depth Micrometer, Bevel Protractor, small bore gauges, telescoping gauges, indicators with magnetic base, test indicators, and dial calipers.
3. Demonstrate conversion of standard to metric measurements.
4. Acquire knowledge of blueprint reading components for a machine design.
5. Apply the knowledge of blueprint reading components through sketching, drawing views, types of lines and their uses.
6. Demonstrate the application of the following math components in basic machining: decimals, fractions, feeds and speeds formulas, surface footage, general math, and basic trigonometry.

7. Explain concepts of cutting tools utilized with machine equipment and materials.

8. Demonstrate quality drilling and tapping techniques.

9. Demonstrate grinding techniques for lathe cutting tools on a pedestal grinder.

10. Demonstrate quality skills in operating an engine lathe.

11. Demonstrate quality skills on a milling machine.

12. Demonstrate quality skills in broaching keyways.

13. Demonstrate drill sharpening.

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 Rationale
Class sessions and assignments will include daily homework, in-class review of homework, quizzes. Grades will be based on: Attendance and general participation, daily homework, quizzes and tests and final exam.

Grading Scale
90% or higher A
80% to 89% B
70% to 79% C
60% to 69% D
Less than 60% F

Attendance
Tardies and absences will affect the daily grade for attendance. Students who miss class should inform the instructor beforehand whenever possible, and are responsible for course content, for turning in any required homework, and for taking the initiative to make up any missed tests, labs or quizzes.
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