COURSE DESCRIPTION:
This course will give students a basic understanding of electric motors. The course will cover starting and running components, motor speeds, power supplies, single and split-phase motors.

METHOD OF INSTRUCTION:
A variety of instructional methods may be used depending on content area. They may include but are not limited to lecture, multimedia, cooperative/collaborative learning, demonstrations, labs, on-the-job, internships, and other learning experiences outside the classroom. Methodology will be selected to best meet student needs.
COURSE OUTLINE:

I. Types of Electrical Motor.
   A. Uses of electric motors.
   B. Parts of an electric motor.
   C. Determining a motor’s speed.
      1. \[ S \text{ (rpm)} = \text{Frequency} \times 120 \text{ divided by the number of poles} \]
      2. Frequency is the number of cycles per second (also called hertz)
   D. Single Phase open motors.
   E. Split phase motors.
   F. Capacitor start motors
   G. Permanent split capacitor motors.
   H. Three phase motors.
   I. Single phase hermetic motors
   J. Two speed compressor motors
      1. Application of Motors
   K. The power supply
      1. Voltage
      2. Current capacity
      3. Frequency
      4. Phase
   L. Motor Mounting Characteristics
      1. Cradle mount motors
      2. Rigid base mount motors
      3. End mount motors
      4. Belly band mount motors

EXPECTED LEARNER OUTCOMES:

A. The student will be able to demonstrate an understanding of single phase motors.
B. The student will be able to demonstrate an understanding of multi-speed permanent split capacitor motors.
C. The student will be able to explain the operation of a three phase motor.
D. The student will be able to demonstrate an understanding of the proper power supply for a motor.
E. The student will be able to demonstrate an understanding of the different types of motor mounts.
COURSE COMPETENCIES:
Upon successful completion of this course:

The student will be able to demonstrate an understanding of single phase motors.
1. The student will be able to demonstrate a 120 volt motor application.
2. The student will be able to demonstrate a 240 volt motor application.

The student will be able to demonstrate an understanding of multispeed permanent split capacitor motors.
3. The student will be able to demonstrate knowledge of a capacitor-start motor.
4. The student will be able to demonstrate knowledge of a capacitor-start, capacitor-run motor.

The student will be able to explain the operation of a three phase motor.
5. The student will be able to explain used in heavier commercial or industrial use.
6. The student will be able to demonstrate voltages of 360 volts or 460 volts.
7. The student will be able to explain why no, start accessories needed.
8. The student will be able to explain why (PSC) motors cost more

The student will be able to demonstrate an understanding of the proper power supply for a motor.
9. The student will be able to demonstrate the use of residential motors:
10. The student will be able to demonstrate 120 volt motor.
11. The student will be able to demonstrate 240 volt motor.
12. The student will be able to demonstrate commercial or industrial motors:
13. The student will be able to demonstrate 360 volts use.
14. The student will be able to demonstrate 440 volts use.
15. The student will be able to explain the higher cost of purchase of industrial motors.

The student will be able to demonstrate an understanding of the different types of motor mounts.
16. The student will be able to demonstrate a cradle mount for motors.
17. The student will be able to demonstrate a rigid base mount for motors.
18. The student will be able to demonstrate an end mount for motors.
19. The student will be able to demonstrate a belly band mount for motors.

ASSESSMENT OF LEARNER OUTCOMES:
Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation.

**SPECIAL NOTES:**
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

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