**SOUTH SUBURBAN COLLEGE**

**SOUTH HOLLAND, IL 60473**

**COURSE OUTLINE GUIDE**

**ICCB Course Name and Number** MFG 123 **Semester Hours:** 4

**IAI Number:**

**Curriculum:** MFG.BASIC.MAINT

**Required:** Yes **Elective:** **Replacement for:**

**Contact:** Becky Admave 708-210-5763 badmave@ssc.edu

**Course Title: SSC Catalog/ICCB: (36 characters)** Mechanical Drives I

**Contact Hrs: Lecture -**  2 **Lab -**  4 **Intern -**

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**Description of course to appear in catalog: (Include prerequisites, lab fee, etc.)**

Mechanical Drives I teaches the fundamentals of mechanical transmission systems used in industrial, agricultural, and mobile applications. Learners will study and practice industry-relevant skills including how to operate, install, analyze performance, and design basic mechanical transmission systems using chains, v-belts, spur gears, bearings, and couplings.

**Description for Schedule: (two sentence maximum)**

* **Pre-requisites:** MFG 099, MFG 121
* **Lab Fee:** $25
* **Textbook(s) and other required materials:** (include author, title, publisher, etc.)

Chastain, *Industrial Mechanics and Maintenance*, Prentice Hall ISBN # 978-0135150962

**General objectives of the course:** (8-10 measurable objectives preferred)

At the conclusion of the course, the student will be able to:

1. Apply safe working practices and understand the principles of preventive and first-line maintenance
2. Demonstrate and explain the construction and operation of motors, generators, and transformers.
3. Perform the important steps for general maintenance and troubleshooting techniques using the required tools.
4. Identify, describe, remove, replace, install, and maintain common types of bearings and seals.
5. Dismantle and replace drive belts using proper procedures.
6. Match lubrication methods and materials to their applications and identify their implementation and maintenance requirements.
7. Explain the principles of fluid power, fluid flow, and fluid symbols and diagrams.
8. Apply the skills required for maintaining and operating the components found in a basic mechanical power transmission system.
9. Correctly diagnose a range of mechanical faults and plan a suitable course of action

**Other Aims of this Course**:

**Topical Outline: (may be on a weekly basis)**

1. Hand Tools
2. Fasteners
3. Basic Principles of Mechanical Systems
4. Lubrication
5. Bearings
6. Seals, Gaskets, and Packing
7. Belt Drives
8. Chain Drives
9. Gears
10. Couplings
11. Clutches and Brakes
12. Rigging
13. Industrial Pneumatics

**Methods of presentation:** (Include out-of-class requirements such as field trips, etc.)

Lecture and Lab, Simulation, Problem solving, small groups and discussion

**Methods of evaluation:**

Examinations, quizzes, homework and lab exercises

**Course Requirements**:

**1.** **Materials**:

**2**. **Space Needs**: Classroom

**3.** **Library Holding Needs**: Textbook

**4.** **Instructors:** Does certification criteria require that a full-time faculty member be employed for the program to be accredited? NO.

 If yes, would the College need to hire a full-time faculty member for this purpose or is there one already in place.

**5**. **Impact on Enrollment:** Estimate the impact this course will have on enrollment in other courses in the same division or group requirement. Enrollments should complement each other.

**6. Statement of Possible Conflict or Overlap:** Indicate statements of agreement or disagreement of other faculty members or division directors concerning subject matter content of course and its relationship with existing course.

**7. Are you considering this course for the General Education Requirements?**

**Yes []** **No [X]**

 **If yes, give rationale why and in what grouping.**

**8. Class Capacity:**What is the expected class capacity for this course? **12 *(The amount of equipment and the size of the manufacturing lab, inhibits more than 12 students from using the facility at one time.)***

If the capacity is different than standard contractual capacities of 38 lectures and 24 lab size classes, please submit supporting documentation and a rationale for the proposed variation in class size.

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**9**. **Outcomes Assessment Component:** Provide details of the assessment measures that will be used in this course.

80% of students will successfully complete the course.

**10.** **General Education Objectives: G1, G3, G4, G5, C1, C2, C4, M1**

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