Faculty members are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT. MECH   COURSE NUMBER: 2130

NUMBER OF CREDITS: 4  Lecture: 2  Lab: 2

<table>
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<th>Course Title:</th>
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<tr>
<td>Advanced Fluid Power Systems II</td>
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<tr>
<th>Catalog Description:</th>
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<td>Provides students advanced fluid power theory and application for product specification and selection, design, service and fabrication.</td>
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FULFILLS MN TRANSFER CURRICULUM AREA(S)
Goal 1: Communication: ____ by meeting the following competencies:

Goal 2: Critical Thinking: ____ by meeting the following competencies:

Goal 3: Natural Sciences: ____ by meeting the following competencies:

Goal 4: Mathematics/Logical Reasoning: ____ by meeting the following competencies:

Goal 5: History and the Social and Behavioral Sciences: ____ by meeting the following competencies:

Goal 6: The Humanities and Fine Arts: ____ by meeting the following competencies:

Goal 7: Human Diversity: ____ by meeting the following competencies:

Goal 8: Global Perspective: ____ by meeting the following competencies:

Goal 9: Ethical and Civic Responsibility: ____ by meeting the following competencies:

Goal 10: People and the Environment: ____ by meeting the following competencies:

Prerequisites or Necessary Entry Skills/Knowledge:
Successful completion of year one of the Mechatronics diploma or A.A.S. degree program or equivalent work experience.
MECH 2105 Advanced Fluid Power Systems I
**Topics to be Covered**

1. Light, medium and heavy-duty hydrostatics.
2. Noise levels and dew points.
3. Hydraulic joystick controllers
4. Load sensing and Filtration circuits.
5. Horse power limiter and pressure pumps.
6. Design and testing of hydraulic motors.
7. Mobile valve systems.
8. Pilot controlled dcv.
9. Component research and availability.
11. Accumulators.
12. Design circuit per specifications

**Student Learning Outcomes**

1. Identify and control potential safety hazards and implement safe working practices.
2. Identify hydrostatic components.
4. Understand various fluid power controls and sensing.
5. Rebuild and repair fluid power components.
6. Demonstrate various pump controls.
7. Determine system filtration requirements.
8. Design various hydraulic and pneumatic circuits.

**Is this course part of a transfer pathway:** Yes ☐ No ☒

Revised Date: 05/2020