Machinery Installation (INMT 2301)

Credit: 3 semester credit hours (2 hours lecture, 2 hours lab)

Prerequisite/Co-requisite: INMT 1305

Course Description
Students utilize skills acquired in previous studies. Machinery foundation, locations, installation, and alignment activities are practiced and tested. Emphasis is on the various methods of shaft alignment including laser shaft alignment.

Required Textbook and Materials
   a. ISBN number is 0-7645-4171-1.

1. Equipment to be furnished by students: Required at instructor discretion.
   a. Safety Glasses (Z 87+)
   b. Gloves (leather or equal)
   c. Long pants and long sleeve shirt
   d. Shoes or Boots (substantial leather or equal w/ heels - no open toes)

Course Objectives
Upon completion of this course, the student will be able to:
1. Perform field layouts for locating machinery; construct machine foundation according to machinery foundation prints.
2. Install machinery on to a foundation which includes leveling and securing.
3. Explain the applications of the various types of shaft couplings.
4. Align pump and motor shafts using the various methods of shaft alignment.

Course Outline
1. Introduction
   a. Introduce the Faculty
   b. Introduce the Subject
2. Safety-Lockout/Tagout, Work permits
   a. Discuss Safety in the Lab
   b. Discuss Work Permit in Industry
3. Machinery application
   a. Discuss the machinery to be used in class
   b. Discuss the Safety to be used in class
4. Machinery location

Approved 12/2013
b. Discuss the safety required in the lab

7. Machinery setting and alignment
   a. Discuss the use of laser
   b. Discuss the safety concerns using the laser

8. Couplings
   a. Identify the different types of couplings
   b. Discuss the uses of each

9. Shaft alignments
   a. Practice alignment with indicators
   b. Practice alignment with laser

10. Inspection
    a. Discuss the need for inspections
    b. Demo the different ways to inspect equipment

11. Machinery function testing
    a. Discuss the different tests to apply
    b. Apply tests to machinery

12. Machinery operation/evaluation
    a. Operate Machinery
    b. Evaluation the operation

Grade Scale

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90 – 100</td>
<td>A</td>
</tr>
<tr>
<td>80 – 89</td>
<td>B</td>
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<td>70 – 79</td>
<td>C</td>
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<td>60 – 69</td>
<td>D</td>
</tr>
<tr>
<td>0 – 59</td>
<td>F</td>
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Course Evaluation

Final grades will be calculated according to the following criteria:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Major test</td>
<td>75%</td>
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<tr>
<td>Class participation</td>
<td>25%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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</tbody>
</table>

Course Requirements

1. Tools used
2. Measuring Instruments used
3. Safely using Laser alignment devices
4. Installing rotating equipment
5. Aligning equipment
INMT 2301
Course Syllabus

Disabilities Statement
The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the online resource:
http://www.lit.edu/depts/stuserv/special/defaults.aspx

Student Code of Conduct Statement
It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the LIT Catalog and Student Handbook. The LIT Catalog and Student Handbook may be accessed at www.lit.edu or obtained in print upon request at the Student Services Office.

Starfish
LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tr>
<td>1</td>
<td>Course introduction and policies</td>
<td>Handouts</td>
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<tr>
<td></td>
<td>Lecture</td>
<td>Lab: Practice</td>
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<tr>
<td>2</td>
<td>Arc Method of Installation</td>
<td>Chapter 9</td>
</tr>
<tr>
<td>3</td>
<td>3-4-5 Method of Installation</td>
<td>Chapter 9</td>
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<tr>
<td>4</td>
<td>Perpendicular Distance Method</td>
<td>Chapter 9</td>
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<tr>
<td>5</td>
<td>Reinforced-Concrete Foundations</td>
<td>Chapter 9</td>
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<tr>
<td>6</td>
<td>Vibration and Noise Prevention</td>
<td>Chapter 9</td>
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<tr>
<td>7</td>
<td>Foundations</td>
<td>Chapter 9</td>
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<td>8-16</td>
<td>Methods of Alignment</td>
<td>Lab</td>
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<tr>
<td></td>
<td>Lecture</td>
<td>Lab: Practice</td>
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