Fall 2019

ME 405-103: Mechanical Lab II

Alexandre Ermoline

NEW JERSEY INSTITUTE OF TECHNOLOGY – MECHANICAL & INDUSTRIAL ENGINEERING

ME 405-103 – Mechanical Lab II

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Instructor:	Dr. Alexandre Ermoline
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Official E-mail:	alexandre.ermoline@njit.edu
Office Hours:	By appointment
Class Meets:	ME Building 110
Class Meeting Times:	R from 6:00 PM to 8:50 PM
Required Textbooks:	Experimental Methods For Engineers, by J. P. Holman, published by McGraw Hill, 8th edition, 2012. ISBN: 0-07-352930-1. Mechanical Laboratory II Manual, Available on MIE Dept., NJIT Web
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Required Software:	Microsoft Word, Microsoft Excel.
Course Prerequisite:	ME 343, ME 312
Course Corequisite:	ME 407
Course Description:	Laboratory emphasizes the use of fundamental principles, and instrumentation systems, for the analysis, and evaluation of mechanical components within a system.

Grading:

Lab Reports	50 %
Exam 1	20 %
Exam 2	20 %
Preliminary reports	10 %
Total=	100 %

Letter Grades (Tentative - Subject to Change): **A** → 90 – 100% ; **B+** → 84 – 89% ; **B** → 78 -83% **C+** → 72 – 77% ; **C** → 66 – 71% ; **D** → 60 – 65%; **F** → 0 – 59%

Course Policy: Lab manuals, lecture notes, and some other useful material will be uploaded in Canvas: http://canvas.njit.edu – Please, check this site and your e-mail often.

Groups will be formed during the first class. All labs will be performed in groups. In the result of the lab experiment the preliminary report and complete lab report must be submitted. Both preliminary and complete lab report is the result of individual work.

Attendance will be taken. Students are expected to attend all classes and on time. A typical class includes a short lecture, the lab experiment and/or processing data (writing a preliminary report). There is no make up for the experiments. Missing a single lab will significantly lower the grade.

The exams are Closed Textbook unless otherwise specified. One page of a standard letter format with the formulas prepared by a student is allowed on the exams.

No make up exams.

A letter grade is based on the weighted average score. The scale converting numerical to letter grades may be changed.

If a student has questions about the grade he/she has received on an exam, or a report, he/she must talk to the instructor (or the teaching assistant where appropriate) no later than a week after the graded activity has been returned to students. No grade change will be made after the one week period.

Academic Integrity:

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. **Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university.** If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

Class Topics

1. Introduction to ME laboratory II.
2. Performance test of a centrifugal pump.
3. Performance test of a gear pump.
4. Performance test of an impulse turbine (Pelton Wheel Experiment).
5. Wind tunnel experiment of pressure distribution around a cylinder.
6. Transient heat conduction in bodies of fnite length.
7. Presentation/discussion of lab reports.
8. Review.

Course Calendar: The detailed schedule of each group activities and lab report due days can be found in a separate file uploaded in Canvas.