San José State University

Engineering/Mechanical Engineering

ME120-Experimental Methods – FALL 2021

Instructor: Ananda Mysore
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Office Hours: Monday 4:30PM to 5:30PM by appointment online
CLASSROOM: ONLINE

4. Design a data acquisition system for a given application by analyzing and specifying requirements, selecting appropriate commercial hardware, and writing a computer program to acquire, analyze, and present the desired data.
5. Identify and describe the various types of mechanical measurements including temperature, pressure, sound, motion and position, force and torque, stress and strain, flow visualization and measurement (e.g., volume flow rate, velocity, etc.) and explain the transducer principles that underlie them.
6. Operate modern instrumentation systems that include mechanical and electro optical technologies and computer based data acquisition systems.
7. Communicate effectively in written form and in oral presentations information relating to the design and/or results of an engineering experiment.
8. Work productively and effectively in an engineering team.

Required Texts/Readings

Textbook

Experimental Methods for Engineers, custom edition by Pearson Custom Publishing, Boston, MA, 2004 (ISBN 0-536-900 g Gectively in writE04 (ISBN 0

d = 0.99 < 1 week late d = 0.70 > 1 week < 2 weeks d= 0.50 > 2 weeks < 3 weeks d = 0.00 > 3 weeks

The number of hours breached is determined by online submission time stamp or email-received time stamp.

EXCEPTIONS: Any grading appeals or petitions must be communicated promptly in writing (or email). Exceptions will normally be evaluated at the very end of the semester in context with an individual's overall semester track record and all other exceptions class-wide. Special consideration for truly unavoidable and extenuating circumstances will depend on timeliness and supporting documentation (e.g., doctor's note, police report).

University Syllabus Policy S16-9
Syllabus Information web page

University Policy S16-9,

"Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus."

Final Examination

10% for Final Exam, scheduled on: Thursday, Dec 9th 0715-0930

Grading Information

LATE POLICY: Unless otherwise specified for a particular assignment, work that is submitted late will be accepted with reduced credit according to a depreciation factor

Theory Homework Late Policy d = 0.95 < 24 hrs d = 0.70 >24 hrs < 48 hrs d= 0.50 >48 hrs < 72 hrs d = 0.00 >72 hrs

Lab Report Late Policy

d = 0.99 < 1 week late d = 0.70 > 1 week < 2 weeks d= 0.50 > 2 weeks < 3 weeks d = 0.00 > 3 weeks

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consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on Syllabus Information web page (https://www.sjsu.edu/curriculum/courses/syllabus-info.php). Make sure to visit this page to review and be aware of these university policies and resources.

ME120 Experimental Methods, FALL 2021 Lecture Schedule

		Course Introduction & Enrollment Administration.
Week1	08/23/21	Experimentation and Validity of Measurement (Chapters 1 & 2)
Week2	08/30/21	Data Acquisition and Sampling (Chapter 4)
Week3	09/13/21	Measuring Displacement and Motion (Chapter 8)
Week4	09/20/21	Measuring Force, Stress, and Strain (Chapter 8)
Week5	09/27/21	Measuring Temperature (Chapter 9)
Week6	10/04/21	Measuring Pressure and Sound (Chapter 9)
Week7	10/11/21	Fluid & Flow
Week8	10/18/21	Mid-Term Exam
Week9	10/25/21	Signal Conditioning (Chapter 3)
Week10	11/01/21	Dynamic Signal Analysis (Chapter 5)
Week11	11/08/21	Statistical Analysis I: Probability Distributions (Chapter 6)
Week12	11/15/21	Statistical Analysis II: Parameter Estimation (Section 6.4)
Week13	11/22/21	Statistical Analysis III: Correlation and Regression (Section 6.6)
Week14	11/29/21	Uncertainty Analysis (Chapter 7)
Week15	12/06/21	REVIEW
Week16	12/09/20	Final Exam 0715-0930

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*The schedules are subject to change with fair notice.