

MECH 3751L - Stress and Strain Analysis 1 Laboratory

Fall 2026 Syllabus, Section 01, CRN 40786,

Credit hours: 1

Instructor

Anthony Viviano

Email: avviviano@ysu.edu

Public Instructor Information

Instructor Title: Anthony Viviano, P.E.

Instructor Professional Qualifications:

Professional Engineers License PE.72316

Consulting, VECOR, LLC.

Master's, Mechanical Engineering, Youngstown State University

Bachelor's, Mechanical Engineering, Youngstown State University

Instructor Office Location: Moser 2530

Instructor Office Phone: (330) 941-3017

Course Description

3751L. Stress and Strain Analysis 1 Laboratory. Transmission and reflection photoelasticity. State and dynamic strain gage applications using computer-aided data acquisition. Three hours laboratory per week. Concurrent with MECH 3751. 1 s.h.

Course Readings

Group	Title	Author	ISBN
Optional	"Shigley's Mechanical Engineering Design", 2024 Edition	Richard Budynas & Keith Nisbett	9781266929892

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Day	Date	Reading(s)	Proposed Topic	Due/To Prepare for Class
Tue	8/25	Handout	Review of Statics and Internal Force Diagrams	
Tue	9/1	Lab-1 Handout	Lab 1: Photoelasticity	Review Homework
Tue	9/8		Lab 1: Photoelasticity	
Tue	9/15	Lab-2 Handout	Lab 2: Photoelasticity	Lab 1 Homework
Tue	9/22		Lab 2: Photoelasticity	
Tue	9/29	Lab-3 Handout	Lab 3: Photoelasticity	Lab 2 Technical Memo
Tue	10/6		Lab 3: Photoelasticity	
Tue	10/13	Lab-4 Handout	Lab-4 Strain Gauge	Lab 3 Presentation
Tue	10/20		Lab-4 Strain Gauge	
Tue	10/27	Lab-5 Handout	Lab-5 Strain Gauge	Lab 4 Homework
Tue	11/3		Lab-5 Strain Gauge	
Tue	11/10	Lab-6 Handout	Lab-6 Strain Gauge	Lab 5 Technical Memo
Tue	11/17		Lab-6 Strain Gauge	

Tue 11/24 No Class

Tue 12/1

Lab 6 Presentation

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.