TEACHING ASSISTANTS:

LABORATORY TAs (All labs are in B-14 Fitzpatrick Hall)

Note:

(1) Be on time for lab, as attendance will be taken.

(2) Before each lab: Answer the attached questionnaire with each lab description (Lab Descriptions are Posted on Lab Web-Site).

Monday (9:35 AM-11:05 AM)
Constance Slaboch (cslaboch@nd.edu) & Chan-Yong Schuele (Chan-Yong.Schuele.1@nd.edu)

Monday (3 PM-4:30 PM)
Justin Deuerling (jdeuerli@nd.edu) & Constance Slaboch (cslaboch@nd.edu)

Tuesday (11 AM-12:30 PM)
Bob Kane (Robert.J.Kane.44@nd.edu) & Chan-Yong Schuele (Chan-Yong.Schuele.1@nd.edu)

Wednesday (9:35 AM-11:05 AM)
Bob Kane (Robert.J.Kane.44@nd.edu) & Travis Turnbull (turnbull.3@nd.edu)

Thursday (11 AM-12:30 PM)
Justin Deuerling (jdeuerli@nd.edu) & Travis Turnbull (turnbull.3@nd.edu)

GRADING TAs:

Note: Lab reports are due one week from the date you performed the lab in a mailbox specially marked for lab report submission in 365 Fitzpatrick Hall (ask Mrs. Fecher in the office if you can't locate the box). This room gets locked after 5 PM. Therefore, due time for submission is 5 PM on the date of submission. YOU MUST ATTACH GRADING SCORE SHEET WITH REPORT (otherwise you may run the risk of Mark Deduction).

Christina Merrill (matson.3@nd.edu) Will Grade Lab1 Reports
Daniel Hoehn (Daniel.E.Hoehn.4@nd.edu) Will Grade Lab2 Reports
Ming Gan (mgan@nd.edu) Will Grade Lab3 Reports
Xiutao Shi (xshi3@nd.edu) Will Grade Lab4 Reports

RECITATIONS TAs:

Note: Students may attend any session of their choice

Megan McGann (mmcgann@nd.edu)
Section 1 - Tues. 5:30-7:00 pm, 320 DeBartolo
Section 3 - Thurs., 5:00-6:30 pm, 320 DeBartolo

Devendra Dubey (ddubey@nd.edu)
Section 2 - Wed. 3:00 - 4:30 pm, 217 DeBartolo

Vikas Samvedi (vsamvedi@nd.edu)
Section 4 - Fri., 3:00-4:30 pm, 318 DeBartolo

Prerequisites To Lab Work: AME 20221 Statics

Required text: Craig, *Mechanics of Materials*, 2nd ed.

Procedures and descriptions for each lab are available on the following website:

http://www.nd.edu/~vtomar/Teaching/AME20241/LABORATORY.html

Objective:

The objective of the laboratory is to provide hands on experience in the mechanical behavior of deformable bodies to further illustrate the concepts that are presented in the lectures. In addition, you will gain experience in the use of a variety of experimental devices common in mechanical testing.

Conduct of Course:

Each section will be divided into smaller subgroups. You will alternate performing experiments in the laboratory (**B14 Fitzpatrick**) **on a three-week rotation**. During recitations you can see example text problems worked out by a TA and ask questions or review material.

Attendance:

Attendance at laboratory when you are performing experiments is **MANDATORY**. **Failure to attend lab as scheduled will result in no credit for the lab in question**. If you are ill or otherwise unable to attend your lab as scheduled, contact the TA in advance if possible, or as soon as possible otherwise. **Attendance at the example problem sessions is optional**.

Lab reports:

Each student must submit their own lab report. In some instances you will work in small groups to obtain the data. In this case, you must arrange amongst yourselves to obtain the data for any tests performed as a group.

Format: The format of your lab reports should follow the attached description. The description is also available on the web site at
http://www.nd.edu/~vtomar/Teaching/AME20241/LABORATORY.html

Due date: Lab reports are due one week from the date you performed the lab.

Grading: Lab reports will be graded according to the attached scoring sheet.

Policies:

Laboratory Questions: For each lab, you will read the lab handout and answer the questions at the end. Give your answers to your TA at the beginning of the lab. YOU WILL NOT BEGIN WORKING IN THE LAB UNTIL YOU HAVE TURNED IN YOUR ANSWERS.

Late Reports: Late lab reports will receive a deduction of 10% for each working day or portion thereof that they are late. If you are ill or have a legitimate excuse for submitting a late lab report, obtain an excuse from the office of residence life, and submit it to your TA with your lab report.

Participation: All students should participate actively in the laboratory procedure. Arriving late for your lab will result in a 10% penalty on the lab.

Makeup labs: If you are unable to attend your lab, you must arrange with your TA to makeup the lab on a different date. Do not go to a different session on your own or obtain the data from a friend, as you will not receive credit.

SAFETY:

- Read the laboratory handouts before you arrive to perform the experiments.
- Wear eye protection when instructed to do so by your TA.
- Do not operate the ATS mechanical testing systems without a teaching assistant present. These machines can generate forces in excess of 10,000 lbs, which can easily crush an undergraduate's fragile bones.
- Be mindful of your lab partner's safety.
- Keep the lab area clean.
- Follow all instructions given to you by your teaching assistants

FAILURE TO ABIDE BY THE SAFETY RULES WILL RESULT IN A ZERO GRADE ON YOUR LAB.

Honor code:

Students should be familiar with the University Honor Code. You will work in small groups in this class to perform experiments and obtain data. Each student must prepare his or her own lab report, and will be responsible for understanding the material.

Semester Schedule: Any Issue with lab? Please contact Mr. John Ott: jott@watt.ame.nd.edu, Dr. Vikas Tomar: vikas.tomar@nd.edu Dr. Diane Wagner: dwagner@nd.edu

Lab No.	Dates	Topic	Book Reading
1	1/26-2/13	Tension test	Sections 2.4-2.6
2	2/16-3/06	Build-a-beam	Chapters 5 and 6
3	3/16-4/03	Beam bending	Section 2.9-2.13, Chapters 7 and 8
4	4/06-4/27	Column buckling	Chapter 10

Lab Schedule

Lab 1 – Uniaxial Tension Test

Date	Group
Jan. 26 – Jan. 30	I
Feb. 2 – Feb. 6	II
Feb. 9– Feb. 13	III

Lab 2 – Build-a-Beam

Date	Group
Feb. 16 – Feb. 20	All groups: pick up materials in B14
Feb. 23 – Feb. 27	(No lab) –
Mar. 02 –Mar. 06	All groups – Beam testing competition

Lab 3 – Beam Bending and Strain Transformation

Date	Group
Mar.16 – March 20	II
March 23 – March 27	III
April 30 – April 03	I

Lab 4 - Buckling

Date	Group
April 06 – April 09	III
April 14 – April 20	I
April 21 – April 27	II

Additions, amendments, or corrections to this syllabus may be made throughout the semester via in class announcements, handouts, or e-mail. Any instructions from your TA override this syllabus, the laboratory procedures handouts, or information on the web site.