Welcome to the First-Year Engineering Program

ENGR 1181
Class 1
Today's Learning Objectives

- After today’s class, students will be able to:
  - Identify the instructional team
  - List the three ENGR 1181 Goals
  - Identify and describe the “How, what, when, who & why” of Engineering
  - Justify the goals and benefits of the inverted classroom
  - Describe the expectations of the student and instructional team in an inverted classroom.
  - Use the website to locate the before, during and after class assignments
  - Use the syllabus to locate course expectations
Teaching Team Introduction

- Faculty Leader
- Graduate Teaching Associate - GTA
- Undergraduate Teaching Associates - UTA

Get to know us, we’re here to help you be successful!
Goals

- Prepare you for advanced engineering courses
- Expose you to a wide range of engineering careers
- Prepare you to be productive as working engineers
Questions you may ask yourself

- **How** can I impact the world as an engineer?
- **What** is engineering?
- **When** did engineering begin?
- **Who** can become an engineer and what does it take?
- **Why** become an OSU engineer?
How can I impact the world?

- You can help “make the world go round” by providing solutions to everyday needs & problems
How can I impact the world?
What is Engineering?

- Engineering is about using natural materials and forces for the good of mankind.
Engineering History

1st Century Engineering

9th Century Engineering

20th Century Engineering

21st Century Engineering
Engineering in Our Lifetime

1995 Motorola flip phone

2014 iPhone 5
OSU Engineering!
First-Year Engineering Focus

https://www.youtube.com/watch?v=uruJBVZlOnQ&list=UU5fGhAtDpweAzYLQBQt-9pg
Fundamentals of Engineering

- **ENGR 1181**
  - Problem Solving with Engineering Tools
  - Computer Programming
  - Hands-on Labs
  - Technical Communications
  - Teamwork

- **ENGR 1182**
  - Graphics and CAD
  - Design and Build Projects
  - Technical Communications
  - Teamwork
Classroom Structure & Expectations

1. Before Class - Preparing
   • Required and due before class (6% of your final course grade!)

2. In-class - Activities and Assignments
   • Due either in class on the same day or at beginning of a later class (See website.)
Classes: Three Phases

Before Class
- Preparation Activity
- Evaluation

In-Class
- Short Lecture
- Activities
- Assignment(s)

After Class
- Finish Assignment(s)
- Prepare for next class
Why does this class look different?

The Flipped (or inverted) Classroom

- Lectures in a Traditional Classroom
  - Passive and often boring
  - Easily watched/read at home

- Inverted Classroom
  - Interactive activities reinforce preparation
  - Instructional Staff engaged during the hard part - assignments
Bloom’s Taxonomy – Cognitive Domain

- Evaluating
- Creating
- Analyzing
- Applying
- Understanding
- Remembering

In-Class Activities
Assignments

Preparing
Before Class

Evaluating
Creating
Analyzing
Applying
Understanding
Remembering

[B. Bloom, ed, Taxonomy of Educational Objectives:Cognitive Domain (David McKay, New York, 1956).]
Before Class Assignments

- Vary in form
  - Videos, reading, tutorials, exercises, quizzes

- Find a place and time where you are unlikely to be interrupted
  - Multitasking doesn’t work!

- As you go, write down questions you have about the topic that you can ask in the next class.
Communications

Website:

- Type in [http://eeiccourses.engineering.osu.edu/](http://eeiccourses.engineering.osu.edu/)
  - Contains all ENGR 1181 course materials
  - Arranged by class meeting periods

- Navigate to website > 1181c > Your schedule # or professor and time
  - Find **Class 1**
# Website Organization

<table>
<thead>
<tr>
<th>Before class:</th>
<th>Topic: Excel - Graphing</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>1. Study the Preparation Document - PDF or Word</td>
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<table>
<thead>
<tr>
<th>In-class:</th>
<th>Topic: Excel - Graphing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Instructor's Presentation - Powerpoint or PDF</td>
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<tr>
<td></td>
<td>2. In-Class Activity - PDF and Excel</td>
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<tr>
<td></td>
<td>3. In-Class Activity Solution - PDF</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>After class:</th>
<th>1. Excel - Graphing Homework - PDF or Word</th>
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<table>
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<tr>
<th>Journal:</th>
<th>Journal - due each week before Sunday at 11:59 pm - Carmen</th>
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<table>
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<tr>
<th>Previous class:</th>
<th>Class 4 - Technical Communication 1</th>
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| Next class: | Class 6 - Excel - Data Analysis |
Carmen

- Online tool for some course resources
  - Gradebook, quizzes, journals
  - [https://carmen.osu.edu](https://carmen.osu.edu)
  - Use OSU login
  - 24/7 access

- Communication tool between instructional staff and students
Email

- Check your OSU email address daily for important periodic updates.
- Use only your OSU email address for any communications to instructional team.
  - We cannot email private/personal information to you via non-OSU email addresses.
Syllabus Review

- Assignment Policy
- Makeup Exam Policy and Guidelines
- Hands-on Laboratory
- Attendance and Participation
- Assessment and Evaluation
- Grading
- Online Evaluation Tools
- Journals
- Team Evaluations
- Academic Misconduct

NOTE:
- A minimum grade of 50% is required in the following course components to receive a passing grade in this course
  - Class Activities
  - Lab Activities
  - Exams
Team Formation

- You will work in teams of four on many assignments during the semester.

- Teams are created using a Team-Maker tool in CATME.

- You should have received an email with a link.

- You will create a log-in password for this separate account.

- This survey needs to be completed today.
Logging In

- Press <CTRL> + <ALT> + <DELETE>

- Enter credentials
  - OSU lastname.#
  - Default Password
    - First letter of last name \textit{UPPER CASE}
    - Student ID Number
    - ‘period’ (.) \textbf{EX: “0012345678.b”}
    - First letter of your first name \textit{lower case}

Password must be at least 8 characters, with 3 of the 4 complexity categories: lower case letters, upper case letters, special symbols and numbers.
Methods of Getting Help

- UTA Tutoring
  - Available in First-Year Engineering computer lab (HI 324)
  - Staffed Mon-Thurs 8-7, Fridays 8-5

- GTA
  - Make an appointment or stop by office hours, they’ll appreciate it!

- Instructor
  - Make an appointment or stop by office hours.
Student Resources Guide

- Download from the EEIC website
  - Contains helpful hints about the course
  - Familiarize yourself with this document
Important Takeaways

- Be sure to check the course website for preparation materials and due dates.
- Familiarize yourself with the EEIC website, Carmen, and all of your available resources.
- Don’t forget – complete the CATME Team-Maker survey today.
- You have weekly Journals due on Sunday.
Preview of Next Class

- Teamwork and Problem Solving!
  - Read the Preparation Document and take the Carmen Quiz before Class 2
What’s Next?

- Start the CATME survey so that teams can be formed ASAP. Complete by tonight!

- Complete Journal 1 on Carmen, by Sunday.
  - This journal is a “Survey”
  - Journals 2 – 13 are “Quizzes”
  - Journal 14 will also be a “Survey”

- Review overall 1181 course material:
  - Explore the EEIC 1181 website & Carmen
  - Review today’s lecture
Engaging Your Engineering Creativity

- Engineered products impact our lives every day.
- What are a few of the engineered products and systems it took to get you to class today?
Engaging Your Engineering Creativity

- *You* could be the one to develop the next great idea!

- Step 1 - A challenge to you. Let your imagination run free! Think about a concept for a new or improved engineering device you could have used today.

- Examples:
  - Solar powered, rechargeable toothbrush
  - Thought/mind controlled music player
  - Nuclear powered, space minimized, mono-wheel transporter (unicycle)

- You have 90 seconds to create your idea. GO!
Engaging Your Engineering Creativity

- Step 2 - You now each have 30 seconds to pitch your idea to the fellow engineers at your table.

- Step 3 - Vote on which one you think is most creative.

- Step 4 - Team Report Out