

TO: The Engineering Faculty
FROM: The Faculty of the School of Mechanical Engineering
RE: New undergraduate course – ME 19901: How Stuff Works Lab Instructor

The Faculty of the School of Mechanical Engineering has approved the following new undergraduate course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

ME 19901 – How Stuff Works Lab Instructor

Offered in Fall & Spring

0 total credit

Co-requisites: ME 19800 PMEA Leadership Program

How Stuff Works Lab Instructors introduce First-Year Engineering students to how select products work from a mechanical engineering perspective. Labs contain teardowns and explanations of everyday products including disassembly, evaluation, and reassembly. Lab instructors explain the basic engineering principles behind the products to understand the underlying engineering design and fabrication fundamentals.

Rationale:

A permanent course number of ME 19901: How Stuff Works Lab Instructor will allow the lab instructors to have clarity for course registration purposes, visibility of teaching experiences on their transcripts, and the ability to repeat the course up to 5 times. The ME 19900: How Stuff Works course has been extremely popular in recent years and has been filled to capacity in the past 2 semesters (180 FYE students in F24 and 144 FYE students in S25).

Head of the School of Mechanical Engineering

Link to Curriculog entry: [\[Paste link to Curriculog entry.\]](#)

ME 19901: How Stuff Works Lab Instructor – Spring 2025

Instructors:

HSW Course Coordinators: Raygan Bingham, rbingha@purdue.edu and Emerson Zubb, ezubb@purdue.edu
ME Lead Instructor: Julia King, juliaking@purdue.edu

Lab Prep:

Arranged hours for 12 PMEA lab instructors: Mondays 5:30-6:20pm (Section 040; CRN 14732; Labeled LBP)
Instructor: Julia King, juliaking@purdue.edu

Labs:

Wed 9:30 - 10:20am @ POTR 160D (Section 041; CRN 14733)

Lab Instructors: Raygan Bingham, rbingha@purdue.edu and Sofia Velarde, svelard@purdue.edu

Wed 11:30am - 12:20pm @ POTR 160D (Section 042; CRN 14737)

Lab Instructors: Tyler Cormier, tcormier@purdue.edu and Gray Briles, gbriles@purdue.edu

Wed 1:30 - 2:20pm @ POTR 160D (Section 043; CRN 14738)

Lab Instructors: Tanisha Konduru, tkonduru@purdue.edu and Emma Bedwell, ebedwel@purdue.edu

Fri 11:30am - 12:20pm @ POTR 160D (Section 044; CRN 14739)

Lab Instructors: Zhao Jiang, jiang789@purdue.edu and Mackenzie Hathaway, mkhathaw@purdue.edu

Fri 12:30 - 1:20pm @ POTR 160D (Section 045; CRN 14740)

Lab Instructors: Noah Hughes, nghughes@purdue.edu and Grace Ryan, ryanga@purdue.edu

Fri 2:30 - 3:20pm @ POTR 160D (Section 046; CRN 14751)

Lab Instructors: Eva Brandt, brandt51@purdue.edu and Emerson Zubb, ezubb@purdue.edu

Course Description:

Credit Hours: 0

Co-requisite: ME 19800 PMEA Leadership Program

How Stuff Works Lab Instructors introduce First-Year Engineering students to how select products work from a mechanical engineering perspective. Labs contain teardowns and explanations of everyday products including disassembly, evaluation, and reassembly. Lab instructors explain the basic engineering principles behind the products to understand the underlying engineering design and fabrication fundamentals.

Structure:

- Lectures will feature industry representatives and Purdue speakers.
- Lab instructors will lead students through teardown activities and explanations of everyday products.
- All elements of this course are Face-to-Face.
- Brightspace link (combined lecture and lab content) = [Spring 2025 ME 19900-026 LBP](#)

Learning Outcomes: ME 19901 instructors facilitate ME 19900 learning outcomes below

1. **Compare and contrast various industry roles to identify those in alignment with your career interests.**
 - a. Relevant course content = Multiple industry speakers describe varied roles/career paths.
 - b. A primary purpose of the course is to explore ME careers and understand the broad opportunities available to students with a ME degree.
 - c. Students should leave the course with the capability to analyze various industry roles to determine which roles best align with their interests. This is not an absolute determination, simply a compare and contrast activity. Students can also apply this understanding to the selection of their engineering major.

2. **Describe how select common products work to develop your mechanical aptitude.**
 - a. Relevant course content = Industry speakers describe how the products their company makes work from a mechanical engineering perspective and labs contain teardowns and explanations of common products.
 - b. This entry-level Mechanical Engineering course for First-Year Engineering students is designed to introduce how products work from a mechanical engineering perspective.
 - c. For industry products, a broad overview product description is provided by the industry speakers. For lab products, a more in-depth perspective is provided by the lab instructors.

3. **Explain the fundamental engineering principles of select products to expand your appreciation of the role of engineering in everyday life.**
 - a. Relevant course content = Labs contain teardowns and explanations of everyday products including disassembly, evaluation, and reassembly of products. Lab instructors explain the basic engineering principles behind the products in each lab.
 - b. The labs allow for a deeper level of product knowledge via direct linkages to engineering principles from the lab instructors.

Communications:

Primary communications with your instructors should be through email.
Please always include **ME 199** in the subject line of any emails.

Course Questions:

- Course Coordinators, Raygan Bingham, rbingha@purdue.edu and Emerson Zubb, ezubb@purdue.edu, will serve as your primary points of contact.
- You may also contact ME Lead Instructor, Julia King @ juliaking@purdue.edu.

Lab Questions:

- Please contact your lab instructor via the email addresses listed on the first page.
- Your lab instructors will also serve as informal mentors to you. Please feel free to reach out with your questions about life in Purdue Mechanical Engineering!

Attendance/Late Work:

- Attendance is expected at each lecture and lab. Please see detailed attendance policy on next page.
- Contact ME Lead Instructor, Julia King @ juliaking@purdue.edu to request an extension on any assignment **in advance** of the due date.

ME 19900 Assignments:

- Lecture HW is due on **Monday** following each speaker's presentation.
- Lab HW is due on **Monday** following your assigned lab section.
- All assignments will be submitted via Brightspace; **See Brightspace for specifics and due dates.**

Spring 2025 Attendance Policy:

- **Lectures:** Students are expected to attend all lectures in order to engage with the presenters through questions and answers. We will have assigned seats and take attendance at each lecture. Contact Julia King @ juliaking@purdue.edu **in advance** if you must miss lecture.
- **Labs:** Students are expected to attend all labs. You may only attend your registered lab section. We will take attendance in labs.
- **Missed work:** Please contact Julia King @ juliaking@purdue.edu to request an extension on any assignment **in advance** of the due date. Granting extensions is solely at the instructor's discretion.

ME 19900 Grades:

Lecture attendance: 13 x 1 pt. = 13 pts.

Lecture HW: 13 x 1 = 13 pts.

Lab attendance: 13 x 1 pt. = 13 pts.

Lab HW: 13 x 1 pt. = 13 pts.

Total course = 52 points

Extra Credit Opportunities:

- Submit confirmation of mid-term and final course surveys = 1 and 3 points, respectively.
- Create your own HSW video with a product of your choice = Up to 5 points.
- Additional extra credit assignments may be available throughout the semester.

Late HW Policies:

HW submitted less than 1 week late = 0.25 points deducted (unless special approved circumstance).

HW submitted greater than 1 week late = 0.5 points deducted (unless special approved circumstance).

Grade	Percentage
A+	100+%
A	93-100%
A-	90-92%
B+	88-89%
B	83-87%
B-	80-82%
C+	78-79%
C	73-77%
C-	70-72%

The final date to withdraw from a course with a W for Spring 2025 is Friday, April 18.

ME 19901 Grades:

- Lab attendance: 13 labs x 10 pt. = 130 total points
- Lab instructors can be excused from up to 2 labs per semester but must arrange for another current lab instructor as a backfill in advance
 - Coordinate any backfills in advance with the HSW Course Coordinators: Raygan Bingham, rbingha@purdue.edu and Emerson Zubb, ezubb@purdue.edu
- Course Coordinators earn up to 10 extra credit points for their coordination of the instruction of the 6 lab sections
- Grading scale is same as ME 19900 listed above

Detailed Attendance Policy:

This course follows the [University Academic Regulations regarding class attendance](#), which state that students are expected to be present for every meeting of the classes in which they are enrolled. Attendance will be taken at the beginning of each class and lateness will be noted. When conflicts or absences can be anticipated, such as for many University-sponsored activities and religious observations, you should inform me of the situation as far in advance as possible. For unanticipated or emergency absences when advance notification is not possible, contact me as soon as possible by email or phone. For absences that do not fall under excused absence regulations (see below), this course follows the following procedures:

1. Do not come to class if you are feeling ill, but DO email me at juliaking@purdue.edu, with the subject line: ME 199 absence. I do not need details about your symptoms. Just let me know you are feeling ill and cannot come to class. If it is an emergency situation, please follow the University regulations on emergent medical care (see below).
2. Unless it falls under the University excused absence regulations (see below), any work due should be submitted on time via our course Brightspace.
3. If that day's class involves assessed work such as a test or presentation, you and I will plan if and how you can make up the work, following the assignment guidelines. This plan must be done before the next class period, so again, email me immediately when you know that you will miss class.
4. The most important consideration in any absence is how it will affect your achievement of the assignment objectives and the course learning outcomes.

For cases that fall under **excused absence regulations**, you or your representative should contact or go to the [Office of the Dean of Students \(ODOS\) website](#) to complete appropriate forms for instructor notification. Under academic regulations, excused absences may be granted by ODOS for cases of grief/bereavement, military service, jury duty, parenting leave, or emergent medical care. The processes are detailed, so plan ahead.

Nondiscrimination Statement:

Purdue University is committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. A hyperlink to Purdue's full Nondiscrimination Policy Statement is included in our course Brightspace under University Policies and Statements.

Mental Health/Wellness Statement:

If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try [Therapy Assistance Online \(TAO\)](#), a new web and app-based mental health resource available courtesy of Purdue Counseling and Psychological Services (CAPS). TAO is available to all students at any time by creating an account on the [TAO Connect website](#), or downloading the app from the App Store or Google Play. It offers free, confidential well-being resources through a self-guided program informed by psychotherapy research and strategies that may aid in overcoming anxiety, depression, and other concerns. It provides accessible and effective resources including short videos, brief exercises, and self-reflection tools.

If you need support and information about options and resources, please contact or see the [Office of the Dean of Students](#). Call 765-494-1747. Hours of operation are M-F, 8 a.m.- 5 p.m.

If you find yourself struggling to find a healthy balance between academics, social life, stress, etc., sign up for free one-on-one virtual or in-person sessions in West Lafayette with a [Purdue Wellness Coach at RecWell](#). Student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is free and can be done on BoilerConnect. Students in Indianapolis will find support services curated on the [Vice Provost for Student Life website](#).

If you're struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact [Counseling and Psychological Services \(CAPS\)](#) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS offices in [West Lafayette](#) or [Indianapolis](#).

Basic Needs Security:

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. There is no appointment needed and Student Support Services is available to serve students 8 a.m.-5 p.m. Monday through Friday.

Emergency Preparation:

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted onto the course website or can be obtained by contacting the instructors or TAs via email or phone. You are expected to read your @purdue.edu email on a frequent basis.

A link to Purdue's Information on [Emergency Preparation and Planning](#) is located on our Brightspace under "University Policies and Statements." This website covers topics such as Severe Weather Guidance, Emergency Plans, and a place to sign up for the Emergency Warning Notification System. I encourage you to download and review the [Emergency Preparedness for Classrooms document](#).

The first day of class, I will review the Emergency Preparedness plan for our specific classroom, following Purdue's required [Emergency Preparedness Briefing](#). Please make note of items like:

- The location to where we will proceed after evacuating the building if we hear a fire alarm.
- The location of our Shelter in Place in the event of a tornado warning.
- The location of our Shelter in Place in the event of an active threat such as a shooting.

Academic Integrity:

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information is submitted the greater the opportunity for the university to investigate the concern. More details are available on our course Brightspace under University Policies and Statements.

Academic Support:

The Helen Bass Williams [Academic Success Center](#), provides a variety of proactive, practical and approachable academic support services for you to strengthen your approaches and strategies for learning, including study skills consultations, peer coaching, workshops, and online handouts. Visit the [ASC website](#) for more information and to access resources.

Copyright Policy:

See the University Policies and Statements section of Brightspace for guidance on Use of Copyrighted Materials. Effective learning environments provide opportunities for students to reflect, explore new ideas, post opinions openly, and have the freedom to change those opinions over time. Students and instructors are the authors of the works they create in the learning environment. As authors, they own the copyright in their works subject only to the university's right to use those works for educational purposes. Students may not copy, reproduce, or post to any other outlet (e.g., YouTube, Facebook, or other open media sources or websites) any work in which they are not the sole or joint author or have not obtained the permission of the author(s).