PURDUE UNIVERSITY | College of Engineering

Engineering Faculty Document
No.: 77-24
February 19, 2024

TO: The Engineering Faculty
FROM: The Engineering Undergraduate Research Office
RE: New undergraduate course – ENGR 22003 – First Time Researcher

The Engineering Undergraduate Research Office has approved the following new undergraduate course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

FROM: ENGR 29600 First-Time Researcher
Spring 2023 - 0-3 total credits; Distance Learning

Prior Offerings:
Spring 2024 – 66 (as ENGR 29600)
Spring 2023 – 62 (as ENGR 29600)
Spring 2022 – 25 (not tracked as a course, but informal program)
Spring 2021 – 13 (as part of Indiana Space Grant in pilot year)

TO:
ENGR 22003 First-Time Researcher. 3 total credits
ENGR 22002 First-Time Researcher. 2 total credits
ENGR 22001 First-Time Researcher. 1 total credits
ENGR 22000 First-Time Researcher. 0 total credits

Course is open to any engineering student who is in the first or second semester of research at Purdue and has research for credit agreement with faculty. Purdue undergraduate students who have accepted First-Time Research (FTR) Fellowship offer letter are required to enroll as condition of award at the three-credit level. The zero-credit option should be used for students who are enrolled in parallel credits in their home department. The one- and two-credit options are being created for situations where students have a less than 10 hr. per week commitment.

RATIONALE:
First-time undergraduate researchers learn not only how to work on a research project but also how to present it, the course is scaffolded to prepare students to present at Undergraduate Research Symposium at end of semester. This course will help some of the most promising first-time researchers across the college of engineering to hone their presentation skills and translate their in-lab activity to an appropriate technical communication platform.

William Oakes
Assistant Dean for Experiential Education
150th Anniversary Professor
Director, EPICS Program
Professor, Engineering Education

Engineering Undergraduate Research Office

ENGR 29600: First-Time Researcher

Course Information

- **Course number and title:** ENGR 29600: First-Time Researcher
- **CRN:**
  - **0 credit: Use CRN = 27283**
  - **3 credits: Use CRN = 27284**
- **Course Brightspace Page:** TBD
- **Meeting day(s) and time(s)**: TBD
- **Instructional Modality:** Face-to-Face
- **Course credit hours:** Variable - 0 or 3.
- **Prerequisites (if any**): ENGR 103: Introduction to Engineering Research - encouraged but not required.
- **Course Description:** This introductory course will enrich First-Time Researchers' professional development as they engage in their first laboratory experience. We will discuss how to succeed in their ongoing research through effective time management, goal setting, and other skills.
- **Eligibility:** Purdue undergraduate students who have completed less than a full-semester (including summer) of college-level research. The expectation is that either the participant or the lab are in Engineering - so non-engineering students are invited to apply to projects within Engineering departments. If a project is posted that is outside of Engineering, only Engineering students are able to apply. Students who have accepted First-Time Research (FTR) Fellowship offers must enroll. Course is open to any engineering student who is in the first or second semester of research at Purdue and has research for credit agreement with faculty.

Credit Hour Registration Guidelines

You must enroll in 0 credit (pass/ fail) for this course if:

1. You've already enrolled in another research for credit course (MSE 499, CHE 411, etc.)
2. You're NOT a full-time student and you do not want your tuition to increase
3. You've reached the MAX number of credits (18 credit hours) one can take per semester

If you register for 3 credits they will count towards your GPA and you'll be assigned a regular letter grade based on the grading scale. All students are expected to complete the FTR requirements and participate in the agreed upon research hours regardless of credits they register for. We generally recommend all students register for the 3 credit option

unless they have a good reason not to (e.g., tuition cost if they aren't full-time). The varying credit amount for this course serves to fulfill the differing needs of our students for registration that we cannot anticipate, such as your credit hour limits or graduate plans.

Instructor(s) Contact Information

Instructional Team	Role	Email	Office Location	Office Phone Number	Student Consultation Hours
Kay Kobak, Ph.D.	Co-Instructor	kkobak@purdue.edu	DUDL 2526	765-496-2159	Tuesday: 10am-12pm Thursday: 1-3pm
John Howarter, Ph.D.	Co-Instructor	howarter@purdue.edu	DUDL 2522	765-496-2349	Monday: 11AM-12PM
Lipi Roy Andres Castillo	Graduate Teaching Assistant	Roy200@purdue.edu Castil12@purdue.edu	DUDL 2528		Wednesday: 10 am -12 pm

Please use the Brightspace discussion board for any questions you may have rather than emailing the TA or instructor so that students can help each other, and everyone can benefit from the questions and answers. You can also choose to ask your questions via office hours. The hours are posted above for the course staff.

When emailing course staff, please add **ENGR 296** to the subject line. If this is not added, your message may get caught by spam filters. Additionally, please ensure that your email comes from your 'purdue.edu' account.

Learning Resources, Technology & Texts

- *Required Reading.*
  Information on required readings is below; however, as we progress through the course, other resources may be added. Access to additional readings and online chapters will be through the Brightspace course readings folder and Library Reading List.

  Ten Simple Rules to make the most out of your undergraduate research career

- *Tutoring support.*

    - The Academic Success Center, located in Wiley Hall, Room C215, provides a variety of proactive, practical and approachable academic support services for undergraduate students.
    - Visit Ask a Librarian to connect with helpful resources and services provided by the Purdue Libraries and School of Information Studies for course assignments and projects.
- *Brightspace learning management system (LMS).*
  Access the course via Purdue's Brightspace learning management system. Begin with the Start Here tab, which offers further insight to the course and how you can be successful in it. It is strongly suggested that you explore and become familiar not only with the site navigation, but also with content and resources available for this course. See the Student Services widget on the campus homepage for resources such as Technology Help, Academic Help, Campus Resources, and Protect Purdue.

  For more detailed guidelines of Brightspace, you can refer to Guide to Brightspace implementation and use

- *Minimum Technology Requirements.*
    - Students must be able to use Brightspace and its features to succeed in this course.
    - Word Processor (i.e. MS Word), remember that MS Office is free for all students.
    - A reliable internet connection to access the online course content via Brightspace

Learning Outcomes

By the end of the course, you will be able to:

1. Conduct your research in an informed and responsible manner
2. Write a technical abstract for your research project
3. Present a research poster or a talk professionally at the Spring Undergraduate Research Conference

Assignments

Your achievement of course learning outcomes will be assessed through a combination of assessments over the semester. Details on these assignments, including a schedule of due dates, rubrics to guide evaluation, and guidelines on discussion participation and evaluation will be posted on the course website.

1.	2. Assessment Name	3. Assessment Start Date	4. Assessment Due Date	5. Points
0.	Engagement with Proposed Research			40
1.	Reading Assignment Quiz			2
2.	RCR certificate			3
3.	Draft abstract			5
4.	Final Abstract			5
6.	Research poster/talk draft			5
7.	Final Research Poster/Talk (at Spring Conference)			15
9.	Attendance at 6 class sessions			25
			TOTAL	**100**

Grading Scale

Grades will be based on completion of weekly tasks as defined by the advisor, participation in the spring research symposium, and engagement with professional development opportunities.

- 40% of the grade will be determined by **engagement with proposed research.** This grade is largely based on attendance (honoring the agreed work schedule) and maintaining weekly communication with grad student/professor, but also includes diligent effort in completing project objectives while considering outside difficulties (such as data access being denied). **We will seek the input of your research advisor when determining this grade.**
- 20% of the grade will be determined by completing assigned projects (Abstract creation, research poster/talk, etc.)
- 25% of the grade will be determined by participation in/attendance of **professional development** opportunities presented by EURO staff. A list of planned offerings is below.
- 15% of the grade will be based on successful participation in the OUR Spring Symposium of the research you have done.

S.No.	Points out of 100	Grade
1.	[90,100]	A
2.	[80,90)	B
3.	[70,80)	C
4.	[60,70)	D
5.	[50,60)	E
6.	<50	F (Fail)

Assignment Policy

Unless for an officially excused absence, assignments are always required to be submitted on Brightspace by 10:30 am on the due date (i.e. before class starts). Late assignments will be assessed with a 20% deduction of points per week late up to 3 weeks. After 3 weeks, late assignments will not be accepted. Most assignments allow unlimited submissions

before the deadline, but only your last attempt will be considered for grading. For any assignments submitted to Brightspace, please properly format your submission file name as "Week <#> Assignment - Last Name, First Name". For example, "Week 6 Assignment - Kobak, Kay."

Attendance Policy

Attendance in the lab at agreed upon times and at meetings with your lab mentor/research advisor are required. This will constitute part of your "engagement with research" grade. Additionally, there will be a few mandatory events which occur during the scheduled class time(s). You will be notified in advance via email and brightspace of any events which you are required to attend.

Attendance for the Spring Symposium is **mandatory**. The Spring Symposium will take place between April 8 and 12. Students are required to present a poster or oral presentation during the symposium. More information can be found here: https://www.purdue.edu/undergrad-research/conferences/spring/index.php

For cases that fall under the University excused absence regulations – Grief/Bereavement, Military Service, Jury Duty, Parenting Leave, or the Medically Excused Absence Policy for Students -- you or your representative go to the Office of the Dean of Students (ODOS) website to complete appropriate request forms. ODOS reviews these requests and, if granted, will notify all your instructors. In cases related to COVID-19, please follow the Protect Purdue Updates for the Spring 2023 Semester.

Attendance will be taken at every professional development opportunity offered, but your attendance is only required at 6 of these.

Course Schedule

Date	***Topic***	***Learning Outcomes***	***Activity/Assignment*** *(Assignments due 10:30 am before the NEXT class, unless otherwise noted)*
Week 1: Jan 8-12	Professional Development Session 1: First-Time Researcher Orientation & Goal Setting	a. Meet the cohort and discuss syllabus/learning objectives b. Learn short-term and long-term goal setting	**Reading Assignment** (Read before the next class, it may be tested): Ten simple rules to make the most out of your undergraduate research career | PLOS Computational Biology **In-class activity**: Goal setting workshop **Assignment:** Login to the CITI Program using your Purdue affiliation (i.e., select "Log in through my institution"). Complete the Responsible Conduct of Research (RCR) Basic training. Upload your RCR certificate to Brightspace.
Week 2: Jan 15-19	Professional Development Session 2: Time Management	Learn time management techniques to conquer your day!	
Week 3: Jan 22-26	Professional Development Session 3: Reading a Technical Paper & Types of Technical papers	a. Understand how to read a technical paper efficiently depending on what you are looking for b. Understand the different types of technical papers - Review papers/ conference proceedings/ methods papers, etc.	
Week 4: Jan 29 - Feb 2	**No Class**		
Week 5: Feb 5-9	Professional Development Session 4: Writing an Abstract (**attendance highly encouraged**)	Purpose and order of research abstract	**Assignment:** Draft a research Abstract on your current work
Week 6: Feb 12-16	**No Class**		

Week 7: Feb 19-23	**No Class**		**Assignment:** Submit final abstract next week!
Week 8: Feb 26 - Mar 1	Professional Development Session 5: Research Poster Do's and Don'ts **(attendance highly encouraged for poster presenters)**	Learn how to make an academic poster	**In-Class Activity:** Poster Critique
Week 9: Mar 4-8	Professional Development Session 6: Research Talk Do's and Don'ts **(attendance highly encouraged for talk presenters)**	Learn how to give an effective research talk	
Week 10: Mar 11-15 - NO CLASS - Spring Break			
Week 11: Mar 18-22	Professional Development Session 7: Spring Conference Practice 1 **(required for poster presenters)**	Practice your Research Poster with the class and receive feedback	
Week 12: Mar 25-29	Professional Development Session 8: Spring Conference Practice 2 **(required for talk presenters)**	Practice your research talk with the class and receive feedback	
Week 13: Apr 1-5	Professional Development Session 9: Spring Conference Practice 3	You are welcome to present updated versions of your talk/poster if you integrated feedback	
Week 14: Apr 8-12	**No Class - Attend Spring Conference**		Research and Poster Talks - Spring Conference
Week 15: Apr 15-19	Professional Development Session 10: Networking	a. Purpose of networking b. How to use LinkedIn to grow your network	
Week 16: Quiet Period - No Class, NO FINAL!			

6. 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. The teaching staff for this course will diligently monitor academic dishonesty in all assignments. Students found to engage in academic dishonesty are subject to discipline to potentially include: **a grade of F for the course, a permanent letter added to your file, and reporting the incident to the Dean of Students for further action.** Two letters in your file will result in an automatic forwarding of the case to the Dean of Students.

Intellectual Property

Intellectual Property that arises in any part in the course of employment or enrollment at the University, or in the course of a work-for-hire relationship or visiting scholar relationship with the University, is Purdue Intellectual Property, except as follows:

- The University permits authors to retain and manage the copyright to Instructional Copyrightable Works and Scholarly Copyrightable Works, subject to a license in favor of the University as set forth below.
- The University permits a student to retain title to Intellectual Property that the student creates for credit and without compensation in a University course through the use of course-wide resources, provided that the Intellectual Property is not burdened by any pre-existing contractual obligation of the University.
- The University permits software code to be contributed to open-source projects upon (1) the authorization of the funding sponsor and principal investigator (if any) for the coding project and (2) the consent of the University administrator(s), if any, who request or direct the coding project.
- Intellectual Property from research directed and funded under a work-for-hire contract administered by the University's Sponsored Program Services is not Purdue Intellectual Property.
- Intellectual Property from research performed pursuant to a University contract that expressly exempts the research from the application of this policy is not Purdue Intellectual Property.
- Intellectual Property generated solely in the course of an Outside Activity without the use of University Resources or pre-existing Purdue Intellectual Property is not Purdue Intellectual Property.

Each Instructional or Scholarly Copyrightable Work is, by operation of this policy, subject to a perpetual non exclusive, royalty-free license from its University author(s) to the University to use, duplicate and distribute the Instructional or Scholarly Copyrightable Work for all research and educational purposes of the University.

This policy is deemed 1) a term and condition of employment for every employee of the University, 2) a term and condition of enrollment and attendance at the University by students, and 3) a term and condition of permission to participate in any University research or other academic activity by any person (whether or not employed by,

compensated by or enrolled at the University). All such individuals are required to adhere to this policy and its supporting Procedures on Disclosure, Assignment and Commercialization of Intellectual Property.

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.

Accessibility

Purdue University strives to make learning experiences accessible to all participants. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone at 765-494-1247.

Mental Health/Wellness Statement

If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try WellTrack**.** Sign in and find information and tools at your fingertips, available to you at any time.

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 am- 5 pm.

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 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.

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 office on the second floor of the Purdue University Student Health Center (PUSH) during business hours. The CAPS website also offers resources specific to situations such as COVID-19.

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 Preparedness

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.