



VIP Syllabus Fall 2020

ENGR 17911, 17920, 27920, 37920, 47920, 47921, 47922

<https://engineering.purdue.edu/vip/>

About VIP

The Vertically Integrated Projects (VIP) Program provides an opportunity for undergraduate students to earn academic credit while engaging in authentic and extended research and design projects related to active research areas of Purdue faculty members and national, international, and industry-sponsored design challenges. Students can participate on interdisciplinary and vertically-integrated teams (first-year through seniors) with faculty and graduate student mentors for multiple semesters to address these real-world research and design challenges. The faculty, staff, and graduate students who lead VIP teams are also known as mentors and/or advisors.

The continuity, technical depth, and disciplinary breadth of these teams are intended to:

- Provide the time and context necessary for students to learn and practice many different professional skills, make substantial technical contributions to the project, and experience many different roles on a large, multidisciplinary design/discovery team.
- Support long-term interaction and mentoring among undergraduate and graduate students on the team and enable the completion of large-scale design/discovery projects that are of significant benefit to faculty members' scholarship and exploration efforts.

VIP Program and Course Administration Contact Information

General email: vip@purdue.edu

Primary Course Instructor:

Prof. Carla Zoltowski (Director)

Dr. Nichole Ramirez (Assistant Director)

Email: cbz@purdue.edu

Email: nramire@purdue.edu

Office Hours: Drop-in sessions: Wednesdays, 5:30 – 6:20 pm EST (Zoom) or by appointment

Leadership: Prof. Jan Allebach
Prof. Yung-Hsiang Lu

allebach@purdue.edu

yunglu@purdue.edu

Learning Outcomes:

Students in VIP will make progress on each of the learning outcomes listed below. A student who successfully fulfills the ECE senior design requirements will have demonstrated all of the following outcomes over the two senior design semesters:

- i. an ability to apply engineering design to create a product (e.g., device, system, process, software, etc.) that meets the specified needs of this engineering design experience with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- ii. an ability to develop and conduct experimentation, analyze and interpret data, and use engineering judgment to draw conclusions related to the development of the product of this engineering design experience.
- iii. an ability to identify, formulate, and solve complex engineering problems arising from this engineering design experience by applying principles of engineering, science, and mathematics.

- iv. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives associated with this design experience
- v. an ability to communicate effectively with a range of audiences appropriate to this design experience in both a written report and oral presentation.
- vi. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies to complete the engineering design experience associated with this course.
- vii. an ability to recognize ethical and professional responsibilities associated with this engineering design experience and make informed judgments which must consider the impact of the product of this engineering design experience in global, economic, environmental, and societal contexts.

Brightspace sections

- For Overall Course Announcements and Professional Development (PD) opportunities: Fall-2020-VIP-PD
- For lab: Fall-2020-VIP-*team*

Software Tools

The software tools will vary based on the project. However, in general, the course and teams will use the following software tools:

- Brightspace: Within Brightspace, you will have access to course announcements, schedules, assignments, grades, feedback, and course resources. *Preferred browser:* ITaP recommends Google Chrome or Mozilla Firefox when accessing Brightspace.
- WebEx, Zoom, Slack and/or other conferencing/meeting/messaging platforms
- CATME: You will use CATME to submit information used for Peer & Team Evaluations ([Link to CATME](#)).
- MS Office: Word, Excel, and PowerPoint.
- Adobe: PDF.

Expectations and Grading

Attendance/Participation

Within the VIP course, you will be working in teams on a project. Your project work, both individually and as part of the team, are the most significant aspects of the course. Thus, you are expected to participate in all scheduled (virtual or in-person) VIP team meetings (the lab portion of your VIP course), as well as any sub-team meetings. Meetings will be conducted via in-person or virtually on WebEx, Zoom, or other tool(s) as designated by your VIP team mentor and/or decided by you and your project team. Students should stay home and contact the Protect Purdue Health Center (496-INFO) if they feel ill, have any symptoms associated with COVID-19, or suspect they have been exposed to the virus. In the current context of COVID-19, in-person attendance will not be a factor in the final grades. If you need to miss a meeting, you are expected to communicate your absence with as much lead-time as possible to your mentors and teammates. Furthermore, you are responsible for knowing what occurred in that meeting (typically by discussing it with other team members) and how you can contribute to the project and team until the next meeting. An excused absence does not relieve you of that responsibility. When the student is unable to make direct contact with the instructor and is unable to leave word with the instructor's department because of circumstances beyond the student's control, and in cases of bereavement, quarantine, or isolation, the student or the student's representative should contact the Office of the Dean of Students via [email](#) or phone at 765-494-1747. Our course Brightspace includes a link on Attendance and Grief Absence policies under the University Policies menu.

Professional Development Plan

You are also expected to develop and complete an individualized Professional Development plan to support your success on your project and your team, and overall, in your career and your life. The professional development opportunities be generally be offered remotely and asynchronously, although there will be interactive and synchronous activities as well.

Grading

Your grade is based on three areas, along with seven requirements, and is assessed according to your course level and major. The grading guidelines are as follows; please note that “+” or “-” grades may be given if the assessment falls above or below, respectively, the stated guideline.

Grade	Description
A	Overall, the student’s accomplishments and effort, documentation, and teamwork and interactions are excellent. All of the seven (7) requirements have been satisfied.
B	Overall, the student’s accomplishments and effort, documentation, and teamwork and interactions are good. Six (6) of the seven (7) requirements have been satisfied.
C	Overall, the student’s accomplishments and effort, documentation, and teamwork and interactions are adequate. Five (5) of the seven (7) requirements have been satisfied.
D	Overall, the student’s accomplishments and effort, documentation, and teamwork and interactions are marginal. More than two of the seven (7) requirements are missing.
F	Overall, the student’s accomplishments and effort, documentation, and teamwork and interactions are unacceptable. More than three of the seven (7) requirements are missing.

Accomplishments and effort:

- Quantity of project accomplishments
- Quality of project accomplishments
- Initiative
- Work ethic
- Ability to overcome project setbacks
- Learning needed for the project
- Focuses effort on achieving goals
- Manages time and tasks well
- Overall**

Documentation:

- Individual documentation (quality/quantity)
- Contributions to team documentation (quality/quantity)
- Contributions to team poster/presentations
- Use of appropriate tools (e.g., Git)
- Overall**

Teamwork and Interactions:

- Participates fully in team (lab) meetings
- Participates fully in sub-team meetings
- Contributes fair share of team’s work with acceptable quality
- Keeps commitments and completes assignments on time
- Listens to teammates and respects their contributions
- Communicates clearly. Shares information with teammates
- Respects and responds to feedback from teammates
- As appropriate, involves and assists others in efforts
- Demonstrates leadership and/or project management skills
- Development and implementation of PD plan
- Overall**

Seven Requirements and Due Dates

As part of the assessment of the above, each student is required to:

1. Document individual contributions to the project and team in format as required by your project mentor(s).
2. Contribute as appropriate to project documentation, presentations, publications, and/or poster
3. Submit Professional Development plan by Friday, September 11th.

4. Complete mid-semester individual performance evaluation by Friday, October 9th at 11:59 pm in Brightspace.
5. Complete Final Individual Performance Evaluation & PD Reflection by Friday, December 4th at 11:59 pm in Brightspace.
6. Complete mid-semester and final peer evaluation of team members in CATME (mid-semester due Friday, October 9th at 11:59 pm and final peer evaluations due Friday, December 4th at 11:59 pm)
7. Complete final Purdue course evaluation and submit screen shot of completion to Brightspace (due Friday, December 4th at 11:59 pm).

Performance assessment will be done once at mid-semester and again at the completion of the semester using the criteria that follows. The mid-semester assessment is advisory (formative).

Professional Development (PD) Plan

To support your success on your project and your team, and overall, in your career and your life, you will create an individualized Professional Development Plan. For all students except for those enrolled in ENGR 17911 or 17912, the plan is expected to include ten (10) Professional Development (PD) activities that can be completed throughout the semester. Three activities are mandatory: 1) Welcome to VIP, 2) Abstract Submission, and 3) Conference Presentation. However, for ENGR 17911 and 17912 students, only the Abstract Submission and Conference Presentation are required. Typically, VIP students participate in the Purdue Undergraduate Research Expo in the Fall through the Office of Undergraduate Research to complete the abstract and presentation requirements. *A team's advisor may opt for them to participate in a different conference or venue to satisfy the requirement.*

Track/Topic*	Activity	Organizing unit	Date (of activity or expected participation)
1. PD (Required)	Welcome to VIP	VIP	Live on Wed, 8/26 at 5:30 pm; will be recorded
2. Communication (Required)	Expo – Abstract submission	OUR	See Fall Undergraduate Research Expo Website
3. Communication (Required)	Expo – Poster/Oral Presentation	OUR	November 16 - 20

The remaining seven activities are to be chosen by the student, depending on their interest and what would be most beneficial for their work on a specific team.

VIP is working with other programs to compile an expansive library of Professional Development videos along with access to interactive workshops, live presentations, etc. Students should browse the materials and talk with their mentors during the first week of the semester to create their individual Professional Development (PD) Plan. The PD plan should be submitted on Brightspace by Friday, September 11th. Students may update their plans as needed during the semester without resubmitting to Brightspace.

Students will be expected to document their participation in each of the activities in the Final Individual Performance Evaluation & PD Reflection assignment.

ECE Senior Design Students

In addition to the above requirements and expectations, senior design students must complete the following documents (templates are posted on the VIP website and in Brightspace):

- VIP Senior Design Project Proposal: Must be completed by individually by each senior design student during the first semester of Senior Design to ensure he/she has an appropriate project and role. This is

to be submitted at the mid-semester and final evaluations during the first senior design semester instead of the Individual Performance Evaluation rubrics.

- VIP Senior Design Project Description: Must be completed during the second semester of Senior Design by each project team. This is to be submitted at the mid-semester and final evaluations during the second senior design semester instead of the Individual Performance Evaluation rubrics.
- VIP Senior Design Reflection, Outcomes Matrix, and Rubric document: An index of how the course outcomes have been met over the two semesters and where evidence for this mastery can be found (notebook, project documentation, etc.). This is to be submitted at the mid-semester and final evaluations both senior design semesters instead of the Individual Performance Evaluation rubrics.
- Both the Senior Design Project Proposal/Description and the Senior Design Reflection, Outcomes Matrix and Rubric document will be used by the advisor(s) and VIP admin to approve the satisfaction of the course outcomes and in determining the course grade.

Grading for Senior Design Students

(Each outcome will be rated on a scale from 1 to 4, where 4 is “Excellent”, 3 is “Good”, 2 is “Adequate/Acceptable”, and 1 is “Inadequate/Unacceptable”	Weight
i. An ability to apply engineering design to create a product that meets the specified needs of this engineering design experience with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.	30%
ii. An ability to develop and conduct experimentation, analyze and interpret data, and use engineering judgment to draw conclusions related to the development of the product of this engineering design experience.	15%
iii. An ability to identify, formulate, and solve complex engineering problems arising from this engineering design experience by applying principles of engineering, science, and mathematics.	15%
iv. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives associated with this design experience.	10%
v. An ability to communicate effectively with a range of audiences appropriate to this design experience in both a written report and oral presentation.	10%
vi. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies to complete the engineering design experience associated with this course.	10%
vii. An ability to recognize ethical and professional responsibilities associated with this engineering design experience and make informed judgments which must consider the impact of the product of this engineering design experience in global, economic, environmental, and societal contexts.	10%

Academic Case Manager

If you become quarantined or isolated at any point in time during the semester, in addition to support from the Protect Purdue Health Center, you will also have access to an Academic Case Manager who can provide you academic support during this time. Your Academic Case Manager can be reached at acmq@purdue.edu and will provide you with general guidelines/resources around communicating with your instructors, be available for academic support, and offer suggestions for how to be successful when learning remotely.

Importantly, if you find yourself too sick to progress in the course, notify your academic case manager and your VIP team instructor via email or Brightspace. Your VIP team advisor will make arrangements based on your particular situation. The Office of the Dean of Students (odos@purdue.edu) is also available to support you should this situation occur.

Major Campus Emergency

In the event of a major campus emergency, course requirements, deadlines, and grading are subject to change that may be necessitated by a revised calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted on Brightspace and via email.

Academic Integrity and Professional Responsibility

Academic integrity is one of the highest values that Purdue University holds. The VIP Program expects every member of the Purdue community to adhere to the Purdue Honor Pledge ("As a boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue.") and practice honorable, ethical, and professional behavior both inside and outside the classroom. In VIP, students are encouraged to work together and share information. When indicated, students and teams are allowed to modify previous versions of documents to be submitted for the current assignment. However, it is unacceptable for students to claim individual work that is not their own or to use sources without appropriate citation. It is also unacceptable for students to misrepresent information to their instructional staff, their team, and/or their client. In addition, misuse of VIP resources is considered dishonest. At the instructor's discretion, instances of academic dishonesty will result in a reduced score, a zero score, or a failing grade for the course. All occurrences of academic dishonesty will be reported to the [Office of Students Rights and Responsibilities](#) (OSSR) and the students' respective schools. If there is any question as to whether a given action might be construed as academic dishonesty, please see the instructor or the teaching assistant before you engage in any such action.

Students with Disabilities:

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

Mental Health Resources

- **If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try WellTrack, <https://purdue.welltrack.com/>.** 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 see the Office of the Dean of Students, <http://www.purdue.edu/odos>, for drop-in hours (M-F, 8 am- 5 pm).
- **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](tel:7654946995) and <http://www.purdue.edu/caps/> during and after hours, on weekends and holidays, or by going to the CAPS office of the second floor of the Purdue University Student Health Center (PUSH) during business hours.

Labs and Facilities

The VIP Suite is expected to be available after the start of the semester on a limited basis. More information will be provided at that time. If your VIP team uses your advisors' research lab facilities, they will communicate if/when access is available, although in most cases work is expected to be done virtually. If you are on campus for your VIP work, you are expected to comply with the Protect Purdue Plan.

The [Protect Purdue Plan](#), which includes the [Protect Purdue Pledge](#), is campus policy and as such all members of the Purdue community must comply with the required health and safety guidelines. Required behaviors in this class include: staying home and contacting the Protect Purdue Health Center (496-INFO) if you feel ill or know you have been exposed to the virus, properly wearing a mask [in classrooms and campus buildings](#), at all times (e.g., mask covers nose and mouth, no eating/drinking in the classroom), disinfecting desk/workspace prior to and after use, maintaining appropriate social distancing with peers and instructors (including when entering/exiting classrooms), refraining from moving furniture, avoiding shared use of personal items, maintaining robust hygiene (e.g., handwashing, disposal of tissues) prior to, during and after class, and following all safety directions from the instructor.

Students who are not engaging in these behaviors (e.g., wearing a mask) will be offered the opportunity to comply. If non-compliance continues, possible results include instructors asking the student to leave class and instructors dismissing the whole class. Students who do not comply with the required health behaviors are violating the University Code of Conduct and will be reported to the Dean of Students Office with sanctions ranging from educational requirements to dismissal from the university.

Any student who has substantial reason to believe that another person in a campus room (e.g., classroom) is threatening the safety of others by not complying (e.g., not wearing a mask) may leave the room without consequence. The student is encouraged to report the behavior to and discuss next steps with their instructor. Students also have the option of reporting the behavior to the [Office of the Student Rights and Responsibilities](#). See also [Purdue University Bill of Student Rights](#).

Learning Remotely Resources

Purdue has posted a number of resources on the "Learning Remotely" website, including tools for working collaboratively with your peers: <https://www.purdue.edu/innovativelearning/learning-remotely/>