VIP Syllabus Spring 2019
ECE 27900, 37900, 47900
ENGR 29600, ENGR 39600, ENGR 49600
https://engineering.purdue.edu/vip/

About VIP

The Vertically-Integrated Projects (VIP) Program operates in a research and development context. Undergraduate students that join VIP teams earn academic credit for their participation in design/discovery efforts that assist faculty and graduate students with research and development issues in their areas of expertise. The faculty, staff, and graduate students who lead VIP teams are known as advisors.

The teams are:

- Multidisciplinary - drawing students from all disciplines on campus;
- Vertically-integrated - maintaining a mix of sophomores through PhD students each semester;
- Long-term - each undergraduate student may participate in a project for up to three years and each graduate student may participate for the duration of their graduate career.

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 between the graduate and undergraduate students on the team. The graduate students mentor the undergraduates as they work on the design/discovery projects embedded in the graduate students' research.
- Enable the completion of large-scale design/discovery projects that are of significant benefit to faculty members' research programs.

VIP Program and Course Administration Contact Information

General email:		vip@ecn.purdue.edu
Leadership:	Prof. Carla Zoltowski (Director)	cbz@purdue.edu
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Additional Professional Development Instructors:

	Brooke Parks	brookeparks@purdue.edu

This Syllabus

Please note that this syllabus is the general VIP syllabus. If your VIP team has its own specific syllabus, it supersedes this document.

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[1] 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.

Expectations and Grading

The premise of VIP is teams working on projects. Much like a real-world engineering team, individual members work on different aspects of the project. Team members range from sophomores through graduate students, from first-time participants to students who have been involved for four or more semesters.

Students are expected to attend all scheduled VIP team meetings, as well as participate in at least ten (10) Professional Development opportunities (see below). In addition to the scheduled team meeting time each week, each project or sub-team will determine working times, designated as "sub-team meetings." Students are responsible for participating in their team and sub-team meetings. If you miss any meeting, you are responsible for knowing what occurred in that meeting (typically by discussing it with other team members). An excused absence does not relieve you of that responsibility.

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.

[1] "Product" refers to any device, system, process, software, etc. resulting from this VIP/design experience.

Accomplishments and effort:
__ Quantity of project accomplishments
__ Quality of project accomplishments
__ Completion of team assignments
__ Initiative
__ Learning needed for the project
__ Overall

Documentation:
__ Individual documentation
__ Contributions to team documentation
__ Contributions to team poster
__ Use of appropriate tools (e.g., Git)
__ Overall

Teamwork and Interactions:
__ Team/sub-team meeting attendance (_/_)
__ On-time attendance
__ Team/sub-team meeting participation
__ Contributes useful ideas
__ Recognizes others' ideas
__ Focuses effort on achieving goals
__ Involves others in efforts
__ Assists others with their efforts
__ Manages time and tasks well
__ Leadership skills
__ Written communication skills
__ Oral communication skills
__ PD participation/attendance (__/10)
__ Overall

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

1. Maintain a design notebook (individual documentation), either paper or electronic as required by your advisor
2. Contribute as appropriate to project documentation
3. Complete mid-semester individual performance evaluation by Monday, February 18th at 5 pm in Blackboard.
4. Complete final individual performance evaluation by Friday, April 26th at 5 pm in Blackboard.
5. Complete mid-semester and final peer evaluation of team members (mid-semester due Monday, February 18th at 5 pm and final peer evaluations due Friday, April 26th at 5 pm)
6. Complete final Purdue course evaluation and submit screen shot of completion to Blackboard (due April 26th at 5 pm).
7. Participate in at least ten (10) Professional Development (PD) opportunities, including the three (3) required sessions/activities (1. intro lecture; 2. paper/abstract submission; 3. Oral or poster presentation), and ensure attendance is recording in Blackboard or PD form is submitted via email by Friday, April 26th at 5 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) Credits
Students are expected to earn at least ten (10) Professional Developments credits. Required activities include the Introduction to VIP session (lecture) AND submitting either a PAPER or an abstract to the Undergraduate Research Conference. Each of these components are described below.

Professional Development Sessions (lectures): Wednesdays, 5:30 – 6:20 pm in WALC 1018

Your iClicker is required for attendance. The tentative schedule is below. Changes will be communicated by email and posted on the VIP website. To get credit for attending a Professional Development (PD) session, you must complete **both** the initial and final attendance quizzes via the iClicker. The initial quiz will take place within first 5 minutes of lecture, and the final will take place during last 5 minutes of lecture. Participation in the lecture activities is expected.

Tentative Professional Development schedule (as of 1/9/19)

Date	Topic	Presenter(s)/Session Facilitator(s)
1/9	**Introduction to VIP – Required** **Plan for PD credits**	Profs. Carla Zoltowski, Jan Allebach, Yung-Hsiang Lu
1/16	Leadership and Interpersonal Communication Styles	Brooke Parks, Profs Carla Zoltowski and Yung-Hsiang Lu
1/23	LaTex Workshop	Dennis Ogbe
1/30	Class cancelled due to weather. Rescheduled to 4/10.	
2/6	CATME peer evaluation training	Dr. Dan Ferguson
2/13	Entrepreneurship: I have found a problem that I want to solve—now what?	Dr. Tim Peoples, Managing Director, Purdue Foundry
2/20	Writing Research Abstracts	Brooke Parks
2/27	Intro Machine Learning	Prof. Ed Delp & Research group
3/6	Deep Fakes	Prof. Ed Delp & Research group
3/13	No class – Spring Break	
3/20	Data Visualization	Prof. David Ebert
3/27	Poster Presentations and Bad Graphs	Brooke Parks and Prof. Yung-Hsiang Lu
4/3	Elevator Pitches: Poster presentations and how to talk about it in interviews	Brooke Parks and Prof. Carla Zoltowski
4/10	Leadership	Profs. Zoltowski and Lu
4/17	Professional Ethics and Responsibility	Prof. Carla Zoltowski
4/25	No class	

Spring 2019 Purdue Undergraduate Research Conference - Required

Thurs, 2/4 or Friday, 3/1	**Undergraduate Research Symposium: Required to submit either paper OR abstract** - **Paper, due Thursday, 2/4:** 3 - 5 page papers to be considered for Oral Presentation; accepted papers will earn 2 PDH credits. **OR** - **Abstract, due Friday, 3/1**: 250 word abstract; accepted abstracts will earn 1 PD credit.

Thurs, 4/4 or Tues, 4/9	**Spring 2019 Purdue Undergraduate Research Conference – Required for all students**
	- **4/4: Oral Presentations**: expected to attend entire presentation slot of your presentation (one hour) to earn 2 PDH credits
	- **4/9: Poster Session**:
	  ○ **If poster accepted**: expected to present poster for one hour and visit other posters for 30 minutes to earn 1 PDH credit
	  ○ **If poster not accepted**: expected to attend poster session for one hour and complete assignment earn 1 PDH credit

Online/other learning opportunities

Git video and online quiz	Will be available by end of January. Link will be posted on Blackboard. Must pass online quiz to receive credit.
Linux shell video and online quiz	Will be available by end of January. Link will be posted on Blackboard. Must pass online quiz to receive credit.
Saturday (1/26): 1:30 – 4:30 pm: Interactive writing workshop. Location WALC 1087	Prof. Yung Lu; Must register at the following link: https://goo.gl/forms/k282cpQrCVkO99Au2 (2 credits)
Individual feedback on technical or professional documents	Contact Brooke Parks to schedule (brookeparks@purdue.edu)
Advisor Approved Professional Development Activity	Complete activity and email form to Emily Bartusiak (ebartusi@purdue.edu) by April 26th 5 pm deadline.

Your PD attendance will be posted in Blackboard. Any errors need to be reported to the course staff within 2 weeks of the session. Forms for alternate PD opportunities can be submitted via Blackboard within 72 hours of the qualifying event.

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):

- 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 used by the advisor(s) and VIP admin to approve the satisfaction of the course outcomes and in determining the course grade.

Summary of Key Dates of Required Activities

Date	Activity/Event
Wed, Jan 9th	Introduction to VIP 5:30 pm, WALC 1018
Thurs, 2/4 or Friday, 3/1	Purdue Undergraduate Research Conference: Submit paper or submit abstract
Mon, Feb 18th at 5 pm	Complete and submit mid-semester individual performance evaluation and peer evaluation in Blackboard
Thurs, April 4th or Tues, April 9th	Purdue Undergraduate Research Conference: Oral Presentation or Poster session
Fri, April 26th at 5 pm	• Design notebooks and final reports due (or date determined by advisor) • Complete and submit final individual performance evaluation in Blackboard • Complete peer evaluation • Complete Purdue course evaluations and post screen shot of completion screen in Blackboard • All PD credits must be completed and submitted by emailing PDH form
April 29 – May 3	Finals week. In general, teams do not meet except perhaps for final review of project.

Academic Integrity and Professional Responsibility

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 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

VIP has rooms and equipment that are shared by many VIP teams. In order to provide a good working environment, the following expectations apply to anyone with access to these rooms and equipment:

Room Access & General Use

- Registered VIP students and staff can access the new VIP meeting rooms via the card swipe system using their PUIDs. Please contact the VIP TAs if your card does not work. Allowing access to non-VIP students via your card IS NOT ALLOWED.
- Students should only occupy the room for the purpose of the VIP course (project and team meetings and VIP project work, not for other study groups and/or individual study sessions).
- VIP students and staff should use the room scheduling system for scheduling team and sub-team meetings. Please be respectful of other VIP teams by limiting scheduled meetings to 90 minutes and by vacating the room promptly after the meeting concludes.
- If an emergent administrative need arises that requires the use of a student-occupied room, students should leave the room in a timely manner.

Room Maintenance

- Users will maintain VIP rooms to an orderly condition. Tables should not be moved from their original positions, and chairs should not leave the room. Tables should be wiped clean and all trash should be properly disposed of. Users should notify the TAs if the room is found in a disorderly state.

- Users should not store personal belongings in the room. Items found left will be disposed of on a regular basis.
- Only water in a covered/closable container is allowed in the VIP meeting rooms. No food or other beverages are allowed in the room.
- Care must be taken to avoid damage or abuse to furniture and equipment. Any damage that occurs must be reported at the first opportunity to TAs. Any damage done to the room beyond "damage of common use" at the time of occupation is the responsibility of the student.
- Users should not remove or misuse any property in the room.

Safety & Security

- The room will automatically lock upon departure. Do not prop the door open at any time. Pay proper attention that the door is securely closed behind you.
- No personal belongings should be left in the room during times when the student is not present.

Many VIP teams also utilize advisors' lab facilities which may have additional rules and expectations. Students are expected to follow those rules as well. VIP team advisors and staff will communicate those to students if they pertain.