

COURSE SYLLABUS

1 ECE 4970 - Design Project - EE

2 Meeting Information

3 credits, 3 contact hours One 2.5 hour class meeting infrequently

a. **Section 001:**

Lecture: Thursday 03:00 pm to 05:30 pm, **CEER 001**

b. **Section 002:**

Lecture: Thursday 03:00 pm to 05:30 pm, **CEER 001**

c. **Section 003:**

Lecture: Thursday 03:00 pm to 05:30 pm, **CEER 001**

d. **Section 004:**

Lecture: Thursday 03:00 pm to 05:30 pm, **CEER 001**

e. **Section 005:**

Lecture: Thursday 03:00 pm to 05:30 pm, **CEER 001**

f. **Section 006:**

Lecture: Thursday 03:00 pm to 05:30 pm, **CEER 001**

g. **Section 007:**

Lecture: Thursday 03:00 pm to 05:30 pm, **CEER 001**

h. **Section 008:**

Lecture: Thursday 03:00 pm to 05:30 pm, **CEER 001**

i. **Section 009:**

Lecture: Thursday 03:00 pm to 05:30 pm, **CEER 001**

j. **Section 010:**

Lecture: Thursday 03:00 pm to 05:30 pm, **CEER 001**

3 Course Instructor(s), TA(s)

a. **Section 001:**

Class Instructor: [Pritpal Singh](#)
Office Hours: Tolentine 406 Tues and Thurs 1:30 - 2:30 p.m., Friday 10:30 - 11:30
a.m., or by appt.
TA: None

b. **Section 002:**

Class Instructor: [Mark A. Jupina](#)
Office Hours: , or by appt.
TA: None

c. **Section 003:**

Class Instructor: [Alan B. Johnston](#)
Office Hours: , or by appt.
TA: None

d. **Section 004:**

Class Instructor: [Moeness G. Amin](#)
Office Hours: Tolentine 119 Thursdays 9 - 12 noon, or by appt.
TA: None

e. **Section 005:**

Class Instructor: [Robert H. Caverly](#)
Office Hours: Via Zoom Monday noon-120pm (<https://villanova.zoom.us/j/95044526746>),
or by appt.
TA: None

f. **Section 006:**

Class Instructor: [Meltem Izzetoglu](#)
Office Hours: , or by appt.
TA: None

g. **Section 007:**

Class Instructor: [Sarvesh S. Kulkarni](#)
Office Hours: , or by appt.
TA: None

h. **Section 008:**

Class Instructor: [Xun Jiao](#)
Office Hours: , or by appt.
TA: None

i. **Section 009:**

Class Instructor: [George R. Simmons](#)
Office Hours: , or by appt.
TA: None

j. **Section 010:**

Class Instructor: [Hasshi L. Sudler](#)

Office Hours: , or by appt.

TA: None

4 Textbook

This course does not have a prescribed textbook

a. **Other Supplemental Materials:**

5 Specific Course Information

a. **Catalog Description**

Completion of the design project presented in ECE 3970. Requirements: written and oral progress reports, demonstration of achieved objectives, formal written final report, oral presentation. Design groups meet weekly with their instructors. Senior standing.

b. **Prerequisites:** ECE 3970 or ECE 5900; **Co-requisites:** None

c. Required for BS CPE

6 Course-specific Goals

a. The aim of this course is to allow completion of the Senior Design Project technical work that was planned and initiated in ECE 3970/1 (Design Seminar). The work will be documented and presented in ECE 4972/3 (Design Project Report) next semester, i.e. in the Spring. (Except for a few students who are doing the report concurrently this Fall: You need to meet with your advisor to set up a schedule). See the Program Outcomes below for a list of ABET Outcomes, many of which are intended outcomes of this course.

b.

ABET Student Outcomes						
1	2	3	4	5	6	7
X	X	X	X	X	X	X

The above student outcomes are defined by the Accreditation Board for Engineering and Technology (ABET) as:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. 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

6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

7 List of Covered Topics

1. Technical design work
2. Project management
3. Presentations
4. Report writing

8 Tentative Schedule

Tentative schedules for all sections follow. Be sure to refer to the schedule for your specific section, if more than one is provided.

Tentative Schedule for **All Sections**

Date	Topics
8/27	Class meeting Kick-Off @ 3:00 PM, Syllabus Review
9/2	Weekly work session times agreed with team members and advisor (incl. Thurs. pm slot) Upload a note on Blackboard with the days, times and locations.
9/9	Progress Report 1. Detailed schedule with tasks that are assigned to individual team member 'champions' and measurable milestones – attach to uploaded progress report.
9/16	Progress Report 2. Detailed specifications of final deliverable – attach to uploaded progress report.
9/23	Progress Report 3. Professional block diagram of system design and associated team member 'champion' – attach to uploaded progress report.
9/30	Progress Report 4.
10/7	Mid-term project technical progress demonstration – signup for appointment
10/21	Progress Report 5.
10/28	Progress Report 6.
11/4	Progress Report 7.
11/11	Progress Report 8. Class meeting Plans for final technical demonstration; Preview of Spring course; CATS reminder
11/18	Progress Report 9.
12/2	Final project technical demonstration – signup for appointment
12/9	Technical Executive Summary and Individual Reflections + beans distribution – upload to Blackboard and email to Advisor

9 Grading Policy

Your grade is determined by:

- 10% Coordinators, 0% Advisor - Project Management: Progress reports, attachments. Various
- 10% Coordinators, 10% Advisor - Mid-term Technical Demonstration - October 7
- 20% Coordinators, 20% Advisor - End of term Technical Demonstration - December 2
- 10% Coordinators, 10% Advisor - Technical Executive Summary - December 9
- 10% Coordinators, 0% Advisor - Individual Team-member Contribution - December 9

Project Management related deliverables will be graded on a 'Limited/Satisfactory/Mastered' (LSM) scale, and the results aggregated into a final grade.

The Technical demonstrations, and Executive Summary Report will be graded by at least two faculty members, generally the project Advisor and the course Coordinator.

Individual team-member contribution will be assessed by the course Coordinator based on personal observation, feedback from advisors and other faculty/industrial experts, and the end-of-semester

individual team-member reflections.

The course Coordinator, and Advisors will meet to discuss and moderate grades to ensure consistency and fairness across the class as a whole.

Letter grade scale: A(93–100), A–(90–92), B+(87–89), B(83–86), B–(80–82), C+(77–79), C(73–76), C–(70–72), D+(67–69), D(63–66), D–(60–62), F(<60)

10 HW Assignment and Laboratory Report Submission Policy

Project Advisors, the course Coordinator, and other faculty/advisors are here to help - but this is your team's project!

Please include the Course number, brief Project Title, and brief Description in the subject line of all emails, or in the title of all project reports or other documentation, e.g. "ECE 4970: Boeing Quadcopter: Parts List" - rather than just "Parts"

Submit editable Word documents – rather than pdf files.

11 Attendance Policy

This course meets just a few times as the whole group (see the schedule), most times are spent as teams with team advisors. Attendance at technical demonstrations and advisor meetings is mandatory.

Team meetings / work session times will occur weekly during the scheduled class time and must be attended by all members of the team. The teams will notify the team advisor and project coordinator of the location of the meetings which should occur in Tolentine, CEER or online unless approved by the advisor. Advisors and coordinator may attend any or all team meetings at their discretion.

Permission for an excused absence from a required session of the course or a team meeting will be granted only for the most serious personal emergency. An unexcused absence may be subject to one of the following penalties to the final grade:

2 percentage points per unexcused absence from a required session of the course, and 20 percentage points for an unexcused absence from the Final Team Oral Presentation.

These penalties will be deducted from the final grade as determined by the other course requirements.

Whenever possible, students should inform the instructor if they plan to be late or absent from class. In all cases, documentation is required to petition for *excused* absences to the Associate Dean for Student and Strategic Programs, Dr. Stephen Jones. The excused absence form is posted at: <https://www1.villanova.edu/villanova/engineering/resources/undergraduates.html>.

Excused absences do not count towards a failure in the course for first year students. Absence from class does not release the student from assigned work. Students who miss an in-class obligation such as an exam, a presentation, etc., due to an excused absence will not be penalized - the instructor may offer a make-up test, arrange an alternative time for a presentation, exempt a student from the assignment, or provide another arrangement. In the case of illness or injury, the form must

be submitted within 24 hours of missing a class. The University's list of excused absences for all students includes the following:

1. Participation in NCAA athletic competitions
2. Participation in special academic events such as: conferences, field trips, project competitions, etc., and in official university business such as student representatives attending meetings related to university governance
3. Attendance at significant events of the immediate family such as: funerals, weddings, etc.
4. Religious holidays - see the University's policy on Religious Holidays
5. College-approved participation in placement activities such as: job interviews, graduate school interviews, job fairs
6. Legally required absence such as: jury duty, court appearance, short-term military service
7. Documented serious illness or disability

12 Examination Policy

The College of Engineering has adopted the following general examination guidelines:

1. Students must arrive before the start of the examination. Under exceptional circumstances a student may need to arrive late, but he/she can enter the examination room no later than five (5) minutes after the start of the exam.
2. Cell phones must be turned off until the student exits the examination room.
3. The official Villanova class attendance policy must be followed when requesting excuses for absences or lateness to an examination.
4. Each student must write and sign the following statement, "I have neither given nor received any unauthorized assistance in the completion of this examination."
5. For online examinations, the instructor may implement video proctoring or other measures to ensure academic integrity. For consent purposes, the instructor will inform students in advance if (s)he plans to use any form of video-proctoring and whether the examination will be recorded.

13 Academic Integrity Policy

The College of Engineering is committed to creating an environment of academic integrity and ethical decision-making that we hope is reflected in the actions of our students and graduates. As Villanova students, integrity is central to the University mission. As engineers, our code of conduct requires us to place honor and integrity at the forefront of everything we do. As engineering students, it is expected that you will begin to adopt these values and instill them into your work habits. Students violating the academic integrity policy will receive a zero on that assignment or exam and the violation will be reported to the Associate Dean for Academic Affairs. The University's academic integrity policy can be found on the following web page:

<https://www1.villanova.edu/villanova/provost/resources/student/policies/integrity.html>.

14 Adherence to the Student Code of Conduct

Students are expected to act in a professional and respectful manner to their fellow students, faculty, and staff. Students should become acquainted with and understand the responsibilities set

forth in the Student Handbook, especially those in the sections on Policy and Regulations. Adherence to university regulations is expected and required for successful completion of the program of studies. Enforcement within the classroom of policies regarding classroom behavior is the responsibility of the faculty member. All other discipline problems are to be referred to the Dean of Students.

15 Online Expectations

To foster a professional environment, please wear appropriate clothes, mute if you are not talking to cut down on background noise, refrain from eating, and select an appropriate setting when we are meeting online.

16 Inclusive Classroom

This classroom is a place where you will be treated with respect; we welcome individuals of all ages, backgrounds, beliefs, ethnicities, gender, gender identities and expressions, sexual orientation, and other visible and non-visible differences. All members of this class are expected to contribute to a respectful, welcoming, and inclusive environment to allow all among us to learn and flourish.

17 Students with Disabilities

It is the policy of the university to make reasonable academic accommodations for qualified individuals with disabilities. If you are a person with a disability (non-physical) please register with the office of Learning Support Services (LSS) by emailing Learning.support.services@villanova.edu or by phoning 610-519-5176 as soon as possible. Registration is *required* in order to receive accommodations.

The Office of Disability Services (ODS) collaborates with students, faculty, staff, and community members to create diverse learning environments that are usable, equitable, inclusive and sustainable. The ODS provides Villanova University students with physical disabilities the necessary support to successfully complete their education and participate in activities available to all students. If you have a diagnosed disability and plan to utilize academic accommodations, please contact and register with Gregory Hannah, advisor to students with disabilities at 610-519-3209 or visit the office on the second floor of the Connelly Center.

18 Tutoring Services

Villanova's tutoring services include The Writing Center, The Learner's Studio, and The Center for Speaking and Presentation. These services are offered free of charge to students. Drop in as-needed or book a regular weekly session to supercharge your academic success. Sessions can be 30 or 60 minutes in length.

Register for an account and book sessions in advance at villanova.mywconline.com. If you don't see your class listed, request a tutor for a missing subject at: tutorrequest.villanova.edu For more information, contact Juliana Struder at juliana.studer@villanova.edu or at 610-519-5862.

19 Electronics Policy

The use of electronic devices, such as phones, laptops, tablets, calculators, etc., during class is generally allowed, unless their use causes a disturbance to others. During examinations, the use of any electronic device is prohibited, unless it is expressly authorized by the instructor.

Students are prohibited from making any audio or visual recordings (including taking photographs) of lectures, discussions, or other classroom activities, unless a student (1) has written permission in advance from the instructor, or (2) is permitted to record under terms and conditions as approved by the University's Office of Disability Services or Learning Support Services. Students who have received approval to record classes as an academic accommodation must provide supporting documentation from the Office of Disability Services or Learning Support Services in advance of any recording. Students may use authorized recordings only for the purposes of individual study in the course, and may not disseminate or share them with a wider audience without explicit permission.

20 Copyright Policy

The materials used in Villanova University courses ("Course Materials") generally represent the intellectual property of course instructors, third parties and/or the university which may not be disseminated or reproduced in any form for public distribution (e.g., sale, exchange, etc.) without the written permission of the course instructor. Course materials include all written or electronic documents and materials, including syllabi, current and past examination questions/answers, and presentations such as lectures, videos, slides, etc., provided by a course instructor. Course materials may only be used by students enrolled in the course for academic (course-related) purposes.

Published course readings (book chapters, articles, reports, etc.) available in "Blackboard" are copyrighted materials. These works are made available to students through licensed databases or fair use. They are protected by copyright law, and may not be further disseminated or reproduced in any form for distribution (e.g. uploading to websites, sale, exchange, etc.) without the permission of the copyright owner.

Follow these links for more information on [Intellectual Property](#), [Copyright](#), and [Computer Acceptable Use](#).

21 Professorial Duties

It is important to note that teaching is one of the many duties that professors perform as part of their job responsibilities. In addition to teaching, professors perform research, advise graduate students, edit journals and review journal articles, serve on committees for the university and professional societies, travel to conferences to remain abreast of current developments and to present their results... to name just a few commitments.