

ECE 4970/71: Design Project

Class Meetings

All Sections 4970, 4971: Thursday, 2:40-5:10PM, Online

Meets just a few times as the whole group, most times are spent as teams with team advisors

Coordinator

Name: Dr. Pritpal Singh

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Advisors

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Name: Dr. Meltem Izzetoglu

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Name: Dr. Xun Jiao

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Name: Dr. Alan Johnston

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Name: Dr. Mark Jupina

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Name: Mr. George Simmons

Office Location: CEER Rm 105

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Name: Dr. Tom Way

Office Location: Mendel Science Center Rm 160A

Phone number: (610) 519-5033

Email: thomas.way@villanova.edu

Office Hours

Dr. Singh: Monday, 3:30-5:00 PM

Dr. Amin: Monday and Wednesday, 11am- 1pm; other times by appointment

Dr. Izzetoglu: Thursday 11:30 a.m.-1:30 p.m. and Friday, 3:00-4:00 pm

Dr. Jiao: Monday and Wednesday, 10:30 a.m.-12:00 noon

Dr. Johnston: By appointment

Dr. Jupina: Monday and Wednesday, 12:30 to 3:00 pm

Mr. Simmons: By appointment

Dr. Way Tuesday 10:00-11:00 a.m.; Thursday 2:00-3:00 p.m.

Course Objectives

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.

General

- 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.

Grading Policy

Grades will be assigned according to the following table and associated notes:

Fall ECE 4970/1	Coordinators	Advisor	Deadline
Project Management: Progress reports + attachments ¹ (Schedule+milestones, specifications, block diagram)	10% (LSM)	-	See schedule
Mid-term Technical Demonstration ²	10%	10%	October 1
End of term Technical Demonstration ²	20%	20%	November 12
Technical Executive Summary ²	10%	10%	November 19
Individual Team-member Contribution ³	10%	-	November 19

1. Project Management related deliverables will be graded on a 'Limited/Satisfactory/Mastered'(LSM) scale, and the results aggregated into a final grade.
2. The Technical demonstrations, and Executive Summary Report will be graded by at

least two faculty members, generally the project Advisor and the course Coordinator.

3. 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.

The scale used to assign letter grades is:

Letter Grade	Numerical Grade	Letter Grade	Numerical Grade
A	94 to 100	C	73 to 76
A-	90 to 93	C-	70 to 72
B+	87 to 89	D+	67 to 69
B	83 to 86	D	63 to 66
B-	80 to 82	D-	60 to 62
C+	77 to 79	F	Less than 60

Inclusive Classroom

We consider this classroom to be a place where you will be treated with respect; and, 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 for every other member of the class.

Attendance

Attendance at scheduled lectures is mandatory and will affect the final grade. Attendance will be taken within a few minutes from the start of class and students must check-in with the instructor if they arrive after this occurs.

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.

Where possible, students should inform the instructor if they plan to be late or absent from class. In all cases, students should be prepared to provide documentation to petition for *excused* absences to the Associate Dean for Student and Strategic Programs, Dr. Stephen Jones. Students should use the [form for requesting an excused absence](#). If a student is taking the class online, they should inform the course coordinator about any accommodations that need to be made. Excused absences do not count toward a failure in the course for first year students. Absence from class does not release the student from work assigned. Students who miss an in-class obligation (exam, 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.

The University's list of excused absences for all students includes the following:

- participation in NCAA athletic competitions
- participation in special academic events (e.g., conferences, field trips, project competitions)
- participation in official university business (e.g., student representatives attending meetings related to university governance)
- attendance at significant events involving the immediate family (e.g., funerals, weddings)
- religious holidays - see the University's policy on Religious Holidays
- college-approved participation in placement activities (e.g., job interviews, graduate school interviews, attending job fairs)
- documented serious illness or disability (see below how to document)

Course Materials

There are no required course materials other than those presented in class and these will be provided as resources on the Blackboard site for the course.

Academic Integrity

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 here: [University's academic integrity policy](#).

The College of Engineering has adopted the following exam guidelines:

- Students must arrive before the start of the exam. Under exceptional circumstances a student may need to arrive late, but he/she can enter the exam no later than 5 minutes after the start of the exam.
- All cell phones must be turned off and stored away until the student exits the exam room.
- The official Villanova class attendance policy must be followed when requesting excuses for absences or lateness to an exam.
- Each student must write and sign the following statement, *"I have neither given nor received any unauthorized assistance in the completion of this exam."*

Adherence to the Student Code of Conduct and the CARITAS

Commitment

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.

Students, faculty, and staff are expected to comply with the [CARITAS Commitment](#). Students must wear masks (unless they have a medical exemption), practice social distancing and good hygiene, wipe down their work area upon arrival and departure, and request an excused absence if they are not feeling well.

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.

Students with Disabilities

It is the policy of Villanova to make reasonable academic accommodations for qualified individuals with disabilities. If you are a person with a disability please contact me after class or during office hours to make arrangements.

If you have a non-physical disability you need to register with the Learning Support Office by contacting 610-519-5176 or at learning.support.services@villanova.edu as soon as possible. Registration is needed to receive accommodations.

The Office of Disability Services 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 @ 610-519-3209 or visit the office on the second floor of the Connelly Center.

Schedule

The following calendar of the course is somewhat tentative.

The course coordinators reserve the right to change the schedule and course activities on the calendar during the semester. Although general meetings are not scheduled every week, **you are required to keep the time slot of the course (Thursday from 2:40 PM to 5:10 PM)** available throughout the semester for project activities, project meetings, and possible general meetings of the course. Failure to comply with this policy is subject to the Attendance penalty.

DATES ARE SUBJECT TO CHANGE

August 20:	Class meeting Zoom Kick-Off @ 2:40PM, Syllabus Review
August 27:	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.
September 3:	Progress Report 1. Detailed schedule with tasks that are assigned to individual team member 'champions' and measurable milestones – attach to uploaded progress report.
September 10:	Progress Report 2. Detailed specifications of final deliverable – attach to uploaded progress report.
September 17:	Progress Report 3. Professional block diagram of system design and associated team member 'champion' – attach to uploaded progress report.
September 24:	Progress Report 4.
October 1:	Mid-term project technical progress demonstration – signup for appointment
October 15:	Progress Report 5.
October 22:	Progress Report 6.
October 29:	Progress Report 7.
November 5:	Progress Report 8. Class meeting Zoom Plans for final technical demonstration; Preview of Spring course; CATS reminder
November 12:	Progress Report 9.
November 19:	Final project technical demonstration – signup for appointment
November 23 (Note: This is a Monday, the final day of classes)	Technical Executive Summary and Individual Reflections + beans distribution – upload to Blackboard and email to Advisor

Activities and Deliverables

Course activities (see attached schedule and deadlines) include:

- **Two General Meetings** for organization and logistics
 - Additional meetings if notified by email.
- **Weekly project work sessions**
 - At least 9 hrs / week total, of which 2.5 hrs / week are scheduled Thursdays 2:40 – 5.10 pm in Tolentine or CEER.
 - Agree *regular* meeting location with team members and advisor + Note time and attendance on all Progress Reports
- **9 Progress Reports – see schedule.**
 - A running document with snapshots uploaded to Blackboard and emailed to the Advisor(s) by scheduled deadlines.
 - Individual sections written by each team member – see template
 - Some Progress Reports require additional content as specified in the schedule, e.g. meeting locations, schedule of tasks, specifications, block diagrams, etc.
- **Technical Demonstrations** to Advisor(s) + Course coordinator (video recorded)
 - Before Mid-term, and at End of term (this one effectively your final exam). Signup for appointments.
 - All technical work should finish by End of term. [Spring is for write-up only + one further presentation].
- **Technical Executive Summary** (end of semester) including...
 - Abstract / Overview
 - Updated system Specifications, and Block Diagram, with a brief technical description of system operation.
 - A brief, almost list-like summary of your achievements, including unambiguous statements of what actually worked, and what did not.
- **Individual Reflections on the Team and Team-member Contributions** (end of semester)
 - End of term confidential Team Reflections: Each team-member writes a brief summary of how (s)he feels the team functioned as a whole and distributes 100 beans among the team members according to their perceived contribution.
- **Advisor-specific requirements / deliverables**
 - Check with your advisor and document any additional advisor-specific requirements in your first Progress Report

Penalties and Deadlines.

1. Failure to record your actual meeting attendance as indicated in section a) of all Progress Reports will result in a 2% penalty.
2. Unexcused absence from a required general meeting will result in a 2% point deduction from your final grade.

Authorization for an absence from a required General Meeting can only be obtained from the course coordinator in writing. Such authorization is likely to be granted only in cases of the most serious personal emergency.

ABET Outcomes

Listed below are ABET program outcomes that apply to this course.

- (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
- (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 judgement to draw conclusions.
- (7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

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, participation in conferences to remain abreast of current developments and to present their results... to name just a few.