ISYE 4800 Syllabus

Special Topics- Senior Design Preparation ISYE 4800, 0.00 Credits

Summer 2026

Instructor Information

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General Course Information

Description

ISYE 4800 Senior Design Preparation is a zero-credit, non-billable course taken in the semester immediately prior to enrollment in ISYE 4106 Senior Design. The course formalizes the preparation process for Senior Design by guiding students through team formation, client identification, non-disclosure agreement (NDA) processing (if applicable), and the development of an acceptable Senior Design pre-proposal.

Students do not have to be on campus to register for ISYE 4800; some team members may be away from campus for study abroad, Intern/coop, etc. However, every student must intellectually contribute to the development of the pre-proposal. Students who study abroad or work abroad should sign up for a ISYE 4800 section R. A video student should register for a ISYE 4800 section Q. Everybody else should register for ISYE 4800 section A.

Although no academic credit is awarded, successful completion of ISYE 4800 is a requirement for receiving permission to enroll in ISYE 4106.

Course Learning Outcomes

Upon successful completion of ISYE 4800, students will have:

1. Formed a Senior Design team of 6 to 8 members consistent with ISYE guidelines
2. Identified a suitable client and project topic
3. Completed all required administrative documentation
4. Navigated NDA and data stewardship requirements where applicable
5. Developed a Senior Design preliminary proposal that meets ISYE standards and receives approval

Required Course Materials

No textbook is assigned; we will use a series of readings and past Senior Design samples. Canvas and MS Teams are the mandatory communication tools in this class. All class-related materials are posted there. Students are responsible for all announcements and changes in the schedule that are made in class, posted on MS Teams, Canvas or sent via email.

Grading Policy:

ISYE 4800 is graded as an audit class. While there is a grade of F is not recorded on the transcript if a student does not satisfy the course requirements, a student that does not satisfy the requirements will be notified by the examiner(s) and will need to retake ISYE 4800 in a subsequent semester preceding the intended ISYE 4106 Senior Design semester.

A student can be granted permit to ISYE 4106 when:

- The student team's pre-proposal is approved by the examiner(s), and
- The student's contribution is deemed acceptable

A student is not granted a permit to ISYE 4106 if:

- The student fails to earn a passing grade in the prerequisite courses for ISYE 4106,
- The team's pre-proposal is not approved by the examiner(s),
- Required deliverables are missing, or
- The student's individual contribution or professionalism is inadequate.

Important: Lack of professionalism in ISYE 4800 may result in individual grade consequences during ISYE 4106, independent of team performance.

Course Structure and Enrollment Timing

ISYE 4800 does not follow a traditional lecture or weekly meeting format. Instead, it is a milestone-driven, preparation course.

Enrollment Timing

- Students planning to enroll in ISYE 4106 Spring must complete ISYE 4800 in the preceding Fall.
- Students planning to enroll in ISYE 4106 Fall must complete ISYE 4800 in the preceding Summer.
- Students who do not receive a permit for Senior Design—due to unmet prerequisites, lack of an approved pre-proposal, or insufficient contribution—must retake ISYE 4800.

- Students who fail ISYE 4106 must retake both ISYE 4800 and ISYE 4106.

Required Activities and Deliverables

Students are responsible for completing all required components, which include:

- Team Composition Form
- Client Notification Form
- NDA routing and related documentation (if applicable)
- FERPA consent form
- Initial pre-proposal and revisions (if required)
- Peer evaluations

Description of Required Activities

Team Composition:

Each team consists of 6 to 8 members, and each team must select a team liaison.

Considerations in finding team members can include:

1. Professionalism. Your team should be composed of people you can work with and trust, who would not seek shortcuts under pressure.
2. Work ethic. Senior design is demanding. Most people have done projects in various classes or in other settings, but the senior design standard is higher because it culminates the knowledge of a team of seniors from their entire college education into one semester and services a real client.
3. Similar academic goals. Students have to prioritize between studying for a test or improving the result of this group project; between going to a friend's wedding and debugging simulation code; between attending fraternity activities and revising the reports. To some, the team result in senior design is above personal goals. To others, it is different.
4. Diverse skill set. Rarely is any single student good at everything: statistics, forecasting, human resource management, optimization, simulation, programming, supply chain, manufacturing, layout, health systems, writing, editing, and presenting. Seek out teammates with skills that differ from your own.
5. Similar class schedule. The team formation starts after the beginning of Phase I registration. Teams have two schedule options, and all team members must register for the same section. This non-traditional schedule is designed to balance between two sections.
    - MWF 12:30pm – 3:15pm, W 6:30pm – 9:15pm
    - TR 12:30pm – 3:15pm, WR 6:30pm – 9:15pm

Students form teams on their own. Under extenuating circumstances and with coordination with the Senior Design examiner(s), the ISyE Associate Chair for Academic Administration or the Associate Chair for Undergraduate Studies might change the make-up of a team by adding or removing members.

Specific instructions, templates, and submission procedures are provided in the ISYE 4106 Senior Design Manual, which will be provided to ISYE 4800 students on Canvas.

Client Notification:

Each team submits a memo, listing information about the client and their problems, or the multiple project ideas and motivation/opportunity.

Non-Disclosure Agreements and Data Stewardship:

Projects involving proprietary or sensitive information must comply with Georgia Tech NDA and data stewardship requirements. Students are responsible for:

- Initiating NDA processes promptly when required
- Using approved Georgia Tech platforms for file storage
- Protecting client data at all times

Detailed guidance is provided in the ISYE 4106 Senior Design Manual.

FERPA consent form:

All team members need to fill out this form whether they consent or not.

Preparing Pre-proposal and Project Requirements:

Each team must submit a pre-proposal to pass ISYE 4800. Teams are frequently asked to make revisions. When revisions are requested, teams are expected to address them and resubmit the pre-proposal accordingly.

When you develop your pre-proposal, you must consider the following four requirements for an acceptable ISYE 4106 Senior Design project:

1. *Engineering Design*. The project must involve a recommendation for change(s) to an existing system or the development of a new system and an economic analysis of the associated costs and benefits. A project may include the analysis and presentation of data, cycle time analysis, simulation, optimization, determining standards, documenting process flow, etc., but these elements themselves do not constitute an excellent engineering design project.
2. *Methodology*. The project must require the use of substantial industrial and systems engineering tools and methods learned in the curriculum. A project might be quite

valuable for a company, but if it does not involve significant ideas and/or methods from ISyE courses, it will not be acceptable for ISyE 4106. You must work on a project that naturally requires IE methodology for analysis and design recommendations. The methodologies can include probability, statistical analysis, regression, queuing models, optimization, engineering economy, quality, regression, flow line dynamics, transportation, warehousing, inventory control, supply chain, capital investment, analytics, etc. In other words, the project must require the use of methods and tools taught in the ISyE curriculum.

3. *Magnitude*. Each team member is expected to spend a minimum of 12 *productive* hours per week on the project for a total of 180 hours for the semester, which equates to a minimum of 1080 hours for a six-member team. The project's scope must be consistent with this expectation.
4. *Value*. The value of the project to the client must be commensurate with the amount of time spent. If the main result of the project is cost savings, the amount of the saving should be commensurate to 12 hours/person/week or over 1080 hours for 15 weeks and a 6-member team.

You should carefully assess your prospective client during the early stages of interaction—namely, during pre-proposal preparation, particularly with respect to information and data availability, as well as expected response times.

The client's location can also be an important consideration. If the nature of the operations of interest is well represented in the available data, on-site visits may not be critical. However, some projects require a significant number of on-site visits for system understanding and data collection. In such cases, distance becomes a major setup cost.

More details and additional considerations are provided in the ISYE 4106 Senior Design Manual.

Peer Evaluations:

Peer evaluations are a mandatory component of ISYE 4800 and the subsequent Senior Design course.

- Evaluations are completed using an online system.
- Missed peer evaluations result in automatic penalties.
- Students are expected to provide candid, well-justified assessments of contribution.

Peer evaluations in ISYE 4800 establish expectations that continue through ISYE 4106.

Course Policies

Attendance and/or Participation

There is a mandatory 60-minute ISYE 4800 information session that outlines the details of the course. The date, time, and location of this session will be announced. All students are expected to attend.

If a workshop is offered to the ISYE 4800 cohort, attendance is also mandatory.

The instructors of this course, referred to as the Senior Design examiners will work with each team to develop and refine the pre-proposal. The examiners will provide feedback and meet with teams as needed. Teams are expected to be responsive and to meet with the examiners as requested.

Active participation in teamwork and meaningful contribution are required to pass the course. Failure to do so may result in grade deduction in ISYE 4106.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review Georgia Tech's Honor Code and the student Code of Conduct.

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Core IMPACTS

Core IMPACTS is the University System of Georgia's General Education curriculum. If you are teaching a course that counts towards Core IMPACTS, you should include a syllabus statement about the Core area and associated career competencies. This resource developed by the Center for Excellence in Teaching and Learning and Online Education at Georgia State University includes template syllabus statements for each of the Core IMPACTS areas that you may adapt for your course.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of us and that we have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, we encourage you to remain committed to the ideals of Georgia Tech while in this class.

Pre- &/or Co-Requisites

ISYE 4800 is a prerequisite for ISYE 4106 (Senior Design). By the semester in which a student plans to enroll in ISYE 4106, all prerequisite courses must be completed. These prerequisites include ISYE 3025, ISYE 3133, ISYE 3232, ISYE 3044, ISYE 4031, three concentration electives, and successful completion of ISYE 4800.

Collaboration, Group Work, and Use of Generative AI

Professional Conduct:

ISYE 4800 is part of the Senior Design sequence and requires professional conduct at all times. This includes:

- Timely and respectful communication
- Reliability in meeting commitments
- Ethical behavior with teammates, faculty, and clients
- Responsible handling of data and confidential information

Unprofessional conduct may be documented and shared with Senior Design instructional staff.

Use of Generative AI:

To use generative AI tools in ISYE 4800 and ISYE 4106, you must meet all of the following requirements:

1. Obtain written permission from your client.
2. Use only Georgia Tech's Copilot or an approved GenAI tool by GT OIT in the future.
3. Provide a disclaimer documenting all interactions with generative AI tools.
4. Comply with Georgia Tech policies. Failure to comply with these policies will be considered a violation of the Georgia Tech Honor Code.

Georgia Tech guidelines on the use of generative AI can be found here: https://gatech.service-now.com/home?id=kb_article_view&sysparm_article=KB0043472

Additional information regarding collaboration, group work, and the use of generative AI can be found in the ISYE 4106 Senior Design Manual.

Extensions, Late Assignments, & Re-Scheduled/Missed Exams

Late submissions are not allowed unless there are extenuating circumstances.

Campus Resources for Students

Undergraduate Student Academic Success Resources:

Academic Support: Academic Success and Advising (a unit in the Office of Undergraduate Education & Student Success) provides free support for your courses. Students can attend scheduled supplemental review (PLUS) sessions, stop by Drop-In Tutoring, or schedule a one-on-one appointment through Knack. To explore what options work best for you, please visit us online at success.gatech.edu/tutoring, email us at tutoring@gatech.edu, or come see us at Clough Undergraduate Learning Commons, Suite 283.

Student Well-Being:

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A comprehensive list of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being (student-resource-guide (gatech.edu)