GEORGIA INSTITUTE OF TECHNOLOGY
G. W. Woodruff School of Mechanical Engineering

ME 1670 – Engineering Graphics and Visualization

Instructor: Dr. Raghu Pucha
Office: GTMI 451
Email: raghuram.pucha@me.gatech.edu
Office Hours: See course homepage in Canvas

Semester: Fall 2026
Academic Year: 2025–2026

Course Description

Engineering graphics is a fundamental means of communication in engineering practice. This course introduces visualization, freehand sketching, computer-aided design (CAD), and engineering drawing standards. Students learn to communicate ideas, designs, and manufacturing procedures through graphical representations and three-dimensional models while working collaboratively in teams.

Concepts and Processes

- Ideas, designs, and manufacturing procedures are communicated through words, numbers, and visual images.
- Freehand sketches and CAD tools are used to model and describe three-dimensional objects.
- Engineering tasks are performed collaboratively in teams.

Course Objectives / Learning Outcomes

Upon successful completion of this course, students will be able to:

- Develop creative design ideas
- Visualizing objects and engineering concepts
- Sketch pictorials and multiple views of objects
- Write technical descriptions and explanations of designs and models

- Understand design-for-manufacturing and design-for-assembly principles
- Create 3D CAD models, assemblies, and 3D prints
- Use and understand engineering drawing terminology and interpret technical drawings
- Participate constructively in team-based engineering activities
- Implement project management methodologies

Course Web Page

All course materials, announcements, assignments, and grades will be managed through Canvas: **https://canvas.gatech.edu**

Textbooks

Recommendation:

- *Visualization, Modeling and Graphics for Engineering Design*, Lieu and Sorby, 2009, Delmar Cengage Learning, ISBN: 1111056935
- *Rapid Visualization*, Hanks and Belliston, 2006, ISBN: 159863268X

Required Materials

Required Supplies:

- Soft lead pencils
- Pencil sharpener
- Engineer's pad (0.2-inch grid)
- Eraser
- Ruler with English and metric units

Recommendation:

- Access to a 3D printer for the individual **SOLO** project

Grading Policy and Weighting

Final grades are determined using the following weighted components:

- **3D Print Individual Project (SOLO – creative product):** 30%
- **Lab / Class Participation / Quizzes / Assignments:** 40%
    - Sketching labs: 15%
    - CAD labs: 25%
- **Team Project (Large Engineering Structures):** 30%

Note: Canvas grades are not weighted. Students are responsible for calculating their final course grade using the percentages above.

Grading Scale

- 90–100: **A**
- 80–89: **B**
- 70–79: **C**
- 60–69: **D**
- 0–59: **F**

Attendance Policy

- Attendance is required for all lectures and laboratories; roll will be taken in both.
- Lab and project activities are based on lecture content. Missing lectures may negatively impact individual performance and team outcomes.

Notes on Late or Missing Work

- All lecture and lab activities must be submitted to Canvas within **48 hours** after each lab.
- Late work will not be accepted, and no make-up work will be offered without a documented excuse from the Office of the Vice President and Dean of Students.
- For documented excuses, a new due date must be negotiated with the instructor immediately.

Additional Criteria for Successful Completion

To successfully complete ME 1670, students must:

- Submit all required work through Canvas by posted deadlines
- Complete all individual and team-based projects
- Participate actively in lectures, labs, and team activities

---

Course Withdrawal Policy

Due to high demand for this required course, students may not drop or withdraw without following the proper Georgia Tech process. Students should consult their academic advisor prior to withdrawing.

Final Exam Schedule

The final exam period for **team project presentations** is based on each section's scheduled lecture time.
Refer to the Georgia Tech Registrar's exam schedule:
http://www.registrar.gatech.edu/current-students/exams

Midterm Evaluation

In accordance with Georgia Tech policy for 1000- and 2000-level courses, midterm grades of **Satisfactory (S)** or **Unsatisfactory (U)** will be submitted to the Registrar.

Academic Honesty / Academic Integrity

Students are expected to complete their own work on all assignments, quizzes, and exams unless explicitly authorized by the instructor.

The **Georgia Tech Academic Honor Code** applies to this course:
http://www.policylibrary.gatech.edu/student-affairs/academic-honor-code

Students must not allow others to copy any portion of their notebooks, exams, quizzes, sketches, or computer files created for this course, either during the semester or in future terms.

Office Hours and Email Communication

- Students are encouraged to attend instructor and TA office hours.
- Technical questions sent by email will not receive individual responses and will be addressed during lectures or labs.
- Email submissions of assignments are not accepted and will not be graded.

Grade Change Policy

- All work must be submitted through Canvas; email submissions are not graded.
- Missed deadlines should be discussed with the instructor or TA during office hours.
- Grade changes may only be requested during the semester and during office hours.
- After the semester ends, grades will only be changed if there is an error in entering final grades.
- Students are responsible for checking grades regularly and reporting discrepancies promptly.

Software and Training Resources

SolidWorks Training

- Students are required to complete LinkedIn Learning modules.
- Access via **https://linkedinlearning.gatech.edu** using Georgia Tech authentication.
- Search for *SolidWorks Essential Training*. Modules may be viewed multiple times.

SolidWorks Software Access

- Log in to **mycloud.gatech.edu** and select **COE-1670-Class**.
- Students may download SolidWorks to personal computers via: **http://software.oit.gatech.edu**

Accommodation for Students with Disabilities

Georgia Tech is committed to providing reasonable accommodations for students with documented disabilities. Students requiring accommodation should contact the **Office of Disability Services (ODS)** and notify the instructor as early as possible.

ODS Contact Information:
Email: dsinfo@gatech.edu
Website: http://disabilityservices.gatech.edu
Phone: 404-894-2563 (voice) / 404-894-1664 (TDD)

Georgia Tech Student Resources

Additional student resources—including mental health and well-being, academic support, diversity and inclusion services, financial assistance, and professional enrichment—are available through the Canvas course site.

This syllabus reflects the official ME 1670 course outline and satisfies University System of Georgia and Georgia Tech syllabus requirements. The instructor reserves the right to make reasonable changes, which will be communicated via Canvas.