

# ME 1770 COURSE OUTLINE

## Engineering Graphics and Visualization

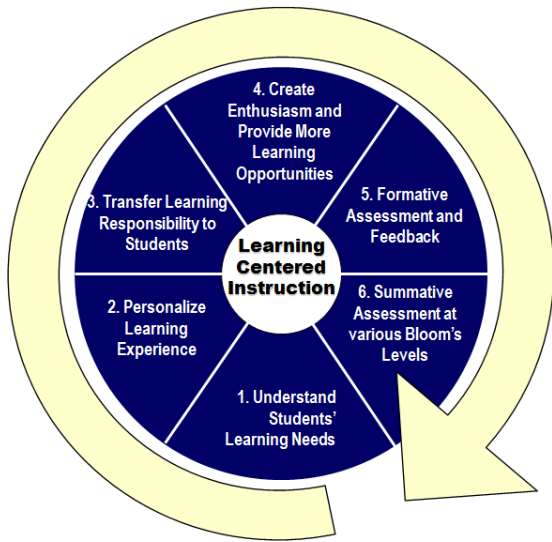
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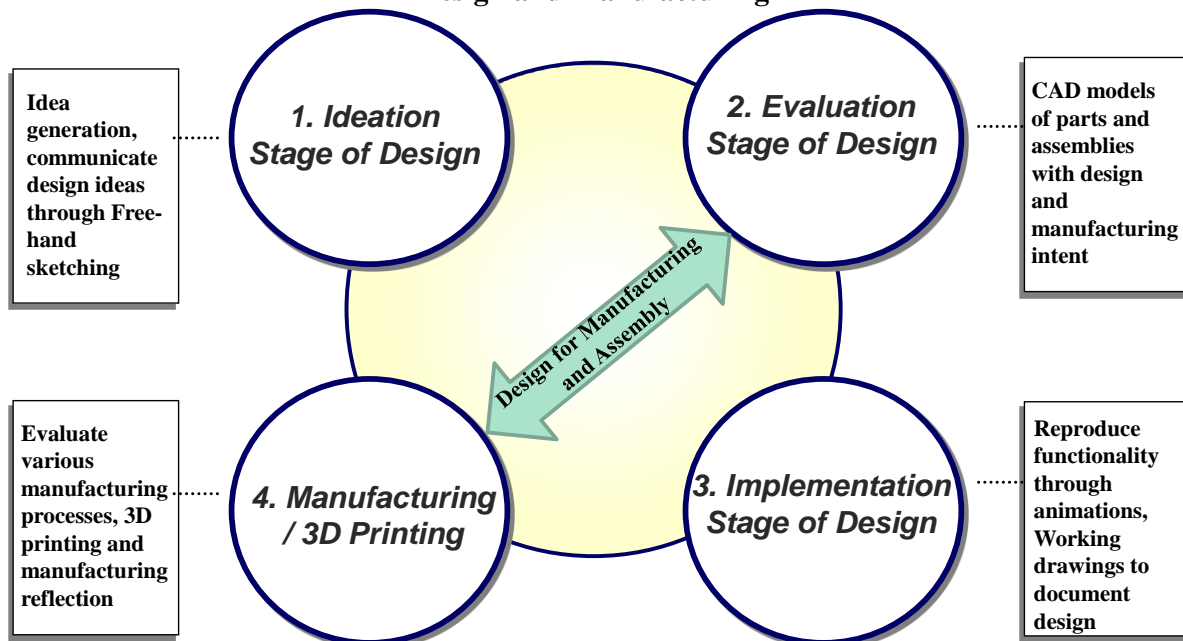
Walk-in Office Hours: Monday and Wednesday 10.05 – 10.55 AM

### Teaching Philosophy



- Understand and respect student learning needs
- Personalize students' learning experiences
- Transfer learning responsibility to students
- Create more learning opportunities in understanding fundamentals
- Sufficient formative assessment and feedback before testing their knowledge
- Challenge students with summative assessment.

### Role of Graphics and Visualization in Engineering Design and Manufacturing



## **Concepts/Processes**

Ideas, designs, and manufacturing procedures and techniques are communicated by words, numbers, and visual images.

Freehand sketches and CAD are used to model and describe 3 dimensional objects.

Engineering tasks are performed by teams.

## **Objectives:**

After completing this course, students should be able to:

- visualize objects and ideas;
- use and understand engineering drawing terminology;
- interpret technical drawings;
- establish and explain methods used for decision making;
- communicate ideas in a visual medium;
- write descriptions and explanations of their designs and models;
- sketch pictorials and various views of objects;
- create 3D CAD models, Assemblies and 3D Print;
- participate constructively in a team engineering activity;
- implement project management methodologies;

**Web Page:** <http://t-square.gatech.edu> and then select the ME 1770 Tab

**Textbook:** *Recommended: Visualization, Modeling and Graphics for Engineering Design*, 2009, Lieu and Sorby, Delmar, Cengage Learning ISBN: 1111056935

*Recommended: Rapid Visualization: Hanks and Belliston*, 2006, ISBN: 159863268X

## **Required:**

- Engineers Pad (0.2" grid), Pencil (.5 or .7 mm) mechanical preferred, Eraser, Ruler - English and metrics units, Marker Paper (at least 11" x 14"), Sharpies, fine and ultra fine, Cool Grey Markers (Qty: 3-5), Black and White Prismacolor Soft Lead Pencils Pencil sharpener.

Most (not all) of the drawing materials above are available as a **course pack** from Blick Art Materials

<b><u>Grading Scale:</u></b>	90 – 100	A
	80 – 89	B
	70 – 79	C
	60 - 69	D
	0 - 59	F

**\*\*Attendance Policy:** Lab, Take-home exam and project activities are based on lecture activities. Students who miss lectures hurt their own grade as well as their project team members. **Therefore, you are required to attend all lectures and labs.**

## **Notes on late or missing work:**

Assignments are due at the beginning of the designated period unless otherwise stipulated. **No late assignments will be accepted and no makeup Exams or Quizzes will be offered** without a justified and documented excuse (such as severe illness and doctor's note). For justified and documented excuses, a new due date must be negotiated with the course instructor **immediately**.

**This course cannot be dropped:** Due to the high demand for this required course no student is allowed to drop or withdraw from this course.

**Final Exam Schedule:**

www.registrar.gatech.edu/ - tentative based upon Georgia Tech information. Your final exam period is based upon your section's lecture time.

**Midterm Evaluation:**

In accordance with Georgia Tech policy for 1000 and 2000 level courses, midterm grades (Satisfactory/Unsatisfactory) will be issued to the Registrar.

**Academic Dishonesty:**

Students are expected to do their own work on all course assignments including quizzes, exams, etc. except when otherwise assigned by the instructor. The Georgia Tech Academic Honor Code ([www.honor.gatech.edu](http://www.honor.gatech.edu)) will be used as the standard for this class.

In addition, do not allow anyone to copy any portion of your notebook, exams, quizzes, sketches or any computer files you create for this class as a part of any assignment or required project during this course or any time in the future semesters after having taken this course.

**Office hours / e-mail queries:**

Students are encouraged to utilize walk-in office hours of TAs and instructor. E-mail queries are only answered in lectures and labs.

**Grading Distribution:** Grades will be determined using the following weights:

<u>3D Printing Project (Individual)</u>	40% (see an example in the next page)
<u>LAB/Class Participation/Quiz/Assignments*</u>	30%
<u>Team Project (see video link next page)</u>	30% (see flow-chart in the next page)

\*e.g., Class and lab assignments and quizzes, reading assignment notes, lab notes, planning procedures, peer review and discussions, project notes/minutes; sketches, CAD drawings and CAD solid models.

**Grade change policy after semester:** Grades will not be changed unless there is an error in entering final grades in to the system. Any errors in LAB/Exam grades should be reported to TAs/ instructor immediately.

**Regularly check your grades in t-square and let your TA know if there are errors.**

## Creative Product Ideation, Visualization & Manufacturing (Individual Project)

