Course Number: ID 2101

**Course Title:** Digital Design Methods

**Instructor:** TBD

**Credit Value:** 3 Credits

**Course Times:**  A: T|R 12-1:30, B: T|R 1:30-3

**Location:** TBD

**Catalogue Description:**

This course introduces the basics of product design in the CAD environment. Students design a product, apply 3D scanning, produce an animation and 3D print.

## Course Goals and Learning Outcomes

Upon successful completion of the course students will be able to:

* Design a basic product in CAD
* Prepare a 3D scan file for use as a CAD underlay
* Construct a product animation
* Produce 3D printed parts

**Course Requirements & Grading**

|  |  |  |
| --- | --- | --- |
| Assignment | Date | Weight (Percentage, points, etc) |
| Solid Modeling | Week 5 | 20% |
| Scan Modeling | Week 7 | 10% |
| Sculpt Modeling | Week 11 | 25% |
| Animation | Week 14 | 15% |
| Final Project | Week 17 | 30% |
| Total |  | 100% |

**Extra Credit and Grade Dispute Policies and Procedures**

Extra credit is usually not given during the semester.

**Description of Graded Components**

Each assignment has its own description, learning objectives, rubrics and submission requirements. These are documented under the specific assignment in t-square course management software. In general, each assignment will require the original 3D CAD file, any supporting files (renderings, animation, etc) and a PDF grade sheet to be submitted either through the course folder or t-square assignment. The PDF grade sheet will include either screen grab images of the 3D CAD file or render images. Comments and feedback on the assignment will be noted on the PDF grade sheet and returned to the students using t-square. Students are expected to turn in assignments on time and with all required items/files to receive full credit. An 8-hour grace period is given to allow for last minute issues such as Internet connection problems, slow computers, etc., but will come with a 10-point deduction. Students do have the ability to use one assignment as a re-grade or late assignment to help manage workload in the course and with other courses.

**Grading Scale**

Your final grade will be assigned as a letter grade according to the following scale:

A 90-100%

B 80-89%

C 70-79%

D 60-69%

F 0-59%

**Course Materials**

**Course Text**

**No book is required for this course.**

## Additional Materials/Resources

## **Online training material will be used. A schedule will be provided that details training modules that should be completed prior to specific classes. This will help students learn the material effectively and allow for class sessions to cover advance material.**

## Course Website and Other Classroom Management Tools

The t-square course management software will be used throughout the semester as a way to communicate the syllabus, assignments, homework, grading, course resources, etc. and as a way to turn in assignment files electronically.

**Course Expectations & Guidelines**

## 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. For information on Georgia Tech's Academic Honor Code, please visit http://www.catalog.gatech.edu/policies/honor-code/ or http://www.catalog.gatech.edu/rules/18/.

Any student suspected of cheating or plagiarizing 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.

## Accommodations for Individuals with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404)385-1275 or http://disabilityservices.gatech.edu/, 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.

## Assignment Turn-In

All assignment files are to be turned in electronically through the course folder system in the College of Design. The t-square system can be used as a backup in case the course folder is not available.

## Attendance and/or Participation

Attendance will be taken at the start of each class except for the assignment workdays. Students are allowed three, unexcused absences. To make the most out of the learning experience for yourself and your fellow students, please sure to be in class on time, login and have started the software. Please refer to the Institute attendance policies here: <http://www.catalog.gatech.edu/rules/4/>, and contact me with any questions.

## Collaboration & Group Work

## All work is to be student's own work. No collaboration or group work is allowed. In addition, students are to create their own content for assignments unless otherwise noted. Students are not allowed to use content from in-class demo files unless specific permission is given.

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

## Students are expected to turn in assignments on time and with all required items/files to receive full credit. An 8-hour grace period is given to allow for last minute issues such as Internet connection problems, slow computers, etc., but will come with a 10-point deduction. Students do have the ability to use one assignment as a re-grade or late assignment to help manage workload in the course and with other courses.

## Student Use of Mobile Devices in the Classroom

## Take a break! Please turn off or silence all cell phones while in class.

## Student-Faculty Expectations

At Georgia Tech we believe that it is important to continually strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. See http://www.catalog.gatech.edu/rules/22/ for an articulation of some basic expectations – that you can have of me, and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech, while in this class.

**Course Schedule**

|  |  |  |
| --- | --- | --- |
| **Week** | **Tuesday** | **Thursday** |
| 1 | Class  Introduction | Solid Modeling  Introduction |
| 2 | 2D Sketching  Introduction | Solid Modeling  Basic Forms |
| 3 | 2D Sketching  Advance Features | Solid Modeling  Modifying Forms |
| 4 | Solid Modeling  Combining & Splitting | Rendering  Introduction |
| 5 | ***Solid Modeling***  ***Assignment*** | Body Fit Lab & Scan Data  Introduction |
| 6 | Scan Data  Importing & Clean Up | Scan Data  Repairing & Converting |
| 7 | ***Scan***  ***Assignment*** | Sculpt Modeling  Introduction |
| 8 | **Fall Break** | Sculpt Modeling  Basic Shape Modification |
| 9 | Sculpt Modeling  Shapes from Sketches | Sculpt Modeling  Working with Solids |
| 10 | Patch Modeling  Introduction | Patch Modeling  Advance Forms |
| 11 | ***Sculpt Modeling***  ***Assignment*** | Rendering  Advance Features |
| 12 | Assemblies  Introduction | Assemblies  Working with Outside Data |
| 13 | Animation  Introduction | Animation  Post Processing |
| 14 | ***Animation***  ***Assignment*** | **Thanksgiving** |
| 15 | Simulation  Introduction | Advance  Form Modeling |
| 16 | Advance  Form Modeling | Reading Period |
| 17 |  | ***Final Project*** |