Course Syllabus

Advance Rendering Techniques Syllabus

ID 8803-ART, 3 Credits, Summer 2026

Course Location & Time: On-line Only, see **Course Modality Information** section below for more information

Instructor Information

Instructor	Email	Office Hours
Prof. Tim Purdy	tim.purdy@design.gatech.edu (mailto:tim.purdy@design.gatech.edu)	Tuesday 8 - 9 pm Thursday 11 - noon Email me to meet at other times
Adamya Sharma	asharma3062@gatech.edu (mailto:asharma3062@gatech.edu) +1 (404) 668-6050	**Office Hours** To be announced Email me to meet at other times

General Information

Exploring Concepts in Photorealistic Renderings!

Description

The Advanced Rendering Techniques course is designed to help students advance their rendering and presentation skills to the next level. Want to learn how to make a great “hero” shot or render an

image that will leave people wondering if it is real or not? Then this course is for you!

To achieve this next level, a variety of skills are required. Skills include lighting, using direct lights (spot, point, directional, etc), or environmental lighting through HDR images and studio setups. Material is another important skill. Students will learn how to make a variety of materials thru advanced material graphs or utilize external programs. To pull it together, other skills will be covered, including compositing images, color theory, texture mapping, rendering efficiency, and more. Programs used for this course include KeyShot, Maya, VRED Pro, Substance 3D Designer, HDR Light Studio, and Photoshop. Free access to all the software will be available through vLab (**https://mycloud.gatech.edu/ (https://mycloud.gatech.edu/)**).

Pre- &/or Co-Requisites

None

Course Goals and Learning Outcomes

Upon completion of the course students are expected to demonstrate knowledge, skill and abilities in the following areas:

- Understand what makes a dynamic and interesting rendering
- Learn the strengths of different rendering programs and how to choose the best program for a particular rendering or presentation
- Understand how to light a scene using variety of techniques.
- Develop advanced materials either within a rendering program or through external programs specifically designed for this purpose
- Composite an image using rendering layers so tweaks can easily be done

Course Modality Information

Advanced Rendering Techniques will be delivered in a Remote Asynchronous mode. All course lectures are pre-recorded so students can move through the material at their own pace during the shorten summer session. The course syllabus, assignments, support files, etc will be available through Canvas.

I will be available during the shorten summer session to answer questions, help students with individual instructions, etc. I will have extended office hours (including evenings) to meet with students at their convenience. Our summer TA will also have office hours and can setup meetings to help go over assignments. I have found that this format works well for summer courses since

students tend to have other commitments (jobs, internships, vacations, etc) during the summer sessions.

Advance Rendering Techniques will use several programs during the course. The programs include Keyshot, VRED Pro, Maya, HDR Light Studio, Substance 3D Designer & Photoshop. These are available through the College of Design's vLab (**https://mycloud.gatech.edu/** **(https://mycloud.gatech.edu/)**).

Course Requirements & Grading

Assignments	Modules	Weight (Percentage, points, etc)
Assignments 1 thru 3	**Module 1 -3**	**60%**
Assignments 4 & 5	Module 4 & 5	20%
Homework (5 total, top 4 count)	Module 1 - 5	20%
Total		100%

Schedule

Since this is a remote, asynchronous course, I believe you will set your own schedule. It is the summer so work, travel, vacation, etc. will be taking place, and I want to give you the opportunity to make the most out of the summer. However, I want to provide you with a good learning environment that includes feedback or additional instruction from me. Therefore, due dates for Assignments and Homework are flexible. Please see the next section for specifics.

Late & Re-Grade Assignments

Please make sure to submit all the required files and that all files are properly upload. Assignments will be graded and returned to you within a week. Assignments can be turned in after the due date. There is not a plenty for turning in assignments late. However, all assignments must be submitted by Friday, June 27 (due until date).

NOTE: *Any assignments submitted by June 16, will be graded and returned by Monday, June 23. You will have until Friday, June 27 to resubmit one assignment for a regrade. The last day to submit a regrade assignment is Friday, June 27 (due until date).*

Extra Credit and Grade Dispute Policies and Procedures

Extra credit is not given during the semester. However, students do have the ability to resubmit an assignment for a re-grade and drop the lowest Homework grade.

Description of Graded Components

In Canvas, each assignment has its own description and rubrics. Submission will be through Canvas, and the material to submit will vary for each assignment. An assignment will be due each week for a total of 5 assignments and are worth 100 points. *One Assignment can be re-submitted for a regrade.*

A total of 5 homework will be assigned. The top 4 homework grades will count towards your final grade. Homework will each count for 5 points and has its own rubrics. If a Homework is missed, it cannot be made up or resubmitted for a higher grade.

Submission Requirements

All assignment files are to be turned in electronically through the Canvas system. File and folders can be comprised and submitted in a zip format for easier submissions. If a PDF is required for submission, submit it separately in Canvas so it can easily be reviewed.

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

There is not a required text for the course.

Additional Materials/Resources

Other learning tutorials are available from several sources:

- Canvas Media Gallery - Extra Videos
- School of Industrial Design video library: **https://mediaspace.gatech.edu/category/SoID+Videos/164319331 (https://mediaspace.gatech.edu/category/SoID+Videos/164319331)**
- LinkedIn Learning (Free resource for GT students: **https://linkedinlearning.gatech.edu (https://linkedinlearning.gatech.edu)**
- My GT website: **http://purdy.gatech.edu (http://purdy.gatech.edu)**

Artificial Intelligence (AI) Policy

Please review the **Georgia Tech's AI Standards and Guidance (https://oit.gatech.edu/ai/guidance)** page for important information about the proper use of AI tools. Please note that some AI tools such as "DeepSeek should not be used for Institute-related work, research, or any activities involving Georgia Tech data."
The policy for the use of artificial intelligence (AI) tools, programs, techniques, etc. in this course is the following. All work for assignments must be your own, and AI is not allowed for any part of the assignments. This includes general AI tools as well specific tools within each program. The same is true for homework unless especially allowed.

Course Website and Other Classroom Management Tools

Canvas 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 and homework files electronically. Students are expected to check their email daily for any class announcements.

Attendance and/or Participation

No class attendance is taken since this is a remote, asynchronous course. You can move through the material at your pace.

Collaboration & Group Work

All work is to be student's own work. No group work is allowed for any assignments or in-class assignments. However, asking for help from other students is encourage since it is a great way for both students to learn.
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.

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/ (http://www.catalog.gatech.edu/policies/honor-code/)** or **http://www.catalog.gatech.edu/rules/18/ (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) 894-2563 or **http://disabilityservices.gatech.edu/ (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.

Modified Operations Policies

With developments and improvements to digital instruction over the past few years, the Institute has developed policies to leverage digital learning as much as reasonably possible. The policy sets forth requirements, procedures, and responsibilities related to the scheduling of digital instruction and/or make-up classes due to the modification of campus operations, closing of campus, or the necessary closing of instructional spaces for any reason (including but not limited to emergencies, such as inclement weather, power outages, or other infrastructure failures). Students should await communications from their instructors regarding delivery of their classes during that period based upon the **Digital Learning Days for Modified Campus Operations Policy (https://policylibrary.gatech.edu/academic-affairs/digital-learning-days-modified-campus-operations)** . Students should follow guidance and/or directions provided by the Office of the Vice President for Student Engagement and Well-Being regarding student activities, events, programs and services.

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/ (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.

Student Use of Mobile Devices in the Classroom

Take a break! Please turn off or silence all electronic devices while watching the videos. It will make the experience better.

Additional Course Policies

Got a question? Ask it! I believe it helps make the class more engaging and easier to pay attention. Questions also help me understand if I did not present the material properly or maybe need to go into something deeper.

Campus Resources for Students

Linkedin Learning - https://linkedinlearning.gatech.edu (https://linkedinlearning.gatech.edu/)

Rationale for Teaching Techniques

I believe that ever time a course is taught, it should evolve. I evaluate the material that I have video taped and make sure that the material, techniques and software is still relevant. Therefore, the videos used in this course maybe a combination from this semester and prior semesters.

Teaching Philosophy

I have a philosophy that even in failing, you are learning. Students will bring in a lump of plastic because the 3d printer failed. Just because the 3d printer failed, it does not mean you did not learn about the process. Or, your interface prototype works great when testing and developing it, but start acting up during the testing phase. Maybe the user does something unexpected and causes the interface prototype to mess up. That is why you create an interface prototype. You are learning what the user really does, not what you want them to do. I can sum up this course with this phrase “Failing to Learn.”

Software

Please see the **Software (https://gatech.instructure.com/courses/552996/pages/software)** page that is available under the **Introduction Module (https://gatech.instructure.com/courses/552996/modules/755772)** .

Course Schedule

Since this is an online video course, I believe you will set your own schedule. It is the summer so work, travel, vacation, etc. will be taking place, and I want to give you the opportunity to make the most out of the summer. Also, I want to provide you with a good learning environment that includes feedback or additional instruction from me. Therefore, due dates for Assignments and Homework are flexible. Please see the Late & Re-Grade Assignments section for specifics.

Schedule – Overall

- Module 1 – Advanced Material & Lighting in Keyshot
- Module 2 – Rendering in VRED Pro
- Module 3 – Rendering with Arnold in Maya
- Module 4 – Developing Advanced Materials & Lighting
- Module 5 – Advanced Presentation Methods

Course Summary:

Date	Details	Due
Wed May 20, 2026	**Homework 1 (https://gatech.instructure.com/courses/552996/assignments/2434462)**	due by 11:59pm
Tue May 26, 2026	**Assignment 1 - Advanced Material & Lighting in Keyshot (https://gatech.instructure.com/courses/552996/assignments/2434450)**	due by 11:59pm
Fri May 29, 2026	**Homework 2 (https://gatech.instructure.com/courses/552996/assignments/2434464)**	due by 11:59pm
Mon Jun 1, 2026	**Assignment 2 - Rendering in VRED Pro (https://gatech.instructure.com/courses/552996/assignments/2434452)**	due by 11:59pm
	Homework 3	

Thu Jun 4, 2026	(https://gatech.instructure.com/courses/552996/assignments/2434466)	due by 11:59pm
	Homework 3 - Using MASH Network Tool (https://gatech.instructure.com/courses/552996/assignments/2434468)	due by 11:59pm
Mon Jun 8, 2026	Assignment 3 - Rendering with Arnold in Maya (https://gatech.instructure.com/courses/552996/assignments/2434454)	due by 11:59pm
Thu Jun 11, 2026	Homework 4 (https://gatech.instructure.com/courses/552996/assignments/2434470)	due by 11:59pm
Mon Jun 15, 2026	Assignment 4 - Developing Advanced Materials (Alternate) (https://gatech.instructure.com/courses/552996/assignments/2434456)	due by 11:59pm
	Assignment 4 - Developing Advanced Materials (Original) (https://gatech.instructure.com/courses/552996/assignments/2434458)	due by 11:59pm
Thu Jun 18, 2026	Homework 5 (https://gatech.instructure.com/courses/552996/assignments/2434472)	due by 11:59pm
Mon Jun 22, 2026	Assignment 5 - Advanced Presentation Methods (https://gatech.instructure.com/courses/552996/assignments/2434460)	due by 11:59pm