

CS492(D): Geometric Modeling and Processing

COURSE LOGISTICS
MINHYUK SUNG

Fall 2021
KAIST

Minhyuk Sung (Instructor)

- Assistant Professor in SoC.
(Joined in January 2021).
2nd semester & 2nd course at KAIST!
- Researcher @ Adobe Research.
- Ph.D. @ Stanford.
- M.S. and B.S. @ KAIST.

- Homepage: <https://mhsung.github.io>
- Office: N1, 607.



Juil Koo (TA)

- 1st year master's student.
- Office: N1, 622.



Zoom Policy

- **Turn on** your camera, **turn off** your mic.
You'll get a **penalty** in the participation score if don't turn on the camera.
- Set your **full** (first and last) name (in English) correctly.
- Post questions in **discord** (not in zoom) so that we can follow up even after the lecture.

We'll use multiple tools.

- **Zoom:** Lectures
- **KLMS:** Zoom links, recording, and slides.
- **Discord:** Quizzes, Q&A, and communication.
Did you receive an invitation email?
Check #announcements channel in discord regularly.
- **YouCanBookMe:** Making an appointment with the instructor.
Find the link in the Discord #announcements channel.

Discord

<https://discord.gg/BRF3dxJP>

Set your name (in English) correctly (no student ID).

Students who don't take/audit the course will be removed later.

Quizzes

I'm going to ask lots of questions in the lectures.

Please answer the questions on **Discord**.

Let's try now!

Q. What department are you in?

Evaluation

- In-Class Participation (15%)
- Homework (50%)
- Midterm (15%)
- Final (20%)

In-Class Participation (15%)

Flipped Learning



https://academy.kaist.ac.kr/pages/sub/sub02_02

In-Class Participation – Quizzes

- You'll take (lots of) short/long **quizzes** during the lectures.
- Each lecture may or may not **start** with quizzes about the previous lecture – **Be prepared!**

In-Class Participation – Quizzes

- Most quizzes will be about solving (easy) math problems.
- **Prepare a pencil and paper in lectures!**
(and also a camera, your smartphone.)
- Sometimes I'll ask you to take a photo of your scribbling and post it on **Discord** or submit to a **Google form**.

In-Class Participation – Quizzes

- TA will choose (probably not all but) **a few quizzes** each lecture for the evaluation.
- TA will decide the **score** of each quiz in a range of [1, 3]. The more difficult, the higher score.

In-Class Participation – Quizzes

- TA **may** or **may not** check the correctness of your answer.
- For some difficult quizzes, **reasonable** wrong answers might be ok.
But, the answer still needs to be reasonable.
- The goal of quizzes is to **engage** your learning and participation in classes, not to evaluate your performance.

In-Class Participation – Q&A in Discord

- Good **questions** and **answers** posted in discord will get  from the instructor or TA, and **extra scores** (in a range of [1, 3]) in the participation.

In-Class Participation

- If you get **80%** of the participation score or more, you'll get **full** credits in the participation evaluation.
- Otherwise, the percentage of your participation score will be your final score.

Homework (50%)

Homework

- There will be **five** homework assignments.
Check out the schedule in the course webpage:
<https://mhsung.github.io/kaist-cs492d-fall-2021/>
- Each homework (except for the last one) will have **two weeks**.
Chuseok and midterm weeks are not counted.
- We **strongly encourage** you to start the homework **as early as possible**.
- **All deadlines are 11:59 pm KST.**

Homework

- The first two homework assignments will be **pencil-and-paper** problems.
- The rest of them will have both **pencil-and-paper** problems and **programming** assignments.
(but focusing more on the programming assignments.)

Homework – Pencil-and-Paper Problems

- Typeset your submissions using **Latex** or **MS Word**.
- I highly recommend to use **overleaf**:
<https://www.overleaf.com/>.

Homework – Programming Assignment

- Programming assignments will be in C++.
But, it is not required to have high-level C++ programming skills.
- Most of them will ask to **fill in** blanks, but the last few will ask to write a code **from scratch**.
- You'll also need to write a few **OpenGL** codes about drawing lines, but it would be easy.

Homework – Submission

 gradescope <≡

CS492(D)

Geometry Modeling and Processing

- Dashboard
- Assignments
- Roster
- Extensions
- Course Settings

INSTRUCTOR

- Minhyuk Sung

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DESCRIPTION

3D content creation is a crucial part of many industries such as graphics, AR/VR, CAD/CAM, and digital fabrication, which tasks typically include designing and creating virtual objects/scenes or reconstructing a real environment. Processing scanned 3D data is also an important problem in many applications as 3D scanning technology is being widely applied, for example, in autonomous driving, robot navigation, and 3D object replication. In this course, we discuss fundamental mathematical methods for geometric 3D modeling and geometric data processing, which can be used (not only in graphics-related fields but) in many other areas in science and engineering. For more details, check out the course webpage: <https://mhsung.github.io/kaist-cs492d-fall-2021/>

THINGS TO DO

- ! Add students or staff to your course from the **Roster** page.
- ! Create your first assignment from the **Assignments** page.

Homework – Collaboration Policy

- **Collaboration** is strongly encouraged.
- Make a collaboration group of **at most three**.
Deadline: Sep 8 (Wed)
- If you don't make a collaboration group until this deadline, you'll be assigned to a **random** collaboration group.

Homework – Collaboration Policy

[Important]

- *You can discuss homework with collaborators in the group, but each of you must submit the solution **separately**.*
- *You **must not copy** the solution of your collaborators. Also, you **must not show** your solution to your collaborators.*

Homework – Late Day Policy

- Life is unpredictable, and there can be circumstances beyond your control.
- **You will be allowed to use **five** late days, except for the last homework.**
- You can use all of them for one homework or distribute them to all the homework.

Homework – Late Day Policy

- After spending all late days, a late submission will be penalized by **20% per day**, unless special arrangements have been made **previously** with the instructor.

Extra Scores

- There may (or may not) be problems with **extra scores**.
- Extra scores can make up the scores you lost in the **other** homework assignments, but it cannot go over the **perfect total homework score**.

Midterm (15%) and Final (20%)

Schedule

Midterm: Oct 20 (Wed) 10:30 am ~ 12:00 pm

Final: Dec 15 (Wed) 10:30 am ~ 12:00 pm

Exams

- The exams will be **offline** (happening in a physical space).
- Each exam will have **6~8 short** questions.
- Exams will be closed book, but you will be allowed to bring a **note on one sheet of paper**.