

Computer Graphics 1

Tutorial Organization

Summer Semester 2021

Ludwig-Maximilians-Universität München

Tutorials Team



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Student Tutor

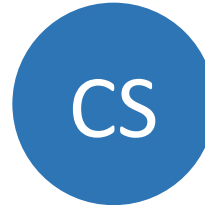
Wednesday 2 pm - 4 pm



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Thursday 4 pm - 6 pm

Purpose

- Practice and **consolidation** of lecture content
- **Hands-on** activities and discussion
- **Addressing** issues in doing the assignments
- Opportunity to discuss and ask **questions** with your fellow classmates
- **Preparation** for future work/research fundamental skills

Syllabus (Tentative)

- **Register** yourself via [Uni2Work](#) and [Moodle](#)!
- Timetable:

Date	Title	Topics
21.04/22.04	01 Getting Started With Graphics Programming	JavaScript basics, Git, Markdown, graphics programming with three.js
28.04/29.04	02 Transformation	Linear algebra, affine transformations, 3D rotations
05.05/06.05	03 Geometry Representations	Geometric representation, Bezier, CSG, mesh sampling, LOD
12.05/13.05	04 Camera Viewing Pipeline	Model-view transformation, orthographic and perspective projections, viewport
19.05/20.05	05 Rasterization Pipeline I	Bounding box, bounding volume hierarchy, culling, drawing
02.06/03.06	06 Rasterization Pipeline II	Anti-aliasing, rendering pipeline, shading language
09.06/10.06	07 Texture	Texture mapping, barycentric interpolation, MIP map
16.06/17.06	08 Shading and Shadowing	Blinn-Phong Surface Shading, Shading frequency, Shadow maps

Live Session

Tutorial Session 1

- Location: [Zoom](#)
- Time: Wednesday 2pm - 4pm

Tutorial Session 2

- Location: [Zoom](#)
- Time: Thursday 4pm - 6pm

Graded Assignments Policy

- Graded assignments are considered as examination of your study, and there are 6 graded assignments
- **100 points in total, 50 points to pass with 4.0, and 90 points or more to get 1.0**
- Assignments are turned in via [Uni2Work](#), you can write either in German or English or mix
- [Registering to the exam](#) is necessary for doing the graded assignments
- We do **not** accept group submissions
- We do **not** accept late submissions
- Timetable:

Assignment	Submission Period (Anywhere on Earth, <i>AoE</i>)	Points	Major Topic	Solution Discussion
1	30.04 - 04.05 (05 days)	10	Transformation	on Tutorial 3
2	07.05 - 14.05 (08 days)	20	Geometry	on Tutorial 5
3	17.05 - 26.05 (10 days)	20	Camera	on Tutorial 6
4	28.05 - 06.06 (10 days)	20	Rasterization	on Tutorial 7
5	14.06 - 25.06 (12 days)	20	Material	No Discussion
6	28.06 - 04.07 (7 days)	10	Illumination	No Discussion

Cheating Policy

- Suggestion: You don't
- In case of suspicious behavior/submission, you will be asked to explain your submission in an oral exam
- In the worst case, you will be withdrawn from the entire course, and one can only rejoin next year

FAQ

Q: Do I need submit the calculation/problem-solving process in assignments?

A: Yes, your thought process is helpful for us to correct your submissions. *But dependent assignment tasks assume previous results to be correct, and thus you won't get points for intermediate results.*

Q: Will the assignments solutions be discussed in the tutorial?

A: Yes.

Q: Do I have to master *JavaScript* **TypeScript** to success in CG1?

A: No, and Yes. "No" means you don't have to know every detail about JavaScript/TypeScript, because the languages are designed for many different purpose. "Yes" means that we select JavaScript/TypeScript for graphics programming because of the following reason: 1) Familiarity: almost all students learned Java and JavaScript from prerequisites and TypeScript is compatible with JavaScript, offers static typing and easier for debugging; 2) Simplicity: Compare to C++; 3) Cross-platform: (almost) OS/Hardware irrelevant (everyone has a browser); 4) Infrastructure: existing open source facility, i.e. three.js. 5) ... and of course more reasons 😊
Certainly, we need several basic building blocks such as function, class, for loop, etc., to be able to write programs. Remember: *Language is not an issue for graphics.*

Q: There are pieces of stuff not detailly discussed in the lecture but appears in the tutorial (and vice versa). Why are they relevant for me?

A: Everything is connected.

Q: Do I have to remember the three.js APIs by hard?

A: No. We do everything open book, so you can always fetch the API docs.

**If you have more questions, please post them in the Moodle's [discussion form](#).*