


**An Introduction to CS 457/557**

"Computer Graphics is the world's #1 enabling technology. It doesn't matter who you are or how you got here. Computer Graphics is for everyone" — Mike Bailey

"Imagination will often carry us to worlds that never were. But without it, we go nowhere." — Carl Sagan


"Don't wake me for the end of the world unless it has very good special effects." — Roger Zelazny

"What will matter is what you learned and how you used it." — poster outside my office




**Oregon State University**

**Mike Bailey**  
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CS 457/557

**Mike Bailey**


- Professor of Computer Science, Oregon State University
- Has been in computer graphics for over 30 years
- Has had over 13,500 students in his university classes
- mjb@cs.oregonstate.edu



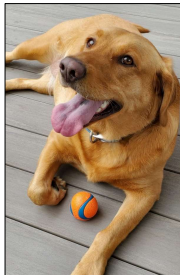
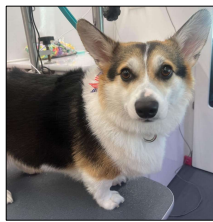
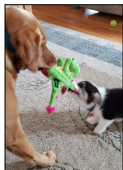



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**I Apologize in Advance for What Noise You Might Hear in my Background at Home**




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**Course Topics**

1. GLSL Vertex shaders
2. GLSL Fragment shaders
3. GLSL Geometry shaders
4. GLSL Tessellation shaders
5. GLSL Compute shaders
6. A more advanced look at the graphics pipeline
7. Homogeneous coordinates
8. The OpenGL Shading Language (GLSL)
9. The GLSL API
10. A more advanced look at transformations, including non-linear
11. Mixing and Morphing
12. Lighting
13. Bump-mapping
14. Cube-mapping
15. GLM
16. Shadows
17. Positional and gradient noise
18. Fractional Brownian Motion (FBM, 1/f, octave) noise
19. Spectral effects
20. Lenses
21. Using shaders in visualization
22. Vulkan GLSL shaders



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**The CS 457/557 Class Resources Page**


Class materials will be linked into various Canvas pages, but you can find *everything* here:

<http://cs.oregonstate.edu/~mjb/cs557>

(It doesn't matter if you are in CS 457 or CS 557. It doesn't matter if you are on-campus or online. We *all* use the same Class Resources Page.)



CS 457/557



CS 457/557


**Grading: Points and Cutoffs**

- 10 Quizzes @ 10 points each
- 2 Tests @ 100 points each
- 8 Projects, worth a total of 720 points
- CS 557ers will also do a 100-point Paper Review Project (457ers get a free 100 points for that assignment)


**Total Points = 1120**

**Grade cutoffs will be no higher than:**

Points	Grade
1080	A
1060	A-
1040	B+
1020	B
1000	B-
980	C+
960	C
940	C-
920	D+
900	D
880	D-



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#### Quizzes

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- Quizzes will go live every Friday at 12:01 AM Pacific Time.
- Quizzes are due at 23:59 Pacific Time Sunday evening.
- **Part of what is being quizzed is the time management skills necessary to remember to take the quizzes. Thus, if you forget to take the quiz, there is no make-up.**
- ***I really recommend that you take the quiz before the end of Friday!***



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#### More Information, I:

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##### Link to the Code of Student Conduct:

<https://beav.es/codeofconduct>



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#### More Information, II:

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##### Students With Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at [disability.services@oregonstate.edu](mailto:disability.services@oregonstate.edu) or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

##### Religious Holidays

Oregon State University strives to respect all religious practices. If you have religious holidays that are in conflict with any of the requirements of this class, please see me immediately so that we can make alternative arrangements.



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#### More Information, III:

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##### Counseling and Psychological Services

Oregon State University's [Counseling and Psychological Services \(CAPS\)](#) provides OSU students with individual, relationship, and group counseling. I have met some of these people, and they are *really* good. If you are in any type of emotional difficulty, don't hesitate to contact them. If it makes it easier for you, I will walk over with you.

CAPS can be reached by:

Walking in the door: 5th Floor Snell Hall (2150 SW Jefferson Way)

Email: [caps@oregonstate.edu](mailto:caps@oregonstate.edu)

Phone: 541-737-2131

Fax: 541-737-2518

##### MySSP: Mental Health Support for Students

MySSP @ OSU is an app that gives all OSU students, including Ecampus students, 24/7 access by text or phone with a licensed mental health counselor (MySSP stands for My Student Support Program). The app makes it easy to schedule short-term counseling appointments with the same ongoing counselor and provides educational materials covering mental health topics. Students can communicate with a counselor in five different languages (Mandarin, Cantonese, French, Spanish or English); additional language options are available upon request. Download this app by looking up "TELUS Health Student Support" on the Google Play Store (Android) or the Apple App Store (iPhone).



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#### More Information, IV:

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##### Life Events

As {John Lennon? Allen Saunders?} has said: "Life is what happens to you while you're busy making other plans". I care about you as a person. When life happens to you, send me an email and come see me. I might be able to help, I might not. But I surely can listen. You are not alone.

##### Reach Out for Success

University students encounter setbacks from time to time. If you encounter difficulties and need assistance, it's important to reach out. Consider discussing the situation with me or an academic advisor. Learn about resources that assist with wellness and academic success at <http://oregonstate.edu/ReachOut>. If you are in immediate crisis, please contact the Crisis Text Line by texting OREGON to 741-741 or call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255).



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#### More Information, V:

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##### Basic Needs

Success at OSU means knowing and using your resources. One helpful resource is the community of staff available at the Basic Needs Center (BNC) for support ([bnc@oregonstate.edu](mailto:bnc@oregonstate.edu), 541-737-3747). Students can drop in during open hours and talk with a BNC student leader for resources, ideas and strategies connected to basic needs challenges. The BNC is often known for its [food pantry](#) but there are other resources connected to groceries and affording food often available and staff who can help you work through housing stressors.

Additionally, the BNC [Textbook Lending Program](#) offers students the opportunity to check out required textbooks for the academic term.

Furthermore, if you are comfortable doing so, please talk with me. I will do everything I can to help you.



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