CS 392 Special Topics: 3D Structure Generation with Blender
Fall 2025 3 credits
TTh 9:00-10:15 in MLH 310

Instructor Information

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Office Hours: Monday 1:30-3:00, Thursday 10:30-12:00
Course Website: `https://isoptera.lcsc.edu/seth/cs392blender`

Pre-requisite

(Unofficial) CS111 with a C or better.

Course Description

This class covers the generation of 3D structures using the Python programming language and the interpreter embedded within the Blender 3D modeling tool. This includes coverage of 3D graphics in a general. It will also provide an example of how to use Python with an API, programming practice, and some photogenic examples of student work.

Course Learning Outcomes

At the end of the course, students should:

- Understand the basics of 3D graphics
- Be able to write Python scripts for Blender using the Blender API
- Understand generation algorithms such as fractals and landscapes

Textbook

There is no official textbook for the course.

Communication Policy

Email is the best way to reach me, and I try to respond within 24 hours during the work week (Monday through Friday). Often I respond on weekends as well, but less consistently.

Grading

Your grade will be calculated based on the following items:

Item	Percentage of grade
Exam 1	10%
Exam 2	20%
Final Exam	30%
Weekly Homework and/or In Class Assignments	40%

Attendance will not be taken in this class except as required for financial aid purposes. However, all material presented during lecture is "fair game" for the midterm and final, and some of this material may not be in the book as well. Therefore I recommend that you always attend class.

I strive to return feedback on assignments within a week, however, other priorities such as providing content for class and answering student questions may override this goal.

Letter grades will be assigned in the following way:

A: 90% +
B: 80%- 90%
C: 70%- 80%
D: 60%- 70%
F: less than 60%

Use of + or - grades (such as B+ or A-) and curves will be at the instructor's discretion.

Course Assignments

Course Assignments will be arranged on a weekly basis, and posted on the class website. Generally assignments for any given week will be ready by class time on Tuesday, discussed in class, and due the next Tuesday. Some work from assignments may be intended to be worked on in class, and at least some work every week will be homework.

Deadlines and late work

Late work will not be accepted, except by instructor discretion. However, partial credit will be given for partially-completed work. It is better to turn in an unfinished assignment for partial credit than to not turn in something on time and receive a 0. Ask ahead of time if you have circumstances that require an extension.

Academic Dishonesty

Cheating on any assignment will result in failing the class. Some things which constitute cheating in this class are:

- Copying another student's homework
- Turning in homework created by another student
- Reading another student's answers on a test
- Sharing all or part of your completed homework with another student before the assignment is due
- Turning in code found on the Internet

Appropriate collaboration on homework involves sharing ideas with other students, but not source code! Although it is often tempting to help another student by showing them how your completed program works, this is not helpful to their learning. However, this does not mean you cannot collaborate with other students on homework. Sharing of ideas, principles, and algorithms is permitted and encouraged.

Tentative Course Schedule

This is a special topics course, being offered for the first time. The following schedule will likely shift a great deal during the semester.

CS392 Special Topics: 3D Structure Generation with Blender Fall 2025 Calendar	
Week	**Course Content**
Aug 18	Course Introduction, Objects in Python, states and context, Blender API
Aug 25	Blender
Sep 1	Fractals
Sep 8	More Fractals
Sep 15	Perlin Noise
Sep 22	Midterm Exam 1 and Answers
Sep 29	Lighting in Blender and in general
Oct 6	Landscape Generation
Oct 13	Mazes
Oct 20	Using 2D textures with 3D structures
Oct 27	Buildings
Nov 3	Midterm Exam 2 and Answers
Nov 10	Plants and Trees
Nov 17	More Plants and Trees
Nov 24	Thanksgiving Break! No class all week
Dec 1	TBD (Things that didn't fit earlier)
Dec 8	Final Exam Thursday, December 11, at 9:00 AM in MLH 310

College Statement on State Law, Academic Freedom, and Course Expectations

Effective July 1, 2025, Idaho Code § 67-5909D establishes that courses "derived from or that promote" certain concepts associated with critical theory or diversity, equity, and inclusion (DEI) may be subject to additional state-level reporting and oversight. However, the statute also explicitly affirms that it does not "limit the free discussion of ideas in a classroom setting." At LC State, this provision protects our ability to foster a learning environment grounded in open inquiry, respectful dialogue, and academic integrity.

As one of Idaho's four public four-year institutions, LC State is governed by policies of the Idaho State Board of Education, including the following principles articulated in SBOE Policy III.B:

"Membership in the academic community imposes on administrators, faculty members, other institutional employees, and students an obligation to respect the dignity of others, to acknowledge the right of others to express differing opinions, and to foster and defend intellectual honesty, freedom of inquiry and instruction, and free expression on and off the campus of an institution."

In line with these principles, this course is designed to encourage your academic development through thoughtfully selected readings, activities, and assignments. You are invited to engage critically with course materials, analyze competing viewpoints, and arrive at your own reasoned conclusions. While some content may challenge your perspective, you will not be asked or required to adopt any specific ideological or political position.

As you review the course syllabus and other instructional materials, please know they have been developed to support a respectful, engaging, and rigorous learning community. If at any point you decide that this course does not align with your academic preferences or goals, you are encouraged to contact your Academic Advisor (full email: advisor@lcsc.edu) to discuss available alternatives. Be sure to consult the LC State Academic Calendar for important deadlines related to course withdrawal or schedule changes. If you are receiving scholarships or financial aid, consult with the Financial Aid Office about potential impacts on scholarships or financial aid eligibility.

If you have questions about course content, instructional approach, or academic freedom policies, please contact the Provost/VP of Academic Affairs (full email: academicaffairs@lcsc.edu). We are committed to your success and to upholding LC State's standards of academic excellence, respect, and transparency.