

Generative Design

Generative design is a technique that leverages programming to amplify human creativity. Learn how artificial intelligence, mathematics, and software engineering can let us create games with vast and beautiful worlds. It will expose new opportunities for bending game platform limitations and enabling designs unreachable without generative techniques. Learn to use generative grammars, biologically-inspired algorithms, and even some of the latest deep machine learning ideas to generate images, music, and game level designs.

Readings: Students will read, watch, and play through relevant examples of generative design. Readings will address the theory and practice of generative design from both academic and craft practice (i.e. indie game designers') perspectives. In response, students will complete short quizzes that occasionally involve critical writing.

Programs: Students will design, build, and deploy their own unique interactive examples of generative design under technical and aesthetic requirements and building on example (JavaScript) code provided by the course staff. Submissions must be viewable on the web.

Creative Project: Individually or in small teams, students will propose and build larger generative design projects. They will constructively critique and evaluate the work of others during the last two weeks of class.

Note on pre-requisites: This course assumes the ability to build and deploy interactive software at a skill level comparable to that resulting from *CMPM 120*. Students who have not completed this course but can explain or demonstrate similar experience are encouraged to request a permission code to join the course.

Scoring and Grading

The course will be scored as following:

- 20% Readings
- 40% Programs
- 40% Creative Project

The mapping from numerical scores to letter grades will depend only on scores, and it will be decided after *all scores have been finalized*.

Incompletes: Students with score below a certain threshold in certain categories may be given the option to take an I grade instead of the normal letter grade and complete or re-attempt some of the assigned work during the next quarter.

Late work policy: Because of the compressed schedule, no late work will be accepted, regardless of the reason. The **2** lowest-scored reading and **1** lowest-scored programming assignment will be dropped.

Course Policies

Attendance: Other than days when there are graded in-class activities, attendance of lecture will *not* directly impact your score in the class. If you cannot reasonably attend a given lecture, please instead review the video recording for that lecture later on your own time. However, it is highly recommended that you attend all classes; we've only got 10 of them!

Discussion Participation: Participation in in-class discussions is not necessary to earn points, however your contributions are valuable part of this course design. Your unique perspective can add to your peers' experiences in a way that the course staff alone cannot. As you decide how to participate, keep the [UCSC Principles of Community](#) in mind.

Collaboration: As hybrid artist-engineers / designer-programmers in training, you are expected to be able to productively work *with* others. Although assignments are possible to complete individually, we expect you to talk with your peers, show them your screens, and make liberal use of copy-paste within your ad-hoc collaborative team before submitting your work. In deciding what and how to communicate with your peers, you should try to optimize how much others can learn from you and how much you can learn by teaching others. Note the attribution policy below.

Attribution: By default, we will assume any work you submit is artistically and technically entirely your own creation. Where this is not the case for your work, give credit to your collaborators and outside resources you used in your work using *comments* on your Canvas submissions.

Academic honesty: The Baskin School of Engineering has a zero tolerance policy for any incident of academic dishonesty. If cheating occurs, consequences may range from getting zero on a particular assignment to failing the course. In addition every case of academic dishonesty is referred to the students' college Provost, who sets in motion an official disciplinary process. Cheating in any part of the course may lead to failing the course, suspension or dismissal from the Baskin School of Engineering, or from UCSC. The course staff is intent on setting up the course with many opportunities for you to learn from your peers and to not create unnecessary situations that might trap you into academic dishonesty.

Alternate interpretations of readings: Many reading assignments require interpretation that goes beyond the contents of the assigned texts. If you miss points for picking an answer that you truly believe is the best available answer in your interpretation, you can discuss this interpretation with the course staff in office hours with the possibility of adjusting your score. Most often, this happens when a key phrase means something specifically different for you that it does not mean for others because of your individual background.

Student Resources

Disability Resource Center: UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me privately during my office hours or by appointment, preferably within the first two weeks of the quarter. At this time, I would also like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at 831-459-2089, or by email at drc@ucsc.edu.

CARE: Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the Campus Advocacy Resources & Education (CARE) Office by calling (831) 502-2273. In addition, Counseling & Psychological Services (CAPS) can provide confidential, counseling support, (831) 459-2628. You can also report gender discrimination directly to the University's Title IX Office, (831) 459-2462. Reports to law enforcement can be made to UCPD, (831) 459-2231 ext. 1. For emergencies call 911.

CAPS: The [Counseling and Psychological Services \(CAPS\)](#) office provides a variety of counseling services to undergraduate and graduate students including individual counseling, groups and workshops, couple counseling, crisis services, on-campus psychiatry, the Let's Talk program, ADHD assessment, referrals to off-campus therapy, on-line self-help tools such as WellTrack, as well as a wide range of links to self-help resources on topics ranging from academic success, to depression, to general life issues.

Location & Time

Tuesdays and Thursdays, 6:00pm to 9:30pm

J Baskin Engineering Rm 156

Course Staff

Instructor:

Asiah Song (julinas@ucsc.edu), office hours Tuesday 10-11, Thursday 11-12 over [zoom](#)

[\(Links to an external site.\)](#)

or by appointment. (But I recommend just emailing questions!)