

CNM 190 & 191

Advanced Topics in Visual Media Production: Procedural vs. the Hand

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Instructors: Greg Niemeyer, Dan Garcia, and Industry Guest Lecturers

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UC Berkeley's Center for New Media is proud to offer CNM 190 and CNM 191, a joint effort between the Art Department and Division of Computer Science at UC Berkeley with guidance and assistance from Pixar Animation Studios. This course is targeted at 4th year students with backgrounds in either computer science, art, or film who intend to work in the visual effects, animation, or entertainment industries upon graduation. It will build upon students' knowledge from previous related courses to guide them through the production process in an environment similar to studios like Pixar, PDI, and ILM. The unique structure of the sequence allows the students to partake in an adaptive educational experience. We will survey many advanced topics and allow students to focus on a subset which they find interesting. These topics are presented in the order in which they are used in a production pipeline. Throughout the sequence, students will maintain a demo reel of work they have done for their group. This demo reel should make use of at least half of the advanced topics discussed. Students should be aware that this is essentially a year long course and should not enroll if they do not intend to take CNM 191 in the spring.

CNM 190 studies the differences between procedural and manual modeling/animation techniques. Students explore a broad range of advanced procedural and manual techniques, their respective aesthetic and narrative qualities, and their production costs. To demonstrate their mastery of the matter, students will produce three 30-second shorts, one purely hand-modeled and hand-animated, one purely procedural, and one with a judicious combination of both manual and procedural techniques. The course is enhanced with biweekly industry guest lectures. Topics include short narrative development, procedural modeling, advanced Character Rigging, procedural animation, AI-based animation, data-based animation, Advanced manual animation, procedural and manual camera animation, and advanced image composition.

Prerequisites

In order to enroll in this course, students must have completed 2 of the following requirements:

- Art 172
- Art 175
- CS 184
- 1 Semester of UCBUGG

During the first year offering of CNM 190/191, we may allow a limited number of students to take the series with just 1 semester of UCBUGG or only CS184 under their belt if they take Art 172 concurrently.

Course Structure

This course is lab and group based and will meet twice a week (Monday and Wednesday 5-7pm). The primary focus of the Monday meeting will be lecture (with Dan, Greg, or guest lecturers). Wednesday classes will be split between lecture and lab work.

During the second week, project groups will be assigned, and the groups will pick 3 shorts to work on based on the pitches contributed by the group members. Each short will be approximately 30 seconds long. One will be entirely hand modeled and animated; another will be completely procedurally modeled and animated; and the last will combine hand and procedural techniques.

Each team will be responsible for maintaining a website as a record of their progress and a place to show off their work.

Director and Project Manager

Each film group will choose a director and a project manager during the third week of the class. These students should have experience from a prior film class or Art 175 and will work in these rolls in addition to their normal duties in the group. The director is in charge of ensuring the vision of the project is successfully achieved and keeping the film group on that artistic goal. The project manager is in charge of ensuring the film group is working effectively towards that vision. The PM will break up the film group into production units and hand out tasks.

Grades

The final grade will be based heavily on participation during lab as well as reasonable contributions towards the groups goals. This determination will be based mainly on the demo reel that students maintain and observations of the instructors during lab, so it is vital that students actively participate in class.

Deadlines are always a problem in production environments like this. As such, we are giving incentives to groups to not only complete their work on time but make sure the other production group is making their deadlines as well. If both groups meet a deliverable on time, they both gain a bonus point. If both miss the deadline, they both lose a bonus point. If one group makes a deadline and the other doesn't, then a point is lost for the team missing the deadline, but the team that made it doesn't get one.

Plagiarizing

This may not seem like a big concern in a class of this nature, but it is still possible to plagiarize. Students may find models online and wish to use them in their film. This is perfectly reasonable in many cases (especially for extra set dressing), but credit must be given to the source of these models in the movie's final credits.