

# THE PEDAGOGY OF AN INTRODUCTORY UNIVERSITY-LEVEL MAYA COURSE

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## Abstract

3D animation and visual effects software packages such as Maya have become indispensable creative tools. They are used in many industries including filmmaking, video game development, advertising, manufacturing, and the medical field. Colleges and universities worldwide teach courses on how to use Maya. This paper is designed for instructors that plan to write their own introductory Maya courses to prepare students for work in the film or video game industries.

Maya is a robust and versatile software tool, designed for a multitude of creative applications including modeling, rigging, animation, lighting, visual effects, physical simulation, and so much more. However, Maya's versatility also makes it incredibly complex. Maya can be daunting and overwhelming for new users.

In this paper, I present an example of how to design an introductory university-level course that empowers students to use Maya by employing a project-based method of authentic use cases. The course outline I provide here is the outcome of my experience teaching introductory Maya courses to hundreds of students from three different majors.

A fifteen-week course does not provide sufficient time for students to master Maya. So then the first key to a successful introductory course in Maya is setting an appropriate scope. I assess the learning priorities of the students and what features of Maya will be most useful to those students. This depends on what industry the students plan to go into. For example, a Maya course focused on game development would emphasize low polygon modeling, animating with cycles, and exporting assets to game engines. Downstream course content also must be considered, to ensure that the introductory course lays a firm foundation for future courses to build on. In this paper, I provide several examples of how different target industries or downstream courses can affect the content of the introductory course.

The best way to learn Maya is to dive in and start creating. An effective course will provide opportunities to use Maya from very early in the course. A project based course is therefore a potent teaching approach, providing plenty of hands-on learning opportunities for students.

The projects must be carefully scaffolded to introduce the basic tools and workflows first, with each new project building on what came before and introducing more features. The pace should challenge students to solve new problems, but not overwhelm them. This requires a targeted approach that teaches some Maya features while specifically ignoring other features until the right time. This is in direct contrast to other approaches for teaching Maya, which just methodically explain all the buttons, menus, and features of Maya, without providing helpful context. The learner is then left on their own to figure out how to use Maya for their specific use case.

This paper contains a week by week breakdown of course topics covered, and why those topics were chosen. Project assignments and grading rubrics are also explained. The principles and resources contained in this paper provide a framework that can be adapted for the creation of introductory Maya courses by other instructors.

Keywords: Maya, 3D Animation, Game Development, Game Art, 3D Art, CGI, VFX, Digital Art, 3D Modeling, Pedagogy, Teaching, Course Writing.