1. INTRODUCTION
In the Spring of 2009, the Computer Science Department at the Rochester Institute of Technology gave an experimental offering of their course: Computer Animation: Algorithm and Techniques, entirely in the virtual world of Second Life. The goal of the experiment was to discover whether worlds like Second Life could be used effectively to teach computer graphics in a distance learning environment.

Use of Second Life for education in general, and for distance learning in particular, has skyrocketed [Ritzema and Harris 2008] though very little has been reported on the use these worlds for teaching Graphics and Animation.

This talk will focus on the unique opportunities and challenges of offering a course in Computer Animation in Second Life and explore the possibilities for teaching animation as an online course.

2. THE COURSE
Computer Animation: Algorithm and Techniques is a course that takes a look at computer animation from a programmer’s perspective; focusing on both the theory and implementation of fundamental animation algorithms. Inspired by the text of the same name [Parent 2008], it covers topics such as quaternions, interpolation, dynamics, numerical integration, articulated figure motion, behavioural motion, and particle systems.

The course is structured around weekly lectures. Students are required to read, summarize, and discuss seminal papers introducing each topic and then complete a number of programming assignments based on the content presented in lecture. The course culminates with the presentation of a quarter long project which is chosen by each student and approved at the start of the quarter.

The course has been offered annually, using a traditional classroom delivery, since 2002. In these past offerings, students generally completed their assignments and projects using C, C++, or C# in conjunction with a 3D graphics API (e.g. OpenGL, DirectX, XNA).

3. DELIVERY
This offering of the course was presented entirely and exclusively in Second Life on the RIT Island. Although a Web based course management system is used to manage course content and facilitate on-line discussions, all other interaction including lectures, student assessment, and instructor office hours, are conducted in-world.

Weekly lectures are presented in an in-world amphitheatre complete with slide presentations. Lectures are augmented with live demonstrations of animation algorithms using objects within the 3D world. (Figure 1)

A sandbox area of the island has been set up for students to develop programming assignments. All assignments are implemented using Second Life’s native scripting language (Linden Scripting Language-LSL) and submitted to the instructor via in-world demonstrations (Figure 2). During the final exam, student projects are showcased in a virtual poster session.

4. PRELIMINARY FINDINGS
The approach used in the class offers a fine alternative to traditional course delivery in physical classroom and shows much possibility for teaching animation as an online offering. Student satisfaction is high. The live demonstration of assignments provides a more exciting and productive venue for both students and instructor alike, allowing for more immediate feedback and providing a more interactive and friendly assessment environment. The use of the LSL for assignments, however, proved to be challenging due to more restrictive level of access provided by the scripting language in comparison to other APIs such as OpenGL or DirectX.

REFERENCES