

3D Visual Effects

Spring 2017

ARTS 4060-01

Monday, Thursday 10:00am- 11:50am

Sage Lab, VAST Studio, 2411

Shawn Lawson

Email: lawsos2@rpi.edu

Phone: 518 276 2206

Office: West Hall 314B

Office Hours: Mon/Thu 9am – 10am, and by appointment

Computer Science is no more about computers than astronomy is about telescopes.

- E. W. Dijkstra

Abstract:

This course will explore conceptual ideas with a developed toolkit of skills. Skills possibly covered will be: scripting, advanced rendering and lighting, visual effects, fluids, and simulations. Emphasis will be placed on self-directed, conceptual, finished, high quality artwork. This course will be taught in an atelier style, where student motivation and collegial support are strongly emphasized.

Learning Outcomes:

By completion of the course...

- Students will be able to research and teach themselves advanced computer graphics technique.
- Students will be able to develop their own digital tools, techniques and pipelines.
- Students will be able to use simulation techniques to create visual effects techniques.

Supplies:

Required:

- Account to <https://www.pluralsight.com>
- Notebook
- Data storage – And lots of it. Whichever means of saving your files is most trustworthy and effective for you.

Suggested:

- Learning Maya 2009 : The Special Effects Handbook. – While this book is not required, it contains great examples of advanced texturing, lighting, and rendering techniques.
- Maya Visual Effects the Innovator's Guide – While also not required, it has numerous trick and tips.

On Reserve in RPI Library:

- Animating Cartoon Characters in Maya TR897.7 .A597 2008
- Facial Rigging and Animation in Maya Bundle TR897.7 .F33 2006, TR897.7 .F335 2006
- Quadruped Rigging and Animation in Maya Bundle TR897.7 .A598 2007, TR897.7 .R569 2007
- UV Mapping Workflows in Maya TR897.7 .U8 2008
- Introduction to Maya Muscle TR897.7 .I68 2008

Important Points:

Excuses:

Excuses are only acceptable in the following four scenarios: death of family member, a note from doctor or documentation of hospitalization, viable religious observance, and presentation or exhibition of academic work or research at a conference, symposium, gallery, museum, etc. Singular sick days are excusable without documentation within a reasonable limit – for example: two. Illness spanning two or more consecutive class days is not excusable without documentation. Excuses must be declared and accepted before class time by phone, email, or in person.

Studio Format/ Work Load:

This course does not require everyday attention, although it is a studio course and will require six to ten hours of work outside of class each week on average.

E-mail:

E-mail is the most effective communication with me outside of class. I will use your RPI account to communicate with you.

Distractive Computing:

No computing, exceptions are: following in class demos and work in class. Refusal to turn off monitors, close laptops, etc will result in receiving an absence for that day.

Grading:

Assignments:

- Assignments are due at the beginning of class.
- Twenty-five percent of an assignment's total points will be deducted per day late. Days are calculated from the time an assignment is due.
- You will be required to speak and present your work. You will also be required to speak about your colleagues' work. Part of each assignment grade will be based on your participation during critique.
- Voluntary extra assignments for an increase in a final grade will not be accepted.
- Redoing an assignment for a potentially higher score is acceptable only if the assignment was originally turned in on time and if the re-completed assignment is submitted within four days of the assignment's original deadline.

Attendance:

- Attendance is mandatory and taken at the beginning of class.
- Only disputes brought to the instructor's attention within one week of the infraction will be considered and discussed.

- Each three absences equal reduction final grade by one letter.

Overall:

- All appeals must be brought to the instructor during office hours or at a scheduled time convenient to both parties. Keep in mind that an appeal has the potential to raise or lower your grade.
- Midterm grades will be sent individually to your RPI email account. However, you may request grades at any time.

Grade	Total Points	Expectations
A	100 – 93	Excellent: consistent effort, timely, aesthetic and conceptual/intellectual
A -	92.99 – 90	
B +	89.99 – 87	
B	86.99 – 83	Good: effort, timely, aesthetic or conceptual/intellectual
B -	82.99 – 80	
C +	79.99 – 77	
C	76.99 – 73	Satisfactory: some effort, timely
C -	72.99 – 70	
D +	69.99 – 67	
D	66.99 – 60	Passable: little effort
F	59.99 – 0	Failure

Academic Integrity

Student-teacher relationships are built on trust. Students must trust that teachers have made appropriate decisions about the structure and content of the courses they teach, and teachers must trust that assignments that students turn in are their own. Acts which violate this trust undermine the educational process. The Rensselaer Handbook of Student Rights and Responsibilities defines various forms of Academic Dishonesty and you should make yourself familiar with these.

All work produced in this course must be original and created by the student. First infraction will result in a failure for the course and a report to the Office of the Dean.

Collaboration

Collaborative work and discussion is encouraged. Instructor must be notified of students' intention to collaborate on assignments well ahead of that assignment's deadline. Instructor will determine whether or not collaboration will be allowed. Upon assignment completion, there must be documentation of each member's contribution to the finished assignment. The instructor reserves the right to award members of the collaboration different grades.

Project Assignment Schedule:

Projects are due on the date that matches the end of their time block. For example, the first assignment “Character FX” is due Feb 13th. Readings are supplied for students’ use in relation to project assignments. Discussion about readings will not occur unless otherwise notified during the class time in which they are assigned.

Day	in Class		EMPAC
19-Jan	Intro, Baking	Character FX 25%	Jan 27, 28 - Tesseract Feb 1 - Juliet Lauro
23-Jan	Rigging		
26-Jan	Rigging		
30-Jan	Skinning, Blend Shapes		
2-Feb	nCloth		
6-Feb	nHair		
9-Feb	Work in Class		
13-Feb	Character FX Critique		
16-Feb	nDynamics	Goldberg 25%	
21-Feb	nParticles		
23-Feb	Basic Houdini		
27-Feb	Houdini Dynamics		
2-Mar	Shawn to GDC		
6-Mar	Work in Class		
9-Mar	Goldberg Critique		
13-Mar	Spring Break	Procedural 25%	Mar 30 - FIELD
16-Mar	Spring Break		
20-Mar	Houdini Proceduralism		
23-Mar	Houdini Assets		
27-Mar	Houdini to Unity, Unreal, Maya		
30-Mar	Houdini Shader Networks		
3-Apr	Work in Class		
6-Apr	Critique Houdini Asset		
10-Apr	Houdini Destruction	Crumble 25%	
13-Apr	Houdini Destruction		
17-Apr	Houdini Shade and Render		
20-Apr	TBA		
24-Apr	Work in Class		
27-Apr	Work in Class		
1-May	Critique Crumble		

Changes to syllabus may be made at instructor's best discretion with notification to the student