Syllabus for CMPM25 Winter 2019
Version 20190108; changes from v20190105 are highlighted

Instructor information
My name is Chris Yonge (pronounced Young) and my UCSC email is cyonge@ucsc.edu. There is a class folder at https://users.soe.ucsc.edu/~yonge/ as well as Canvas that will be populated through the quarter with handouts and other resources; currently these mostly relate to CMPM25 when it was an introduction to Blender.

I’m a Santa Cruz digital modeler, animator, and designer and have run an independent consultancy (www.studiocruz.com) since 2002. I have taught two classes of CMPM25 each year since 2011. CMPM26, the follow-up class, has run in Winter or Spring each year since 2013. I also teach the fundamentals of 3D and 2D animation at Cabrillo College using Blender, Photoshop, and Animate (formerly Flash).

Since I am adjunct (part time) faculty and run a business I am generally only on campus the day of classes. I will be in my office MW from around 3:00 pm; this is Room 389 in BE2. However, please arrange the time before through email so that I can be sure to be there or let you know if not.

For general enquiries relating to the class first contact our Teaching Assistant Hadiseh Gooran (hgooran@ucsc.edu). If necessary she can forward them to me.

Purpose
This is an introductory course in the theory of 3D digital modeling, the use of Maya to develop polygonal and NURBS (smooth surfaced) models, and of professional animation and studio practice. Emphasis will be placed on developing skills for accurate communication and creative exploration. We will use Maya and an image editor of your choice (Photoshop is recommended, but any open source layer based digital painting program like Gimp (https://www.gimp.org/) or Krita (https://krita.org/en/) will do). We may look at video editing in After Effects, though knowledge of this is not required.

Learning Objectives
Learn the technology and techniques of basic 3D computer based modeling and figure rigging
Learn the basics of developing a professional workflow for independent and collaborative work
Learn the fundamentals of animation technology and the communication of ideas
Understand the interface and process of making Maya projects

Student Learning Outcomes
Be familiar with the basics of the Maya interface with its major tools and options
Be able to make a range of simple models with textures and rigging
Understand the techniques required to light and render scenes
Be able to make images and edited animations to communicate concepts

Prerequisites for CMPM25
General computer literacy in Windows (or Mac); no artistic ability is required. Maya is available for Mac OS but note that we will not specifically cover the those slightly different key shortcuts in CMPM25.
**Additional material and equipment**

Please be aware that Maya is quite demanding upon hardware resources; if you have a low specification or older computer you may find Maya runs too slowly or unreliably to be usable. Maya 2018.4 is installed on all the Win/PCs at the BE109 lab, however, and has also been installed on all the Windows PCs at the Science Library; you may need to use these to complete the study and assignment requirements for the class. Note that you should register with Autodesk to receive an academic copy of the **full** Maya installation; the alternative of Maya LT, even if purchased, will **not** allow you to complete the required assignments.

Since Maya is specific to a class, the shortcut to launch it from a lab terminal is in a class folder; to run the program do the following after logging in:

1. Open the "Class Folders" folder on the Desktop
2. Open "Computational Media" folder
3. Open "CMPM 25" folder

The PCs run Windows 7 64-bit. All are configured the same way at all labs; you login with your CruzID and Blue password. Learning Technologies manages all public computers in the libraries (McHenry, and Science and Engineering) and the Windows PCs in the libraries are configured in the same way as lab computers. You can find more information at: [http://its.ucsc.edu/computer-labs/](http://its.ucsc.edu/computer-labs/)

Temporary user data files can be saved to the Desktop but permanent copies will need to be saved elsewhere. Users can save or copy files to their UCSC Home Directory which is mapped as "X:" on the PCs or use a USB Flash Drive or email.

**IMPORTANT:** wherever you work you MUST back up your work on at least two storage devices, such as another computer’s hard drive, USB hard drives (not Flash drives), optical CD or DVD media, etc. Please do not keep your work solely on one device; copy it to another one as soon as you can. This advice goes for all your computer-based work at UCSC and elsewhere. In Fall 2018 several students lost work – and dropped several letter grades – because they relied on a single backup device which did not work properly when their primary computer was damaged or lost.

**Classes**

Classes are held in Thimann Lecture Hall 3 from 5:20 to 6:55 pm Mondays and Wednesdays; there will be an animation theater for around ten minutes before the start of class, depending on how long the previous class stays in the space. Lectures will be based around digital modeling and animation demonstrations, explanation of theory, and examples. They will be recorded for review purposes but this should not be used as an excuse to miss all or part of the class. You will find the videos at [https://webcast.ucsc.edu/](https://webcast.ucsc.edu/); use the login **cmpm-25-1** and the password **cmpm25winter19**

**Submitting your Homework Assignments**

All homework assignments should be submitted as Maya zipped project files and .jpg images to Canvas. Files should be named LastName_FirstName_HW# and with the appropriate extension such as .zip, .jpg, or .doc. All homework should also be saved on your own media and should only be deleted after you have verified your assignment grade. **An example using my name for a combined Homework 4 image and animation file would be Yonge_Chris_HW4.zip and Yonge_Chris_HW4.jpg.** If the assignment calls for several images, number them in sequence at the end of the name, before the .jpg. Capitalization isn't important but the underscores are. Note that if you upload a file without a name, it may be misplaced or not graded.

**Assignment & Project Due Dates**

The due dates for all assignments, tutorials, and projects will be specified in Canvas. You will have at least two weeks to complete a homework assignment. Projects and exam questions will be based on material that has been covered in class, in the class notes, and in PDF handouts. There are four homework assignments, for a maximum of fifteen points each, and graded according to the rubric. Note: please read the rubric to know how to best spend your time. Homeworks add up to sixty points.
There are two forty question multiple choice examinations, for a maximum of ten points each, giving eighty points total. Finally, there is a long project at a maximum of twenty points – total one hundred points. Note that the long project must be submitted on the specified due date; this is before Finals Week, and is chosen so that not only you have as much time as possible to complete it but your and your student graders have time to revise without distractions for Finals. Neither they nor I can grade late work due to other commitments at that busy time of the quarter. So start thinking about and then working on your Long Project as soon as possible and preferably submit it a week or more early. Late work may only be accepted for medical reasons with a doctor’s certificate.

**Evaluation**

Minus grades are narrower than standard grades since their purpose is to be available for students who just miss the standard A or B grade.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>95% or over</td>
</tr>
<tr>
<td>A</td>
<td>90-94.9%</td>
</tr>
<tr>
<td>A-</td>
<td>87-89.9%</td>
</tr>
<tr>
<td>B+</td>
<td>82-86.9%</td>
</tr>
<tr>
<td>B</td>
<td>75-81.9%</td>
</tr>
<tr>
<td>B-</td>
<td>73-74.9%</td>
</tr>
<tr>
<td>C+</td>
<td>65-72.9%</td>
</tr>
<tr>
<td>C</td>
<td>60-64.9%</td>
</tr>
<tr>
<td>D</td>
<td>50-59.9%</td>
</tr>
</tbody>
</table>
| F     | <50%                 | this is technically a pass, but a D will not satisfy a major or GE requirement
|       |                      | this is a failing grade

You can also choose to receive credit with a Pass/NoPass option, but this is to be discussed with your faculty academic adviser. You have to choose within a certain time after the start of the quarter; this may vary with your major. There is a limit to how many of your credits can be earned on a P/NP basis.

Cases of hardship (for example illness or injury) may qualify for a Deferred Grade, in which case you must submit missing material by the end of the following quarter. For other questions refer to Undergraduate Advising at [http://advising.ucsc.edu/](http://advising.ucsc.edu/).

The student roster is divided into groups according to the number of graders; in the case of Winter 2019, this is six. To minimize individual grading styles a different group of assignments is given to each grader for each homework and the Long Project.

**Accommodations**

If you qualify for accommodations because of a disability, please submit your Authorization Letter from the Disability Resource Center (DRC) to me as soon as possible, preferably within the second week of Session. Contact DRC at 831-459-2089 or by email at drc@ucsc.edu for more information.

**Labs**

There are five sections per week, starting the second week of the quarter. They will be held in BE109 at the following times. Your attendance at labs is recommended, being the only time when you can receive individual instruction. There will be no labs in the first week of classes, the week before Finals Week, or Finals Week, again so that you and your grader/tutors can prepare or revise. There are also two UCSC holidays, and again there will be no labs those days.

- Monday 9:00 – 10:45 am Jelica, Yuqi
  (There are no labs on 1/21, Martin Luther King holiday, or on 2/18, Presidents’ Day)
- Tuesday 11:00 – 12:45 am Dina, Hadiseh (TA)
- Wednesday 9:00 – 10:45 am Jelica, Yuqi
- Thursday 9:00 – 10:45 am Hadiseh
- Thursday 11:00 am – 12:45 pm Dina, Hadiseh

**Miscellaneous**

Please note that all digital modeling work that you submit for homework assignments and the long project must be entirely made by you. You can download images for textures. Downloading 3D models from online sources will result in your being failed for the class and charged with academic dishonesty. This happened to someone in CMPM25 in Fall 2017. A simple and straightforward model, well made
by you according to industry conventions and the requirements of the assignment, will get you a good grade. Don’t worry if the figure is cartoonish or looks badly modeled and/or wrong to you; this is not an art class and grading will not take account of that. As always, look at the grading rubric for what to do.

**Classes**

*Note that content may change and/or move during the quarter. Examination dates and times are fixed, however, and you must be present to receive a grade. There will be 14 teaching sessions this quarter along with two reviews, two exams, two holidays, and one day that I’ll be out of town.*

CMPM25Winter2019_01
**Monday 7 January 2019**
Introduction to CMPM25. The history and uses of 3D modeling and animation.

CMPM25Winter2019_02
**Wednesday 9 January 2019**
Introduction to Maya. Maya’s interface and conventions. Polygonal modeling.

CMPM25Winter2019_03
**Monday 14 January 2019**
Polygonal modeling and subdivision in Maya.

CMPM25Winter2019_04
**Wednesday 16 January 2019**
NURBS modeling
Long Project issued

**Monday 21 January 2019**
Martin Luther King Day – no class

**Wednesday 23 January 2019**
Class is canceled as I will be out of town

CMPM25Winter2019_05
**Monday 28 January 2019**
NURBS editing
Homework 1 issued

CMPM25Winter2019_06
**Wednesday 30 January 2019**
Materials, lighting, and UVs

CMPM25Winter2019_07
**Monday 4 February 2019**
Cameras and rendering
Homework 2 issued

**Wednesday 6 February 2019**
Midterm examination review

**Monday 11 February 2019**
Midterm examination
HW1 due
Character design

Monday 18 February 2019
Presidents’ Day – no class
HW2 due; HW3 issued

Wednesday 20 February 2019
Character modeling 1 – body and limbs

Monday 25 February 2019
Character modeling 2 – head and UV unwrapping
HW4 issued

Wednesday 27 February 2019
Rigging
HW3 due

Monday 4 March 2018
Cloth simulation

Wednesday 6 March 2018
Animation and editing
HW4 and Long Project due

Monday 11 March 2018
Demo reels and portfolios

Wednesday 13 March 2018
Review for final examination

Friday 22 March 2018 – 8:00 am – 11:00 am
Final examination
Note the non standard day and time of eight in the morning on Friday in Thimann 3. Examination times are listed at https://registrar.ucsc.edu/soc/final-examinations.html. I will be present in the lecture room until the end time of 11:00 am even if everyone has finished and gone so if you arrive late you can still take as much of the examination as you have time for up to the 11:00 am deadline.

20190108 – Chris Yonge