Engineering Movies and Music – Spring 2019

*Course Description*

Engineering is just as much creative (and fun!!), as it is technical. This project-based course aims to highlight the creative aspect of engineering by applying it to music and movie production. The goal is to learn applicable skills in design and the entertainment industry through discussion and programs, such as Maya, REAPER, iMovie, and MaxMSP.You will have projects using these programs and will complete the class with an understanding of when and how these programs work together in the entertainment industry and how closely linked engineering and the arts truly are.

*Prerequisites, Course Policies & Enrollment*

Some knowledge in DAW software and/or movie making software is recommended but not required. I expect students who enroll in this class to have a deep interest in learning about career opportunities and required skills in the entertainment industry. A maximum of 30 students may enroll in the class. All years are welcome!

Please feel free to email me with any questions at [mak4ab@virginia.edu](mailto:mak4ab@virginia.edu).

*Course Instructor*

Marcha Kiatrungrit: 4th Year Engineering Science (CS and Astronomy) & Music majors

About me:

A lot of my experience comes from animation, film, songwriting, and music technology courses at UVA. Over the summer, I worked at Technicolor at Paramount Studios in Los Angeles as a Post-Production Sound Intern, where I worked closely with the producers on [*Green Book*](https://www.imdb.com/title/tt6966692/). I also interned at the Library of Congress as an Assistant Audio Engineer, where I worked on digitizing and restoring old magnetic tapes and vinyl records. I am also on the Figure Skating team at UVA, so let me know if you’re interested in learning about that!

**Office hours:** by appointment (email [mak4ab@virginia.edu](mailto:mak4ab@virginia.edu))

*Professors of Contact*

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*Required Materials/Technology*

FREE downloads of:

1. [REAPER](https://www.reaper.fm/download.php)
   * Audio editing software AKA digital audio workstation (DAW)
2. iMovie
   * I am looking into finding a Mac lab we can use for this tutorial
3. [Maya](https://www.autodesk.com/education/free-software/maya) + motion capture
   * Animation software
   * Motion capture tutorial will be at the Robertson Media Center on 3rd floor of Clemons Library
4. [MaxMSP](https://cycling74.com/downloads/)
   * Visual programming language for music and audiovisual projects
   * More info about Max [here](https://cycling74.com/products/max/)

*Grading Policy*

* Attendance: 25%
* Homework: 25%
  + REAPER, Maya, iMovie, and Max projects
  + Other small assignments like filling out surveys, questionnaires, or finding audio/movie files to use
* Final project: 35%
  + Use at least two of the programs that we have learned this semester and make something at least one minute long
* Discussion/participation: 15%

*Schedule*

Week 1: Introduction, download REAPER & Maya

* **Please bring your laptop! ☺**
* Go over programs that we will use in this class
* Go over projects and syllabus
* Download [REAPER](https://www.reaper.fm/download.php) and [Maya](https://www.autodesk.com/education/free-software/maya)
* Questions?
* **Homework**: Bring an audio (or video w/audio) clip you want to edit to class. Please have it downloaded onto your computer ready to use as an audio or video file.

Week 2: REAPER

* REAPER (music editing) tutorial pt. 1
* **Homework**: begin REAPER project

Week 3: Discussion

* The role music plays in our lives (Why do we love music?)
* Continue REAPER tutorial pt. 2
* **Homework**: REAPER project due next week!

Week 4: Maya

* **REAPER project due**
* Maya tutorial pt. 1
* **Homework**: begin on Maya project

Week 5: Maya

* Maya tutorial pt. 2
* **Homework**: work on Maya project

Week 6: Motion Capture

* Class will be on Clem 3 today!
* Tutorial on how to use motion capture in Robertson Media Center
* **Homework**: finish Maya project & fill out survey for discussion topic (week 8)

Week 7: iMovie

* **Maya project due**
* Class will be in Mac Lab (TBD location)
* - tutorial on iMovie
* **Homework**: begin on iMovie project

Week 8: Discussion (topic of choice)

* We will have a discussion on a topic of your choice from the survey sent out two weeks ago
* **Homework**: finish iMovie project

Week 9: MaxMSP

* **iMovie project due**
* MaxMSP tutorial pt. 1
* **Homework**: begin Max project

Week 10: MaxMSP

* MaxMSP tutorial pt. 2
* **Homework**: finish Max project

Week 11: Final project workshop & questions day

* **Max project due**
* Go over final project
* Work on project in class
* Ideas? Questions?
* **Homework**: final project!

Week 12: Share final project!

* **Final project due**
* Share your projects ☺
* Hopefully food.