

# Intro to Programming for Digital Media and Computer, MUCO 471

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## Course Syllabus

### Instructor:

Instructor: Tom Hall    Email: [t.hall@usc.edu](mailto:t.hall@usc.edu)

### Course Description:

This class is geared towards composers and musicians as well as students with an interest in programming and some musical background). It focuses on using the computer to create generative music and to enable the creation of multimedia interactive performance, composition, and improvisation environments. Students will learn the graphical programming language Max (formerly Max/MSP, developed by Cycling '74) and supplement this with other computer/electronic music tools to implement creative projects. Topics include synthesis techniques, video/graphics, multi-channel audio, tracking methods, aesthetics, historical and current repertoire, software architecture, performance organization, and documentation strategies. The course focuses on assignments to solidify concepts covered in class. All work is iteratively geared toward completing a single final creative project/ Max patch.

### Course Objectives:

- Learn MaxMSP, Max for Live, Jitter
- Develop skills in Max/MSP to create music, audio, sequencers, DSP effects, MIDI tools and video applications. Use Max/MSP to study audio synthesis and processing algorithms.
- Learn the basics of Jitter - real-time video, graphics, and matrix processing.
- Investigate multi-channel audio and manipulation techniques.
- Investigate techniques, working methods, and interactive media performance composition aesthetics.
- Develop knowledge of repertoire, including contemporary and historical works of interactive composition and performance.

### Materials Required:

- A licensed copy of **Max 9** on a personal computer. Available at <https://cycling74.com/shop/students>
  - \$250 Max Academic Permanent Licenses (best value)
  - \$90: Max Academic Annual Subscription
  - \$12.99/month Subscription
  - All other software is optional and should be purchased at the student's discretion.

### Assessment Measures:

50% Checkpoints/Homework  
40% Programming Assignments  
10% Class Participation