

# Syllabus for Music 346: Computer Music Programming Design

**Note: this syllabus is provided for information only and is subject to change through the first class meeting.**

Mondays 3:10-4:00 & 4:10-5:00, Wednesdays 3:10-4:00pm

Instructor: Dr. Christopher Hopkins [hopkinsc@iastate.edu](mailto:hopkinsc@iastate.edu)

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Course office hours (music computer lab): M/W 2:10 pm

## Course Prerequisites and Suggested Prior Experience

**[Music 246 \(https://canvas.iastate.edu/courses/71759/pages/music-246-introduction-to-creative-digital-music\)](https://canvas.iastate.edu/courses/71759/pages/music-246-introduction-to-creative-digital-music)** (Introduction to Creative Digital Music) or permission of instructor. To obtain permission of instructor, students' prior experience must include in-depth knowledge of MIDI encoding in addition to concepts used in MIDI tracking, event processing and automation in a digital audio workstation. An equivalency exam will be given.


Prior experience with computer programming (coding or otherwise) is not required.

However, prior experience with logical thinking in terms of constants, variables, and simple arithmetic functions is highly suggested, which can be satisfied by recall of basic concepts introduced in high school algebra. Prior musical experience is satisfied by the course prerequisite, Music 246 which itself required a knowledge of music theory fundamentals.

The implicit prerequisite is an active interest in the nature and goals of the subject as described below.

## Course Description

Music 346 is a course in techniques and concepts of applying computer

programming to the generation of music. We use graphical programming interface ([Max 8](https://cycling74.com/products/max) , <https://cycling74.com/products/max>) to generate musical patterns into melodic-rhythmical compositions defined algorithmically. The goal is to create music using data (which may be live-generated, live-performed, or retrieved from storage) transformed by programmed rules we design for the composition of pitch, rhythm, and timbre.

## Learning Outcomes

Upon completing this course students will understand computer programming designs for modeling fundamental musical structures and creating computer-based musical compositions and performances. Students will become proficient in the use of a visual programming environment to generate, process, and control musical data and device-interfaced events in musically meaningful ways.

## Course Format

The course will include participatory lecture-demonstration in programming techniques related to musical concepts, completion of practical lab exercises, and development of an individual portfolio of small to large creative projects on a prescribed schedule.

## Course Materials and Equipment

Note: all materials and equipment are provided in the music computer lab, which has ample open hours to complete assignments. Students who choose to complete assignments using their own licensed software and equipment must reliably maintain these without expectation of special accommodation in the nature of assignments or submission requirements.

Algorithmic/Generative Composition: [Max 8](https://cycling74.com/products/max) , <https://cycling74.com/products/max> (supplied in the music computer lab)

A MIDI-controller keyboard with standard controllers (minimum: pitch bend, modulation wheel, program change). Lab keyboards are M-Audio Axiom49. Note: digital pianos and launch pads will not meet the course requirements.

# Course Policies

## First Week Class Attendance

Attendance for the first week of classes is required *except by prior arrangement*. Classes during this first week include an essential orientation to the operation of lab equipment. Students will complete assignments that confirm their ability to use the required course materials (see above) and computer systems, and thus confirm that they will be able to continue in the course. **Note: for Spring 2024 this policy is adjusted to include January 22-24.**

## Use of Required Software

Because in-class discussions, lab work, and presentations need to be based on a common vocabulary and consistency in practical techniques, students may not substitute alternate software for assignments, including creative projects. All submitted projects must be software-specific project files that are open to review of every aspect of editing, processing, and mixture using the course software. So for example, students may not complete creative projects using other software and merely turn in a rendered audio file.

In the case of using the course-defined software under their own licenses, students are cautioned to take particular care not to update their own systems to a version in advance of that currently supported by ISU. Note that this may not be the latest update. In general, lab software updates are not made mid-semester.

## Completion of Assignments

Assignments will be considered complete after they are submitted to Canvas and confirmed to open on the instructor's system. Files required for presentation of the project must actually open and run for the project to be considered completed and assigned a passing grade. Significantly for Pro Tools, audio files must be included and properly linked to project files.

Unexcused late work will not be accepted.

## **Prep Week, Final Exam, and Grade of Incomplete**

Two graded quizzes will be given during Prep Week. These are merely work in progress reports for the final project and do not required study time.

Final Projects will be due at the beginning of the regularly scheduled final exam period for the course. If a valid excuse exists for the failure to submit the final project as scheduled, the instructor will determine the method of compensation in calculating the grade for the course.

A grades of incomplete (I) will be granted only in accordance with university policy. In general, grades of incomplete may be granted in cases of medical or family emergency and must be supported by a valid written excuse. Students may not be failing the course at the time of requesting a contract for an I grade.

## **University Syllabus Statements**

See the link to Syllabus Statements for the standard required and recommended statements. Nothing has been added specifically for this course.