



**NYU**

**TANDON SCHOOL  
OF ENGINEERING**

# Integrated Design & Media

## **DM-GY 6113 A, Sound Studio**

### **INSTRUCTOR INFORMATION**

- Craig Fahner and R. Luke DuBois
- 370 Jay Street, 332 (Craig) and 353 (Luke)
- Tel: 646 997 0719 (Luke)
- Craig: Wednesdays 11-1pm, ([by appointment](#)), 370 Jay Street Room 332,  
Luke: Tuesdays 12-2pm ([by appointment](#)), 2 MTC 824
- [cef9489@nyu.edu](mailto:cef9489@nyu.edu) & [dubois@nyu.edu](mailto:dubois@nyu.edu)

### **COURSE INFORMATION**

- DM-GY 6113 A, Spring 2026
- Sound Studio
- This course introduces IDM students to contemporary techniques and issues in audio, sound and musical research. The class covers digital and analog signal processing, synthesis, musical informatics and interaction design as it applies to contemporary music production, post-production and live performance. The course will focus on work in Max/MSP for a variety of contexts (including web audio and embedded systems), as well as the use of the analog synthesizers in the IDM audio lab and the multi-channel audio and media presentation system in the 370 Jay Street media commons. Students are expected to achieve competence in a number of technologies and to create brief studies based on them.
- 3 credits, 1x per week
- Tuesdays 2pm - 4:50pm
- 370 Jay Street, Room 307

## **COURSE OVERVIEW AND GOALS**

This course investigates techniques in sound art in acoustic, electric, analog electronic, and digital domains. Taking as a point of departure practices drawn from avant-garde composition; electronic, computer, and contemporary experimental music; instrument and interface design; and cinematic sound design, the course offers a survey on the ways in which sound is made through physical, electrical, and digital means, and the myriad ways in which these technologies are combined to create audio-based work. Students in the course will be encouraged to develop a regular, everyday practice of creating sound works, either for fixed media, live performance, or interactive media. A survey of tools will be explored, including audio recording technology, analog synthesizers, live electronics, and digital synthesis and composition environments.

UPON COMPLETION OF THIS COURSE, STUDENTS WILL BE ABLE TO:

- Understand the theoretical principles of audio, in the physical, analog (electric and electronic), and digital domains.
- Understand the common tools and techniques for working with sound, as understood in academic research and industry.
- Learn best practices for sound design, recording, synthesis, and signal processing.
- Experiment with different creative approaches for working with sound within the context of fixed and interactive media.

# COURSE REQUIREMENTS

## CLASS PARTICIPATION

Everyone needs to show up and participate in class. More than three unexcused absences will lose you a letter grade.

## SHORT PROJECTS

Everyone needs to complete five short projects, presented in class and published online on the day they are due.

## MIDTERM

Everyone needs to complete a midterm project in which they contribute to a collaborative instrument for an exhibition in the IDM Gallery at 370 Jay St.

## FINAL

Everyone needs to create a final sound-based project. This project could be a piece of software, a piece of hardware, a piece of music, an installation, or anything in between.

## GRADING OF ASSIGNMENTS

For this class, there will be a number of short projects, a midterm critique, and a final project that you will present to the class. The grading breakdown is as follows:

<b>Assignments/Activities</b>	<b>% of Final Grade</b>
Class participation	20%
Five Short Projects	35%
Midterm Project	20%
Final Project	25%

## LETTER GRADES

Letter grades for the entire course will be assigned as follows:

<b>Letter Grade</b>	<b>Points</b>	<b>Percent</b>
<b>A</b>	4.00	Example: 92.5% and higher
<b>A-</b>	3.67	Example: 90.0 – 92.49%
<b>B+</b>	3.33	Example: 87.5% - 89.99%
<b>B</b>	3.00	Example: 82.5% - 87.49%
<b>B-</b>	2.67	Example: 80% - 82.49%
<b>C+</b>	2.33	Example: 77.5% - 79.99%
<b>C</b>	2.00	Example: 72.5% - 77.49%
<b>C-</b>	1.67	Example: 70% - 72.49%
<b>D+</b>	1.33	Example: 67.5% - 69.99%
<b>D</b>	1.00	Example: 62.5% - 67.49
<b>D-</b>	.67	Example: 60% - 62.49%
<b>F</b>	.00	Example: 59.99% and lower

## HOW TO ACCESS YOUR GRADES

Midterm progress reports and project feedback will be made available on Brightspace, and final grades will appear on Albert.

# COURSE SCHEDULE

## TOPICS AND ASSIGNMENTS

Week/Date	Topic
Week 1 January 20	<b><i>What is sound?:</i></b> <ul style="list-style-type: none"><li>• Overview of class syllabus</li><li>• Introduction to sound</li><li>• Install and experiment with Max</li><li>• Listening assignment</li></ul>
Week 2 January 27	<b><i>Recorded Sound:</i></b> <ul style="list-style-type: none"><li>• History of recording technology</li><li>• Microphones</li><li>• Recording media</li><li>• Sampling</li><li>• Playing and sequencing samples in Max</li><li>• Microphones</li><li>• Field Recording Assignment</li></ul>
Week 3 February 3	<b><i>Synthesized Sound:</i></b> <ul style="list-style-type: none"><li>• Oscillators, envelopes, modulation</li><li>• Deep dive on the ARP 2600 Analog Synthesizer</li><li>• Synth jam assignment</li></ul>
Week 4 February 10	<b><i>Signal Processing:</i></b> <ul style="list-style-type: none"><li>• Effects</li><li>• Reverb, delay</li><li>• Time-domain vs amplitude-domain processing</li><li>• Compression</li><li>• Analog vs digital effects</li><li>• Max-based effect assignment</li><li>• Midterm Project introduction</li></ul>
Week 5 February 17	<b><i>NO CLASS: LEGISLATIVE MONDAY</i></b> <ul style="list-style-type: none"><li>• Off-schedule electronics workshop?</li></ul>

Week 6 February 24	<b><i>Control and actuation:</i></b> <ul style="list-style-type: none"> <li>• MIDI, CV</li> <li>• Keyboards, alternative controllers</li> <li>• Midterm assignment check-in</li> </ul>
Week 7 March 3	<b><i>Circuits:</i></b> <ul style="list-style-type: none"> <li>• Microcontrollers</li> <li>• Midterm assignment studio time - building and testing control circuits</li> </ul>
Week 8 March 10	<b><i>Midterm assignment install time:</i></b> <ul style="list-style-type: none"> <li>• Installing our collaborative instrument</li> </ul>
<b>March 17</b>	<b><i>NO CLASS: SPRING BREAK</i></b>
Week 9 March 24	<b><i>Midterm crit and performance:</i></b>
Week 10 March 31	<b><i>Spatial audio:</i></b> <ul style="list-style-type: none"> <li>• Spatial audio workshop in 370J Audio Lab</li> </ul>
Week 11 April 7	<b><i>Daisy workshop:</i></b> <ul style="list-style-type: none"> <li>• Put together a <a href="#">Daisy</a> prototype</li> </ul>
Week 12 April 14	<b><i>Synesthesia:</i></b> <ul style="list-style-type: none"> <li>• Audio visualization workshop in Video Lab</li> <li>• Final Project discussion</li> </ul>
Week 13 April 21	<b><i>Music Theory and Composition:</i></b> <ul style="list-style-type: none"> <li>• Final project check-in</li> </ul>
Week 14 April 28	<b><i>Final project pre-presentation meetings</i></b>
Week 15 April 28	<b><i>Final project critiques</i></b>

# COURSE MATERIALS

## EXPECTATIONS FOR WORK OUTSIDE THE CLASSROOM

Students should expect to spend roughly 5 hours each week on supplemental work in this course. This may include reading assignments, writing, exam preparation, research, homework assignments, building, writing code, study time, unsupervised lab work, unsupervised group work, etc.

## REQUIRED TEXTBOOKS & MATERIALS

- This class assumes you can make things on the computer. We'll be doing most of the work using Max/MSP, a visual programming language for working with real-time media:

<https://cycling74.com>

- Specifically, we will be looking at using Max as a DSP environment for the Electro-Smith "Daisy" Platform:

<https://www.electro-smith.com/daisy>

- Code that we create in class (as well as this syllabus) will be published on the class GitHub:

<https://github.com/IDMNYU/Sound-Studio-S2026>

## OPTIONAL TEXTBOOKS & MATERIALS

- Additional materials will be linked on the GitHub or the course BrightSpace

## RESOURCES

- **Access your course materials:** <https://idmnyu.github.io/Sound-Studio-S2026/>
- **Databases, journal articles, and more:** [Dibner Library](http://library.nyu.edu) (library.nyu.edu)
- **Assistance with strengthening your writing:** [NYU Writing Center](http://nyu.mywconline.com) (nyu.mywconline.com)
- **Obtain 24/7 technology assistance:** [IT Service Desk \(NYU IT\)](http://nyu.edu/it/servicedesk) (nyu.edu/it/servicedesk)

# COURSE POLICIES

## ATTENDANCE AND TARDINESS

Your attendance is important. Notify us of all absences prior to class. Each unexcused absence after your first will impact your final grade by a third of a letter (ex. one unexcused absence will drop a final grade of A- to B+, two unexcused absences would drop that A- to a B). If you have 5 or more unexcused absences, you fail the course automatically.

If you're more than 10 minutes late for class, you will be considered tardy. Two instances of tardiness = one unexcused absence.

Things happen and we all slip up sometimes. If you miss a class – let me know ASAP. I am generally understanding, but I always want to know what is going on.

## LATE ASSIGNMENT

Weekly exercises will not be accepted past their due date unless a valid reason has been discussed in advance with your instructor.

Every day the final project or final project proposal is overdue, it will lose a letter grade. If the final project is turned in more than 3 days late, it receives an F. If you turn nothing in at all, you will receive a 0 for the assignment. Nobody wants that, so be sure to turn your work in on time. Anything is better than nothing.

## ACADEMIC HONESTY/PLAGIARISM

Violations of academic integrity are considered to be acts of academic dishonesty and include (but are not limited to) cheating, plagiarizing, fabrication, denying other access to information or material, and facilitating academic dishonesty, and are subject to the policies and procedures noted in the Student Handbook and within the Course Catalog, including the Student Code of Conduct and the Student Judicial System. Please note that lack of knowledge of citations procedures, for example, is an unacceptable explanation for plagiarism, as is having studied together to produce remarkable similar papers or creative works submitted separately by two students, or recycling work from a previous class.

Please review NYU Tandon's academic dishonesty policy (below) in its entirety. Procedures may include, but are not limited to: failing the assignment, failing the course, going in front of an academic judicial council and possible suspension from school. Violations will not be tolerated.

All work for this class must be your own and specific to this semester. Any work recycled from another, non-original source will be rejected with serious implications for the student.

Plagiarism, knowingly representing the words or ideas of another as one's own work in any academic exercise, is absolutely unacceptable.



NYU School of Engineering Policies and Procedures on Academic Misconduct (from the School of Engineering Student Code of Conduct)

*Introduction:* The School of Engineering encourages academic excellence in an environment that promotes honesty, integrity, and fairness, and students at the School of Engineering are expected to exhibit those qualities in their academic work. It is through the process of submitting their own work and receiving honest feedback on that work that students may progress academically. Any act of academic dishonesty is seen as an attack upon the School and will not be tolerated. Furthermore, those who breach the School's rules on academic integrity will be sanctioned under this Policy. Students are responsible for familiarizing themselves with the School's Policy on Academic Misconduct.

*Definition:* Academic dishonesty may include misrepresentation, deception, dishonesty, or any act of falsification committed by a student to influence a grade or other academic evaluation. Academic dishonesty also includes intentionally damaging the academic work of others or assisting other students in acts of dishonesty. Common examples of academically dishonest behavior include, but are not limited to, the following:

- *Cheating:* intentionally using or attempting to use unauthorized notes, books, electronic media, or electronic communications in an exam; talking with fellow students or looking at another person's work during an exam; submitting work prepared in advance for an in-class examination; having someone take an exam for you or taking an exam for someone else; violating other rules governing the administration of examinations.
- *Fabrication:* including but not limited to, falsifying experimental data and/or citations.
- *Plagiarism:* intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise; failure to attribute direct quotations, paraphrases, or borrowed facts or information.
- *Unauthorized collaboration:* working together on work that was meant to be done individually.
- *Duplicating work:* presenting for grading the same work for more than one project or in more than one class, unless express and prior permission has been received from the course instructor(s) or research adviser involved.
- *Forgery:* altering any academic document, including, but not limited to, academic records, admissions materials, or medical excuses.

Access the entire School of Engineering Student Code of Conduct here:  
[engineering.nyu.edu/academics/code-of-conduct](https://engineering.nyu.edu/academics/code-of-conduct)

## GENERATIVE TOOL USE IN THIS CLASS

Document Your Process And Use Of Generative AI When Completing Assignments Using Generative AI

- Save copies of each step to create a record that can be shared with your instructors to facilitate conversations about your work. For example, keep copies of your previous drafts before and after interacting with generative AI.

Ensure that your final work is your own and is not simply copied and pasted from a generative AI tool

- Your own style and voice should be evident.
- Simply rephrasing AI-generated content is not enough for it to be considered your own work! You must still apply your own critical and creative thinking to ensure learning.
- Foreground [intellectual virtues and beware of cognitive biases](#) from the [Open Inquiry Toolkit](#).

Fact-check and Cross-Verify Any Information You Use From Generative AI

- Note the [limitations of generative AI](#), most notably that content generated by AI may be biased, made up, inaccurate, not up to date, etc.
- Apply critical thinking at all times! It is important to fact-check and cross-verify any information generative AI gives you.
- Using generative AI is not the same as using a search engine.

Think for yourself

- Form your own perspectives and points of view. Do not rely solely on information generated by generative AI tools.

## ACADEMIC ACCOMMODATIONS

If you are a student with a disability who is requesting accommodations, please contact New York University's Moses Center for Student Accessibility (CSA) at 212-998-4980 or [mosescsa@nyu.edu](mailto:mosescsa@nyu.edu). You must be registered with CSA to receive accommodations. Information about the Moses Center can be found at <https://www.nyu.edu/csa>. The Moses Center is located at 726 Broadway on the 2nd floor.

If you are experiencing an illness or any other situation that might affect your academic performance in a class, please email the Office of Advocacy, Compliance and Student Affairs: [eng.studentadvocate@nyu.edu](mailto:eng.studentadvocate@nyu.edu).

## STATEMENT ON INCLUSION

The NYU Tandon School values an inclusive and equitable environment for all our students. I hope to foster a sense of community in this class and consider it a place where individuals of all backgrounds, beliefs, ethnicities, national origins, gender identities, sexual orientations, religious and political affiliations, and abilities will be treated with respect. It is my intent that all

students' learning needs be addressed, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. If this standard is not being upheld, please feel free to speak with me.

## RESOURCES FOR NON-CITIZEN STUDENTS

More than 40 percent of NYU students are international students. A smaller number are undocumented students, but many more come from mixed status families and communities. As a professor, I am committed to doing everything I can to ensure that every student, regardless of immigration status, is safe in this classroom. Following the recommendation of [the NYU chapter of the AAUP](#), I encourage students to seek free legal support and other resources through NYU's [Immigrant Defense Initiative](#). NYU IDI provides an [extensive list of updates and resources](#). Students may also consult the "[Know Your Rights](#)" information provided by the New York Immigration Coalition.