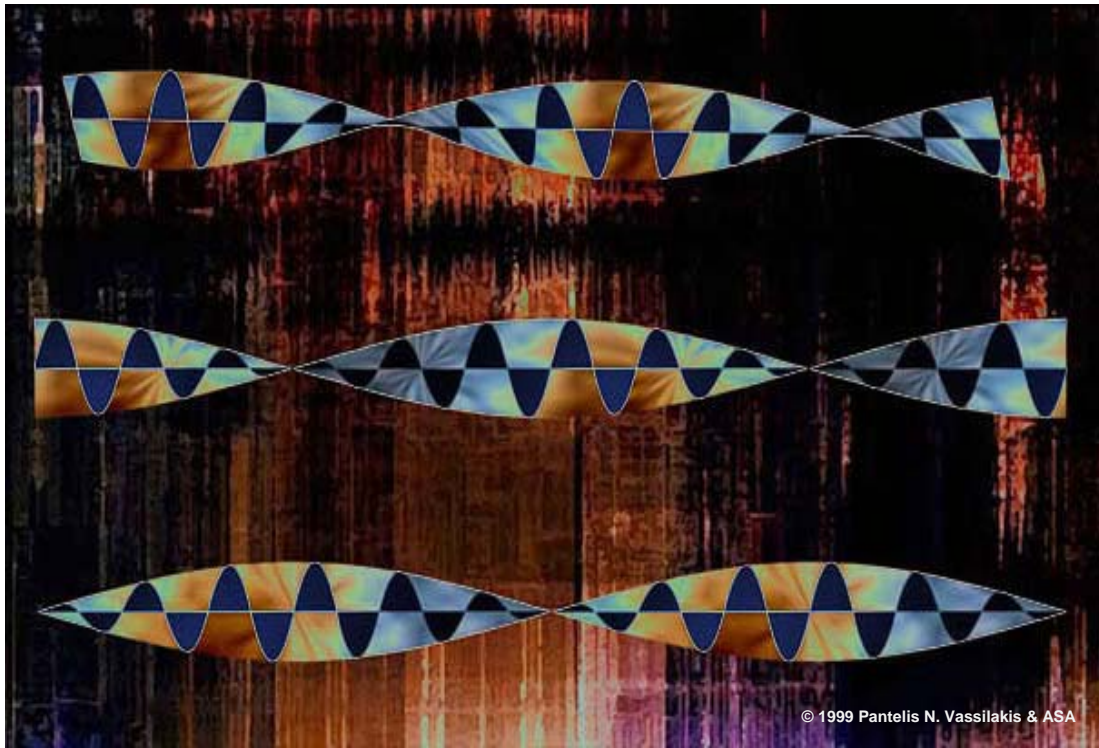


Department of  
**Audio Arts + Acoustics**

*Creating a sound world*

# Student Handbook



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create...  
change

audio arts  
+ acoustics

AT COLUMBIA COLLEGE CHICAGO  
AMPLIFY YOUR FUTURE!®



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## MESSAGE FROM THE CHAIRMAN

Dear Students,

I want to warmly welcome you to the Audio Arts + Acoustics Department and, whether you are new or returning, confirm to you that this is a genuinely great place to be!

Beyond dealing with the most versatile and visceral of senses and the most ubiquitous and evocative of sensations, what makes us truly special is our faculty. By joining our department you enter a remarkable team of accomplished professionals, artists, and academics who are dedicated to your learning and growth. From live and recorded sound design and engineering for music, theater, broadcast, multimedia, and sound art, to vibration and noise measurement and control, architectural acoustics, hearing studies, and design and management of audiovisual installations, our department offers expertise of which we are proud. Add to this our experienced staff members and outstanding facilities and it is easy to share my excitement.

No different from the rest of our team, my passion and curiosity for sound are longstanding. They have literally shaped my life as an artist, a scientist, and a professional and continue to do so. I trust it is a similar passion and curiosity that has brought you to us. We are committed to satisfying and further fueling your curiosity, nurturing your passions, and helping you become our colleagues. This will undoubtedly take commitment and hard work on your part as well, but we know you would not have it any other way. Your presence here requires a substantial investment and sacrifice from you and your families and entrusts your education and future in our hands. I assure you that we take your investment, sacrifices, and trust very seriously and guarantee that we will always strive to exceed your expectations.

This handbook introduces you to our Department, faculty, programs, and courses as well as to useful Departmental and College-wide information on scholarships, internships, campus employment, student organizations, studio policies, and more. Take time to scan through this resource and use it as a springboard for your eventual meetings with our faculty and staff. As a matter of fact, we invite you to visit regularly with us and sincerely hope you do so.

Before closing, I would like to share with you **two exciting curricular developments at our Department, effective Fall 2011.**

### ***a) Bachelor of Science Degree in Acoustics***

Following a year of research and administrative reviews, Columbia College President Warrick Carter approved on Wednesday, 3/9/2011, the Audio Arts + Acoustics proposal for a new Degree Major: *Bachelor of Science in Acoustics*.

This is an exciting development that responds to the needs of the acoustics industry and graduate education. It places our College at the cutting edge and provides students with the first undergraduate degree in acoustics and perception of its kind in the country.

This new program and curriculum grew out of the feedback by past graduates and their employers and/or graduate advisors, and has been specifically designed to a) address all deficiencies identified in our previous relevant curriculum/degree (including its designation as a Bachelor of Arts), b) retain a strong liberal arts component, c) emphasize acoustics' perceptual

dimension, and d) provide a degree path that will prepare our Acoustics students to compete successfully in the workplace against holders of Masters degrees in acoustics.

By getting this degree proposal approved, our Department made triple history: a) instituting the first undergraduate degree program in acoustics in the United States that also addresses issues of perception and cognition, b) instituting the first science degree in the College's more than 120-year history and c) making possible an undergraduate program that can compete head to head with the best acoustics graduate programs in the country, something already demonstrated by AA+A's strong recent presence at the 11/2010 [Pan-American/Iberian Meeting on Acoustics](#).

#### **b) New and Improved *Live and Installed Sound* Concentration of Study**

Two past concentrations of study (*Live Sound Reinforcement* and *Sound Contracting*) have now been re-designed, strengthened, and combined into a single concentration of study, "Live and Installed Sound." We are confident that this new concentration and curriculum will much better prepare you for success in this field, following graduation.

We implemented this change after a year-long research that involved surveying key figures in the Live and Installed Sound profession as well as our past alumni, many of whom currently hold leadership positions in major Live Sound and Sound Contracting US and International companies. Our surveys revealed that

a) Students of the two past concentrations who succeeded in the field were expected and able to use skills relevant to both concentrations and  
b) Key figures within the Live and Installed Sound Industry actively seek to hire individuals who can demonstrate competence in both Live Sound Reinforcement and Sound Contracting.

We trust you will find this change exciting and look forward to the opportunity to work together with you towards your transformation into one of our successful and respected colleagues.

Again, welcome to our Department and best of luck with your studies!



**Pantelis N. Vassilakis, Ph.D.**  
**Department Chairman, Associate Professor**  
**Audio Arts + Acoustics, School of Media Arts**  
**Columbia College Chicago**

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[www.acousticslab.org](http://www.acousticslab.org)

## DEPARTMENT OUTLINE

### Audio Arts + Acoustics

Creating a sound world

#### ***MISSION STATEMENT***

**As practitioners of sound arts and sciences, the faculty of the Audio Arts and Acoustics Department at Columbia College are committed to advancing the foundation, practice, and aesthetic criteria necessary to maintain and enhance our discipline as the principal medium of communication and personal expression.**

We are committed to offering our students the tools and the opportunities to build, reinforce, and maintain the fundamental knowledge and skills that are required for a successful career in a technologically intensive environment.

We believe that we must nurture a strong liberal arts component as an integral part of our program. We are dedicated to offering our students every reasonable opportunity to express their creativity in a fashion compatible with and complimentary to the academic standards of our department.

We are committed to our program's reputation among industry and other peer institutions; it is this commitment that drives our Department's growth. Hence, we encourage dialogue between our program and the industry, and we foster the growth of interaction between our students and their peers.

We pledge to actively promote the Mission of Columbia College Chicago by engendering an educational climate where the value of social and cultural diversity is recognized.

## **WHO WE ARE AND WHAT WE DO...**

Students, faculty, and staff of the Audio Arts + Acoustics Department study sound, the most omnipresent and evocative of sensations, and hearing, the most versatile and intuitive of senses.

We offer comprehensive undergraduate study, facilities, and expertise in

- live and recorded sound design, engineering, and production,
- environmental and architectural acoustics,
- vibration/noise measurement and control,
- hearing physiology and sound perception, and
- design and management of audio installations.

The single overarching learning goal underlying our department's mission is best stated as:

***"The Audio Arts + Acoustics Department provides students with the knowledge, skills, and artistic sensibility necessary to systematically and expertly control sound and sound structures."***

We accomplish our goal by exploring the sonic world from a variety of perspectives that include

- *Physics* – mechanics, acoustics, electronics, and the underlying basic mathematics
- *Physiology, Psychology, Aesthetics* – perceptual, cognitive, and cultural bases of hearing, making sense of, and evaluating sound
- *Technology* – the analog and digital resources used to capture, process, analyze, model, store, and/or distribute sound
- *Sound Art* – the creative bases of artistic expression in sound

Our students engage in a variety of media, technologies, practices, and aesthetics:

- sound production for music, sound art, cinema, broadcast, and multimedia
- sound synthesis and signal processing
- performance sound for live music, theater, dance, worship, and other cultural events
- sound system design for recording, performance, commercial, and civic spaces
- acoustical engineering for evaluation and design of physical or virtual spaces
- research on sound generation, perception, measurement, and control

A passion for sound has shaped our lives as artists, scientists, and professionals. As teachers, we focus our expertise and energy on student learning and development. If you aspire to become an expert in the art and science of sound, the Department of Audio Arts + Acoustics will provide you with the knowledge, skills, intellectual space, and resources necessary to accomplish your goal.

**Amplify Your Future!®**

**Website:** <http://www.colum.edu/aaa> **Facebook:** <http://tinyurl.com/aaa-department> **email:** [aaainfo@colum.edu](mailto:aaainfo@colum.edu)

## EXPECTATIONS

### **WE EXPECT OUR STUDENTS TO:**

- Be willing to enhance their critical thinking abilities and sense of aesthetics
- Be willing to demonstrate their knowledge to us in a variety of ways
- Realize that academe and the “real world” are mutually enriching
- Recognize the value of foundation knowledge
- Realize that their education must constitute their first priority
- Respect our knowledge and our experience
- Respect our privacy

### **STUDENTS CAN EXPECT US TO:**

- Be committed to high standards of academic excellence
- Maintain and enhance our professional stature
- Enhance the quality and the recognition of our program
- Outline and achieve clear objectives for each class
- Set forth and apply clear and objective testing guidelines
- Welcome their comments pertaining to teaching methods
- Be accessible to them for academic guidance and for advising
- Respect their thirst for knowledge and their enthusiasm
- Respect their privacy

## CONTACT AND COMMUNICATION INFORMATION

### DEPARTMENT OF AUDIO ARTS + ACOUSTICS FACULTY AND ADMINISTRATIVE CONTACTS

<http://www.colum.edu/aaa>

(All phone numbers – area code 312.)

#### Administrative Staff and Technical Support

Chair	Pantelis N. Vassilakis	<a href="mailto:pvassilakis@colum.edu">pvassilakis@colum.edu</a>	369-8821
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Assistant to the Chair	Elliott K. Scott	<a href="mailto:escott@colum.edu">escott@colum.edu</a>	369-8802
Secretary	Sonija Dewberry	<a href="mailto:sdewberry@colum.edu">sdewberry@colum.edu</a>	369-8820
Operations Manager	Ron Elling	<a href="mailto:relling@colum.edu">relling@colum.edu</a>	369-8803
Chief Engineer	Brett Johnson	<a href="mailto:bjohnson@colum.edu">bjohnson@colum.edu</a>	369-8275
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Equipment Center Coordinator	Sean Quigley	<a href="mailto:squigley@colum.edu">squigley@colum.edu</a>	369-8274

#### Faculty

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	David McNutt	<a href="mailto:dmcnutt@colum.edu">dmcnutt@colum.edu</a>	369-8831
	Ted Uzzle	<a href="mailto:tuzzle@colum.edu">tuzzle@colum.edu</a>	369-8809

**COLUMBIA COLLEGE CHICAGO  
USEFUL CONTACTS**

<http://www.colum.edu/students>

<b>Dean, School of Media Arts</b>	Robin Bargar	<a href="mailto:rbargar@colum.edu">rbargar@colum.edu</a>	369-8222
<b>Associate Dean</b>	Alton Miller	<a href="mailto:amiller@colum.edu">amiller@colum.edu</a>	369-8221
<b>Associate Dean of Faculty Advising</b>	Pattie Mackenzie	<a href="mailto:pmackenzie@colum.edu">pmackenzie@colum.edu</a>	369-8839
<b>Assistant Dean</b>	Charles Castle	<a href="mailto:ccastle@colum.edu">ccastle@colum.edu</a>	369-8220
<b>Administrative Assistant</b>	Jodi Adams	<a href="mailto:jadams@colum.edu">jadams@colum.edu</a>	369-8837
<b>Interactive Arts and Media Contact</b>	Joe Cancellaro	<a href="mailto:jcancellaro@colum.edu">jcancellaro@colum.edu</a>	369-7063
<b>Advising Center</b>			
Director of College Advising	Brian Marth	<a href="mailto:bmarth@colum.edu">bmarth@colum.edu</a>	369-7933
AA+A Advisor	J. Wayne Tukes	<a href="mailto:wtukes@colum.edu">wtukes@colum.edu</a>	369-7648
<b>Dean of Students</b>			369-7221
<b>Bursar's Office</b> (Cashier's Office)			369-7708
<b>Financial Services and Aid</b>			369-7140
<b>Department of Exhibition and Performance Spaces</b>			369-7696
<b>Library</b> (Circulation Desk)			369-7152
<b>Records Office</b>			369-7351
<b>Residence Life</b>			369-7803

**USING YOUR COLUMBIA COLLEGE EMAIL**

Similarly to College-wide communications, Departmental communications will be sent exclusively to your Columbia email accounts. To make sure you receive all the important and time sensitive information we'll be sending to you, you need to a) use your Columbia College email account regularly or b) set up a mail-redirect rule that will forward messages from your Columbia email account to the account of your choice. We strongly suggest you pick option (a), as it allows you to clearly separate College/work-related communications from personal ones. This represents good professional practice with which you should become accustomed prior to entering the industry as our colleagues.

**ACADEMIC CALENDAR**

For deadlines on adding, dropping, or withdrawing from courses and for other important dates see relevant links at: [http://www.colum.edu/Administrative\\_offices/Records/Registration.php](http://www.colum.edu/Administrative_offices/Records/Registration.php)

**AA+A ON FACEBOOK!**

Go to our Departmental home-page <http://www.colum.edu/aaa>, click on the Facebook icon, and join our group (also accessible directly at <http://tinyurl.com/aaa-department>). With over 500 student, alumni, and faculty members so far, this is the virtual center of AA+A news and activity.

## DEGREE REQUIREMENTS

**BACHELOR OF ARTS DEGREE: 120 credits**

**BACHELOR OF SCIENCE IN ACOUSTICS DEGREE: 128 credits**

### General Studies Requirements for Students Entering Fall 2011

*The lists below are valid as of Fall 2011. For the most up-to-date version of this list see [http://www.colum.edu/Academics/School\\_of\\_Liberal\\_Arts\\_and\\_Sciences/LAS\\_Core\\_Curriculum.php](http://www.colum.edu/Academics/School_of_Liberal_Arts_and_Sciences/LAS_Core_Curriculum.php)*

**B.A. students** must complete/transfer at least 42 credits of General Studies courses from the College's Liberal Arts and Sciences [LAS] Core Curriculum.

**B.S. in Acoustics students** must complete/transfer at least 41 credits. B.S., LAS requirements will not be visible on the College's advising site until Spring 2012.

<u>COURSE</u>	<u>B.A.</u>	<u>B.S.</u>
• 48-1100 - First-year Seminar (FYS)	[3 credits]	[3 credits]
• 52-1151 & 52-1152 Writing and Rhetoric I & II (EN)	[6 credits]	[6 credits]
• Oral Communication (OC)	[3 credits]	-----
• History (HI)	[6 credits]	[6 credits]
• Social Science (SS)	[6 credits]	[6 credits]
• Humanities (HU)	[6 credits]	[6 credits]
• Humanities Literature (HL)	[3 credits]	[3 credits]
• Mathematics (MA)	[3 credits]	[4 credits]
• Science (SC)	[3 credits]	[3 credits]
• Science with lab component (SL)	[4 credits]	[4 credits]

### Notes

- Students must satisfy a "U.S., Pluralism, and Global Awareness" requirement and can do so with any LAS Core course labeled as such.
- Students must satisfy a "Writing Intensive" requirement and can do so with any course labeled as such (Currently, the only AA+A course fulfilling this requirement is *History of Audio*).
- 24 credits of LAS Core courses must be completed by the attainment of 60 total credits.
- Writing and Rhetoric I and II must be taken by the attainment of 45 total credits.
- At least 6 credits of LAS courses must be taken at a level of 2000 or above.
- Students are expected to fulfill their SC and SL requirements by completing "The Science of Acoustics I" and "Science of Electronics" (or equivalent) respectively.
- B.A. students are expected to fulfill their MA requirement by completing "College Mathematics," "Liberal Arts Mathematics," or equivalent (more details on the next page).
- B.S. students are expected to fulfill their MA requirement by completing "Calculus I" or equivalent.
- The above Science and Mathematics Department courses constitute prerequisites for intermediate and upper level AA+A courses.
- Literature, Humanities, History, Social Science, and College-wide elective options include but are not limited to: Introduction to Literature; Introduction to Drama; Introduction to Fiction; Literature on Film; Myth, Literature, and Film; the Bible as Literature; Social Psychology; Business and Technical Writing; Hip Hop: Global Music and Culture; etc.

### **B.A. in Audio Arts + Acoustics Major Requirements for Students Entering Fall 2011**

All AA+A B.A. students must complete 11 credits of AA+A Introductory Core Curriculum and 6 credits of AA+A Intermediate Core Curriculum, for a total of 17 credits (there is an exception for the Acoustics B.A. Concentration – see pages 11-13)

<b>Introductory Core Curriculum</b>	<b>11 credits</b>
43-1110 - Introduction to Audio Theory <i>Course to be taken along with 56-2820 "The Science of Acoustics I" (fulfills a SC or a SL requirement at LAS)</i>	[3 credits]
43-1115 - Audio Production I	[4 credits]
43-2110 - Basic Audio Systems <i>Course to be taken along with 56-1820 "Science of Electronics" (fulfills a SC or a SL requirement at LAS)</i>	[4 credits]
<b>Intermediate Core Curriculum</b>	<b>6 credits</b>
43-2725 - Studies in Hearing	[3 credits]
43-2310 - Introduction to Psychoacoustics	[3 credits]

#### **Concentrations**

- Acoustics (*Note: To be gradually replaced by the new B.S. in Acoustics degree program*)
- Audio Design & Production
- Audio for Visual Media
- Live & Installed Sound

All AA+A B.A. students declare a Concentration by the attainment of 30 total credits.

Students meet with their Concentration Coordinator(s) and/or their designated AA+A faculty advisor before registration each semester to review requirements and suggested departmental and College-wide electives. Requirements for each Concentration can be found on the following pages.

#### **NOTES**

- All AA+A B.A. students must complete all AA+A Core Curriculum courses with a grade of C or better to continue in the Department of Audio Arts + Acoustics.
- Students with low (under 60) COMPASS (or equivalent) pre-Algebra test scores must complete 56-1720 "College Mathematics" or "Liberal Arts Mathematics" (course number pending) during their first year of study, fulfilling their MA requirement at LAS. Some students may need to complete a remedial Mathematics course before registering in "College Mathematics" or "Liberal Arts Mathematics."  
All other students may fulfill this requirement by completing the Mathematics course of their choice at any time during their first three years of study. Acoustics Concentration majors have additional Science and Mathematics requirements discussed on the following pages.
- "The Science of Acoustics I" and "Science of Electronics" (or equivalent) are the AA+A recommended Science courses, function as companion courses to two of our Core courses, fulfill the SC and SL requirements at LAS, and are pre-requisites for upper level AA+A courses.

### **B.S. in Acoustics Major Requirements for Students Entering Fall 2011**

[See Pages 14-15]

## Acoustics (B.A. / B.S.): Description

The Acoustics Program prepares students for entry-level positions with consulting firms in the areas of architectural acoustics (e.g. sound isolation; design of concert halls, studios, etc), environmental noise control (e.g. noise pollution; regulatory standards; etc.), sound perception and cognition (e.g. physical, physiological, and cognitive bases of communication through sound), and audio and vibration studies in markets as diverse as loudspeaker manufacturing, automotive research & development, and musical instrument construction. Graduates of the program are represented at most major consulting firms in the country and have been working with world-renowned manufacturers since 1998. The program also prepares students for graduate studies in hearing sciences and architectural acoustics.

The main educational goal of the Concentration is to offer students a holistic understanding of acoustics as a discipline by presenting all of its components, i.e. theory, practicum, and aesthetics through a combination of survey and in-depth courses. Theoretical and applied theory elements of acoustics are introduced in courses such as Architectural Acoustics, Environmental Acoustics, Fundamentals of Vibration, and Introduction to Psychoacoustics, while courses like Acoustical Testing I, Acoustical Testing II, and Acoustical Modeling give students the opportunity to analyze and to solve “real-world” problems and to develop a professional portfolio. Practical “real-world” exposure to the discipline is emphasized in advanced courses such as Acoustics of Performance Spaces, Studies in Transducer Theory, and Engineered Acoustics, while the aesthetic element of the discipline, yet presented in every class, is furthered in courses such as Studies in Hearing, Perception & Cognition of Sound, and Applied Acoustics.

In all, we have developed courses that provide both the fundamental elements that any practitioner in acoustics should be intimately familiar with, as well as a series of elective classes that the student can choose from in order to match her/his specific educational and career goals. Students are also encouraged to become better practitioners in the field of acoustics by considering elective courses that truly reflect the foundation of an enlightened liberal arts education.

Students advance through the program in a cohort fashion with a typical class of 12-15 students graduating in the spring semester. The cohort is expected to develop study groups, bring forth to the attention of the faculty common issues of interest to the students, and plan and schedule research activities suitable for participation in refereed conferences.

Although the Acoustics program aims at fostering a climate that develops team work, it also emphasizes individual attention to the students during all phases of their academic careers. Registration for most courses requires instructor permission, leading to regular one-on-one advising sessions between student and faculty members. In addition, office hours are held after every class and a wide range of individual tutoring options are available.

**Note:** As of Fall 2011, Acoustics students may follow the *Bachelor Of Science in Acoustics* degree program and its curriculum. Students entering the Department up to and including Fall 2011 will have the option to follow either the *B.A. in AA+A with Concentration in Acoustics* or the *Bachelor of Science in Acoustics* degree path. The *B.A. in AA+A with Concentration in Acoustics* path will not be an option for students entering on or after Fall 2012.

Dominique J. Chéenne, Ph.D.  
Director, Acoustics

**Acoustics (B.A.): Requirements** (60 credits)**Acoustics Core****7 credits***The courses must be completed by the end of the student's second semester.*

- 43-1110 - Introduction to Audio Theory [3 credits]
- 43-2110 - Basic Audio Systems [4 credits]

**Acoustics Preparation and Foundation****14 credits***Students take ALL of the following courses offered by the school OR have similar courses transferred from other institutions.*

- 56-2720 - Calculus I [4 credits]  
*Students must complete this course before they have completed 9 hours of the Concentration courses*
- 56-2721 - Calculus II [4 credits]  
*Students must complete this course before they have completed 15 hours of the Concentration courses*
- 36-1501 - Introduction to Programming [3 credits]
- 36-2600 - Object-Oriented Programming [3 credits]  
*Any other programming course that will allow the student to develop custom applications prior to taking Acoustical Modeling will also be accepted*

**Acoustics Concentration****21 credits***Students must take ALL of the following CONCENTRATION courses*

- 43-2725 - Studies in Hearing [3 credits]
- 43-2310 - Introduction to Psychoacoustics and Sound Perception [3 credits]
- 43-2315 - Architectural Acoustics [3 credits]
- 43-3315 - Environmental Acoustics (*Instructor permission required*) [3 credits]
- 43-3325 - Acoustical Testing I (*Acoustics Majors only*) [3 credits]
- 43-3326 - Acoustical Testing II (*Acoustics Majors only / instructor permission required*) [3 credits]
- 43-3320 - Acoustical Modeling (*Acoustics Majors only / instructor permission required*) [3 credits]

**Acoustics Electives - select from:****18 credits**

- 43-1115 - Audio Production I [3 credits]
- 43-3310 - Acoustics of Performance Spaces [3 credits]
- 43-3340 - Introduction to Vibration (*Acoustics Majors only*) [3 credits]
- 43-3120 - Perception and Cognition of Sound [3 credits]
- 43-3330 - Engineered Acoustics (*Acoustics Majors only*) [3 credits]
- 43-2325 - Studies in Applied Acoustics [3 credits]
- 43-3515 - Studies in Loudspeaker Theory [4 credits]
- 43-3615 - Topics System Contracting I [4 credits]
- 56-2820 - The Science of Acoustics I [3 credits]

**College-Wide Electives - suggested****12 credits***Students should consider taking 12 credits from the following group of General Studies courses or they should have similar college-level courses transferred. The list is not exhaustive and more classes are added on a regular basis.*

- 28-2110 Accounting I (*AEMM Department*) [4 credits]
- 28-1110 Introduction to Management (*AEMM Department*) [3 credits]
- 56-1722 Introduction to Statistical Methods (*Science & Mathematics Department*) [3 credits]
- 56-3740 Linear Algebra (*Science & Mathematics Department*) [4 credits]
- 56-2730 Numerical & Mathematical Modeling (*Science & Mathematics Department*) [4 credits]
- 33-1261 Tai-Chi Chuan. Beginning (*Dance Department*) [2 credits]
- 22-1131 History of Architecture I (*Art + Design Department*) [3 credits]
- 22-1220 Fundamentals of 2D Design (*Art + Design Department*) [3 credits]

**College-wide Electives – student's choice****6-7 credits**

*Students must also select 6-7 additional credits of COLLEGE-WIDE ELECTIVE courses of their choice (only up to 12 College-Wide Electives total can be transferred)*

**Requirements Summary**

- CORE 7 credits
- PREPARATION & FOUNDATION 14 credits
- CONCENTRATION 21 credits
- ACOUSTICS ELECTIVES 18 credits
- COLLEGE-WIDE ELECTIVES 12 credits (suggested)
- COLLEGE-WIDE ELECTIVES 6-7 credits (student's choice)
- GENERAL EDUCATION REQUIREMENTS 42 credits
- **TOTAL 120**

## Acoustics (B.S.): Requirements (75 credits)

### AA+A DEPARTMENT-LEVEL REQUIREMENTS

#### Acoustics Requirements 32 credits

- 43-2110 - Basic Audio Systems - [4 credits]  
*Pre/co-requisite: 56-1820 "Science of Electronics" (LAS, SC/SL requirement)*
- 43-2725 - Studies in Hearing [3 credits]
- 43-2310 - Introduction to Psychoacoustics and Sound Perception [3 credits]
- 43-1115 - Audio Production I [3 credits]
- 43-2315 - Architectural Acoustics [3 credits]
- 43-3315 - Environmental Acoustics (*Instructor permission required*) [3 credits]
- 43-3615 - Topics System Contracting I [4 credits]
- 43-3325 - Acoustical Testing I [3 credits]
- 43-3326 - Acoustical Testing II (*Instructor permission required*) [3 credits]
- 43-3320 - Acoustical Modeling (*Instructor permission required*) [3 credits]

#### Science & Mathematics Requirements 27 credits

*Students must take ALL of the following courses offered by the school OR have similar courses transferred from other institutions.*

- 56-2721 - Calculus II [4 credits]  
*Students must complete this course before completing 15 hours of Acoustics requirements - Pre-requisite: 56-2720 "Calculus I" (LAS, MA requirement), to be completed before completing 9 hours of Acoustics requirements*
- 56-3710 - Calculus III [3 credits]
- 56-3720 - Elementary Differential Equations [3 credits]
- 56-1722 - Introduction to Statistical Methods [3 credits]
- 56-3740 - Linear Algebra [3 credits]
- 56-3730 - Numerical & Mathematical Modeling [4 credits]
- 56-1240 - Material Science Technology [4 credits]
- 56-2830 - Fundamentals of Physics I [3 credits]  
*Pre-requisite: 56-2820 "The Science of Acoustics I" (LAS, SC/SL requirement)*

#### Audio Arts + Acoustics Electives 16 credits

*Select among 16 courses (49 credits); e.g.:*

- 43-3310 - Acoustics of Performance Spaces [3 credits]
- 43-3340 - Introduction to Vibration (*Acoustics Majors only*) [3 credits]
- 43-3330 - Engineered Acoustics (*Acoustics Majors only*) [3 credits]
- 43-3120 - Perception and Cognition of Sound [3 credits]

- 43-2325 - Studies in Applied Acoustics [3 credits]
- 43-3720 - Principles of Digital Synthesis and Signal Processing [3 credits]
- 43-2720 - History of Audio [3 credits]
- 43-3515 - Studies in Loudspeaker Theory [4 credits]
- 43-3610 - Sound System Design [4 credits]
- 43-3619 - CSI Practices for Graphical Documentation [2 credits]
- 43-2410 - Aesthetics of the Motion Picture Soundtrack [3 credits]

## COLLEGE-LEVEL REQUIREMENTS

### Liberal Arts & Science Requirements

**41 credits**

See page 9

### College-Wide Electives (suggested courses)

**12 credits**

- 28-2110 - Accounting I (*AEMM Department*) [4 credits]
  - 28-1110 - Introduction to Management (*AEMM Department*) [3 credits]
  - 56-2850 - Physics for Game Developers [3 credits]
  - 56-1810 - Physics for Filmmakers [3 credits]
  - 56-1881 - Physics of Musical Instruments [4 credits]
  - 36-1501 - Introduction to Programming [3 credits]
  - 36-2600 - Object-Oriented Programming [3 credits]
- Any other programming course that will allow the student to develop custom applications prior to taking Acoustical Modeling will also be accepted*
- 33-1261 - Tai-Chi Chuan. Beginning (*Dance Department*) [2 credits]
  - 22-1131 - History of Architecture I (*Art + Design Department*) [3 credits]
  - 22-1220 - Fundamentals of 2D Design (*Art + Design Department*) [3 credits]

## **Audio Design and Production (B.A.): Description**

The Audio Design and Production Program prepares students for careers in music recording, audio post-production, audio for multi-media communications, sound design, and sound art. It provides “core” coursework that covers the science of audio, basic and advanced recording, editing and processing, and studio recording and post-production techniques common to all audio “production” fields. Students then choose courses that focus on the specific techniques, technologies and aesthetics of the music industry and/or of sound as an independent art form, and become versed in a variety of formats and environments, from large-format recording studios to “desk-top” environments.

The specific goal of the Concentration is to provide a foundation understanding of audio theory (Introduction to Audio Theory and Basic Audio Systems), along with production fundamentals (Audio Production I and II). Our intermediate courses (Recording I, Recording II, and Live Sound Recording) apply core curriculum theory and practice in the context of studio and live/location recording/production, using both complex and simple microphone use/techniques as well as “live-to-two-track” and multi-track recording. A selection of “Master Class” courses (two are required) comprise capstone experiences in the areas of studio recording, live/location recording, sound art, synthesis/signal processing, and internships. In addition, students are required to take at least three courses in the department, outside of the Audio Design & Production Concentration requirements.

It is important that students recognize the ever-changing and increasingly diverse nature of our technologically sensitive industries. To this end we explore new media forms, in which audio production is an integral part. These may include web design and authoring, real-time web media, CD ROM publishing, sound design for theater, broadcast, and multi-media, and Sound Art as a stand-alone, independent means of artistic expression.

As part of a liberal arts program, students also develop communication skills in, and an aesthetic understanding of the different industries they may serve, which prepare them to interact more effectively with peers and clients.

Benjamin Kanters, MM  
Director, Audio Design and Production

**Audio Design and Production: Requirements** (47-49 credits)**AA+A Introductory and Intermediate Core Requirements** - See page 10 **17 credits****Intermediate Level Requirements** **15 credits**

- 43-2210 - Recording I [4 credits]
- 43-3210 - Recording II [4 credits]
- 43-2220 - Live Sound Recording [3 credits]
- 43-2215 - Audio Production II [4 credits]

**Senior Level Requirements** (*select a minimum of two of the following*) **6-8 credits***Due to high demand, students may only enroll in one Master Class per semester.*

- 43-3220 - Master Class in Studio Recording [4 credits]
- 43-3230 - Master Class: Music Design [3 credits]
- 43-3240 - Master Class in Live Sound Recording [3 credits]
- 43-3250 - Master Class in Classic Studio Techniques [4 credits]
- 43-3290 - Master Class in Sound Art [3 credits]
- 43-3720 - Principles of Digital Synthesis and Signal Processing [3 credits]
- 43-3288 - Internship (minimum 3 credits at senior-level) [Variable: 1-6]

**Audio Arts + Acoustics Electives** **9-11 credits***A minimum of three electives must be taken at the 2000 or 3000 level, drawn from AA+A courses that do not already appear in the above list. Suggested electives include but are not limited to:*

- 43-3115 - Audio Production III [3 credits]
- 43-2420 - Audio for Visual Media I [4 credits]
- 43-2510 - Aesthetics of Live Sound I [3 credits]
- 43-3610 - Sound System Design [4 credits]
- 43-2315 - Architectural Acoustics [3 credits]
- 43-2410 - Aesthetics of the Motion Picture Soundtrack [3 credits]
- 43-2720 - History of Audio [3 credits]

**College-Wide Electives** (*strongly recommended courses:*) **27-30 credits**

- 28-1410 - The Business of Music (*AEMM Department*) [3 credits]
- 28-2712 - Self-Management for Artists [3 credits]
- 28-2435 - Music Publishing [3 credits]
- 32-1100 - Introduction to Music Theory (*Music Department*) OR [3 credits]
- 32-1120 - Theory, Harmony, and Analysis I (*if students can test out of 32-1100*)
- 32-1110 – Aural Skills 1 (*previously Sightsinging1—Companion to 32-1100/1120*) [3 credits]
- “Techniques” OR “Ensemble” course e.g. 32-1321, 32-1322, OR 32-2884 [3 credits]  
(*Advanced Techniques courses and all Ensemble courses require Audition*)
- 32-1620 - Popular Contemporary Music [3 credits]

## Audio for Visual Media (B.A.): Description

The Audio for Visual Media Program prepares students for audio careers in the film, video, and game industries. Students explore the theory and practices of soundtrack design, as well as recording, editing, and mixing in relationship to story structure. As members of a liberal arts program, students develop an understanding of aesthetic principles as well as communication and professional skills that will allow them to effectively pursue their future goals.

Audio for Visual Media is a collaboration among the Film and Video, Audio Arts and Acoustics, and Interactive Arts and Media Departments, and students in this Program are required to complete courses in all three Departments. The Program is continually evolving to incorporate additional forms of visual media, and we encourage students to consult with faculty members and advisors in order to tailor their studies to best meet their interests and career objectives.

Benjamin Kanters, MM  
Director, Audio for Visual Media

## Audio for Visual Media: Requirements (55 credits)

<b>AA+A Introductory and Intermediate Core Requirements</b> ( <i>See Page 10</i> )	<b>17 credits</b>
<b>Film &amp; Video Department Foundation</b>	<b>8 credits</b>
<ul style="list-style-type: none"> <li>• 24-1030 - Moving Image Art [4 credits]</li> <li>• 24-1031 - Moving Image Production I [4 credits]</li> </ul>	
<b>Additional Required AA+A and F&amp;V Courses</b>	<b>30 credits</b>
<ul style="list-style-type: none"> <li>• 43-2215 - Audio Production II [4 credits]</li> <li>• 24-2401 - Editing I [4 credits]</li> <li>• 43-2420 - Audio for Visual Media I [4 credits]</li> <li>• 24-2102 - Audio for Visual Media II [4 credits]</li> <li>• 24-3122 - Audio for Visual Media III [4 credits]</li> <li>• 24-2103 - Location Sound Recording [4 credits]</li> <li>• 43-2410 - Aesthetics of Motion Picture Soundtrack [3 credits]</li> <li>• 43-3290 - Master Class in Sound Art [3 credits]</li> </ul>	
<b>AVM Electives</b> ( <i>Recommended Courses</i> )	<b>24 credits</b>
<ul style="list-style-type: none"> <li>• 24-2106 - The Art and Craft of Foley [2 credits]</li> <li>• 24-2107 - The Art and Craft of ADR [2 credits]</li> <li>• 24-3101 - Advanced Location Sound Recording [4 credits]</li> <li>• 24-3126 - Sound Mixing for the Cinema [4 credits]</li> <li>• One of [variable credits 1-6] <ul style="list-style-type: none"> <li>○ 24-3089 - F&amp;V Internship</li> <li>○ 24-3198 or 24-3199 - F&amp;V Independent Project</li> <li>○ 43-3288 - Internship: Sound</li> <li>○ 43-3291 - Independent Project: Audio</li> </ul> </li> <li>• 36-2610 - Sound for Interaction II [3 credits]</li> <li>• 36-2400 - Sound Design for Games I [3 credits]</li> <li>• 36-3400 - Sound Design for Games II [3 credits]</li> </ul>	

## Live & Installed Sound (B.A.): Description

The Live & Installed Sound Program addresses the technology and art of configuring, installing, and operating sound systems for everything from music and theater performances to civic or corporate events, religious services, and public announcement environments, through equal parts theory, aesthetics, and hands-on operation. As different as they may appear, live sound engineers and systems contractors are joined by a common goal: to successfully accomplish a desired sonic outcome in real-time contexts. Live and Installed Sound skills are expertly taught in our Department and are widely sought after by the relevant industries.

Feedback by working alumni in Live and Installed Sound has been driving curriculum design and updates within the Concentration. Our alumni are employed by major artists, venues, and sound companies throughout North America and beyond, as system designers and engineers as well as front-of-house mixers and monitor engineers. Early in the program the classes are directed toward theory and aesthetics, with hands-on experience becoming increasingly the focus of small-group projects as the course sequence progresses.

Cooperative effort is encouraged at all levels of the program, reflecting the professional expectations of the live sound and sound systems design idioms. Opportunity is also provided for students to expand their individual capabilities in lab and in external production contexts.

As live sound production often incorporates other media arts, students are encouraged to take classes in acoustics, and audio production as a means of expanding their personal viability in the professional world. The course material is driven by the realities of that world and the less volatile requirements of a classic liberal arts education.

The success of our graduates can be traced to a view from the ivory tower tempered by applications in sound system design and the creative chaos of real-world live sound production.

Jack Alexander  
Director, Live & Installed Sound  
David McNutt, MS,MBA  
Coordinator: Installed Sound

**Note:** Effective Fall 2011, our past Sound Contracting Concentration has been folded into the newly redesigned Live and Installed Sound Concentration.

**Live and Installed Sound: Requirements** (57-58 credits)**Required Courses for All Live and Installed Sound Majors**

**AA+A Introductory and Intermediate Core Requirements** **17 credits**  
See Page 10

**Live and Installed Sound Intermediate Curriculum:** **15 credits**

- 43-2515 - Live Sound Reinforcement [3 credits]
- 43-2510 - Aesthetics of Live Sound I [3 credits]
- 43-3610 - Sound System Design [4 credits]
- 43-3621 - The Art of Troubleshooting [3 credits]
- 43-3619 - CSI Practices for Graphical Documentation [2 credits]

**Live and Installed Sound Required Electives** **12-13 credits**  
*Choose any 4 out of the following courses*

• 43-3511 - Aesthetics of Live Sound II	[3 credits]
• 43-3525 - Live Sound Engineering Practicum	[3 credits]
• 43-3527 - Reinforcement System Engineering	[3 credits]
• 43-3520 - Sound for Theater	[4 credits]
• 43-3615 - Topics Systems Contracting I	[3 credits]
• 43-3611 - Level, Intelligibility, and Feedback	[3 credits]

**Live and Installed Sound Advanced Courses** **13 credits**

- 43-3528 - Monitor Mixing [3 credits]
- 43-3515 - Studies in Loudspeaker Theory [4 credits]
- 43-2715 - Audio Measurement Techniques [3 credits]
- 43-3526 - Advanced Loudspeaker Management [3 credits]

**Additional Recommended Electives**  
(Please consult with the AA+A Faculty)

- 43-2215 - Audio Production II [4 credits]
- 43-2220 - Live Sound Recording [3 credits]
- 43-2720 - History of Audio [3 credits]
- 28-2110 - Accounting I [4 credits]
- 28-1410 - Art and Business of Recording [3 credits]
- 28-1410 - The Business of Music (AEMM Department) [3 credits]
- 28-2712 - Self-Management for Artists [3 credits]
- 28-2435 - Music Publishing [3 credits]
- 43-3288 - Internship: Sound or
- 43-3291 - Independent Project: Audio [variable credits 1-6]

## COURSE DESCRIPTIONS

### **COURSES IN THE AUDIO ARTS + ACOUSTICS DEPARTMENT**

*listed alphabetically by course title*

**43-3320**

#### **Acoustical Modeling**

Modeling is rapidly becoming an essential component of the acoustical design process. This course reviews the modeling options currently available to acoustical designers and presents the strengths and the limitations of the various methods. Modeling exercises for a variety of acoustical environments are performed by the students using some of the relevant software currently available. A large portion of the class is devoted to student projects.

*Prerequisites:* Engineered Acoustics, Acoustics of Performance Spaces

Credits: 3

**43-3310**

#### **Acoustics of Performance Spaces**

A continuation of Architectural Acoustics, course is dedicated to the design of performance spaces and recording aural environments. Course covers issues pertaining to architectural design and to sound reinforcement in various indoor contexts such as movie theaters, performance halls, control rooms, recording studios, and Houses of Worship. Course combines case studies spanning many centuries with current foundation material to provide students with a critical understanding of acoustical design issues and a reinforcement of their aesthetic sense for music and voice performances.

*Prerequisites:* Architectural Acoustics, Psychoacoustics, Studies in Hearing

Credits: 3

**43-3325**

#### **Acoustical Testing I \***

The testing of an acoustical space represents the “proof of performance” of the design phase. Course introduces students to a variety of testing tools and techniques to be used in a wide range of situations. The course makes extensive use of “real world” contexts to present the need for accurate testing and reinforce the methodology introduced during the lectures.

*Prerequisites:* Engineered Acoustics, Acoustics of Performance Spaces

Credits: 3

**43-3326**

#### **Acoustical Testing II \***

Course focuses on practical applications of the theory introduced in Acoustical Testing I.

*Prerequisites:* Acoustical Testing I

Credits: 3

**43-3510**

#### **Advanced Live Sound Reinforcement**

Design of systems for large concerts is a growing and complex field. Course introduces students to various types of sound systems appropriate for large concert systems and deals with some non-audio aspects, such as rigging and power distribution. Each semester class is taken behind the scenes of a major event. There are also opportunities for hands-on experience with smaller systems.

*Prerequisites:* Live Sound Reinforcement

Credits: 3

**43-3526 Advanced Loudspeaker Management**

This course explores the use of all-digital loudspeaker management systems in the context of front of house live sound mixing. Students will experience electronic crossover operation in two and four-way modes, as well as operation of digital parametric equalizers, purpose oriented (both for drivers and main system) digital delay, driver oriented limiting, and feedback suppression for open microphones in varying contexts.

*Prerequisites:* Live Sound Engineering Practicum

Credits: 3

**43-2261 Aesthetics and Practice in Sound Installation**

Course explores the aesthetics and psychology of sound through the study of sound installation art, environmental sound, and the role of sound in everyday spaces. Readings and discussion cover the aesthetic theories, philosophies, and histories that drive the medium. As a class, students observe and interrogate the relationships and potential dialogue between the audience and the artwork. Students apply their observations by designing and building their own sound installation art and making environmental recordings. Students are expected to work independently using the facilities of the AA+A Department on projects developed with the consent of the instructor.

**43-2510 Aesthetics of Live Sound I**

Course defines in a structured fashion the psychology of the musician and physics of the instrument within the framework of sound reinforcement and analysis. The goal is to familiarize students with one instrument-musician-sound reinforcement approach per week.

*Co-requisite:* Basic Audio Systems

Credits: 3

**43-3511 Aesthetics of Live Sound II**

Course expands of the Aesthetics I course and covers some of the more unusual instruments and ensembles. Instruments may include mandolin, bassoon, Hammond organ, digital keyboards, harp, and more, depending on availability. The course also covers groups such as world music ensembles, and DJ/dance forms such as Hip-Hop, House, R&B/Dusties, Drum & Bass, etc.

*Prerequisites:* Basic Audio Systems, Aesthetics of Live Sound Reinforcement I

Credits: 3

**43-2410 Aesthetics of the Motion Picture Soundtrack**

Course examines Classical Hollywood as well as more recent film soundtrack practices, focusing on the interpretation of film sound relative to 'expectancy' theories of meaning and emotion. Film sound (i.e. the combination of dialogue, music, sound effects, and silence) is viewed through the perspectives of psychology, aesthetics, and criticism, providing students with opportunities to (a) cultivate sharply-honed critical listening/viewing skills (b) develop a vocabulary for intellectual discussion about a film's soundtrack (c) learn about the perceptual processes associated with intellectual and emotional responses to sound and (d) discuss compositional tools and techniques that contribute to effective film sound practices. The course examines theoretical, aesthetic, and analytical perspectives and does not focus on the mechanics of film sound, addressed in a separate course.

*Prerequisites:* AA+A: Writing and Rhetoric II - Film & Video: Foundation course-set

Credits: 3

**43-2315 Architectural Acoustics**

This course reviews the fundamentals of acoustics covered in previous classes and presents all of the materials within the context of the behavior of sound in a bounded space. The practical aspects of the class are emphasized by dedicating a large portion of the semester to case studies. Demonstrations are provided throughout the semester to emphasize both theoretical and practical concepts.

*Prerequisites:* Psychoacoustics, Studies in Hearing *Co-requisite:* Psychoacoustics.

Credits: 3

**43-3621 Art of Troubleshooting**

Complex, interactive systems fail in complex, interactive ways. This course builds six essential competencies to assist system designers and system operators to cope with failure and limit immediate damage, to collect symptoms and understand systems rapidly, to apply inferential logic and avoid logical fallacies, to identify, trap, and limit failures, and to patch around them. This is not a course in equipment repair.

*Prerequisites:* Basic Audio Systems

Credits: 3

**43-2710 Audio Equipment Overview**

Course is an orientation to major lines and manufacturers of professional audio equipment. Content focuses on understanding, interpreting, and evaluating manufacturers' specifications in light of subjective performance. Course includes presentations and demonstrations by manufacturers' representatives and field trips when possible.

*Prerequisites:* Basic Audio Systems

Credits: 3

**43-2715 Audio Measurement Techniques \***

This class is about audio measurements and specifications. Students will gain a firm understanding of the specifications currently used to characterize audio equipment and why they are important. After a review of the measurement systems available, the student will measure and evaluate various types of audio gear.

*Prerequisites:* Basic Audio Systems

Credits: 3

**\* Course not currently offered – under revision**

**43-2420 Audio for Visual Media I**

The technology and techniques used in creating sound tracks for TV, film, and multi-media are presented in this studio class. Students learn the technology and techniques of synchronizing video with all audio platforms, including analog and both linear and non-linear digital recording and editing systems.

*Prerequisites:* Audio Production II

Credits: 4

**43-1115 Audio Production I**

Course introduces students to basic theories and techniques of recording, editing, and mixing. Instruction covers fundamentals of microphone usage, mixing console operation, and non-linear digital recording and editing.

Course is taught in a classroom laboratory where lectures and labs focus on the production of short-form audio works of voice, music, and sound effects to develop and improve engineering and production skills.

*Prerequisite/Co-requisite:* Introduction to Audio or permission of department

Credits: 4

**43-2215 Audio Production II**

Course provides students with a solid foundation in working with digital audio workstations. Through lecture/demonstration/discussions, in-class and homework assignments, and a series of creative projects, students gain experience with fundamental practices in digital audio production, including editing, signal processing, automation, mixing, and preparing audio deliverables. Students participate in a series of exercises to develop and refine critical listening, evaluation, and judgment abilities. In the process, students adopt techniques and strategies for organizing and managing sessions, developing effective communication and presentation skills, and acquiring a sense of professionalism in the field.

*Prerequisites:* Audio Production I

Credits: 4

**43-3115 Audio Production III**

Course provides students with an advanced creative practice in audio art using digital audio workstations, basic tool in the field of sound and music production. Through lectures, demonstrations, and production assignments, students gain valuable knowledge of the theory and practices of audio art as a recognized form of artistic expression using advanced techniques of audio manipulation on digital audio workstations. In addition to classroom activities, students complete assigned work in the Digital Audio Production Laboratory.

*Prerequisites:* Audio Production II – *Restrictions:* Junior/Senior level

Credits: 3

**43-2110 Basic Audio Systems**

Course is the last of a series of core curriculum courses that emphasize fundamental technologies of audio systems and components. Students are introduced to equipment used in professional audio systems from a technical and functional point of view. Course is held in a classroom/lab with occasional lectures held in the studios. Students must pass this course with a grade of C or better to continue in the Sound program.

*Prerequisites:* Introduction to Audio Theory; Audio Production I; College Mathematics; Science of Acoustics

Credits: 4

**43-2115 Careers in Audio**

Course provides an overview of career opportunities in the field of audio. Recognized experts from a variety of fields discuss employment options for sound majors in this lecture class. Students also begin the process of developing resumes and portfolios as they explore the possibilities of their own futures in professional audio.

*Prerequisites:* Basic Audio Systems

Credits: 1

**43-3292 College Studio Operations**

Practicum/lab course explores theories, techniques, and procedures employed in complex audio and media productions. Content includes studying the manner in which individual skills of audio engineering are applied in the context of real-world environments. Students engineer for classes from Music, Television, and Film/Video Departments, producing four to six finished pieces by the end of the semester.

*Prerequisites:* Permission of faculty supervisor

Credits: 3

**43-3619 CSI Practices for Graphical Documentation**

This course gives students familiarity with the graphical standards of the Construction Specifications Institute. Students will acquire skill at navigating architectural drawings at a workstation, and ability to generate audio system drawings.

*Prerequisites:* Sound System Design

Credits: 2

**43-3330 Engineered Acoustics**

Course investigates acoustical issues pertaining to engineered systems in a wide range of environmental settings. Topics covered include heating, ventilation, air conditioning (HVAC) noise issues and design; noise, vibration, and harshness (NVH) assessment; fundamentals of active noise control; and a primer on sound quality. A substantial amount of the course is dedicated to modeling various physical systems with computer tools in order to assess their behavior relating to noise or vibration excitation.

*Prerequisites:* Acoustical Modeling, Acoustical Testing I

Credits: 3

**43-3315 Environmental Acoustics**

Course aims at providing a comprehensive understanding of issues pertaining to noise pollution and noise control in a wide range of environments such as urban, industrial, airport, entertainment venues, and so forth. Comprehensive course equally covers both theory and practice with field measurements performed by students and teacher. Data are used to reinforce theoretical models. Course emphasizes noise studies in the workplace and reviews current regulatory issues pertaining to noise pollution.

*Prerequisites:* Psychoacoustics, Studies in Hearing *Co-requisite:* Psychoacoustics. Credits: 3

**43-2720 History of Audio**

The history of technology is a new and exciting branch of historiography, not only because it reveals human and social struggles to create and to adapt, but also because it has practical effects on the business aspects of today's audio and acoustics industries. Today's profits and livelihoods depend on novelty and exclusivity, and the history of audio is in play every time something is offered as new and better. This course offers a way to evaluate historical claims.

*Prerequisites:* Basic Audio Systems, English Composition II Credits: 3

**43-3288 Internships in Audio Arts and Acoustics**

This course is designed specifically for the intermediate and advanced student to help bridge the skills taught in the classroom with those demonstrated in the marketplace. Typical internships are 10 to 20 hours per week, with a ratio of one credit for every five hours spent onsite. Internships are offered in each of the concentrations in Audio Arts and Acoustics.

*Prerequisites:* Subject to Departmental approval Credits: Variable

**43-1110 Introduction to Audio Theory**

Course introduces students to the language and theories common to all fields in which audio is used. Classes are in a lecture/demonstration format and make use of a wide assortment of audio synthesis, processing and analysis tools to illustrate different topics and concepts. Topics include an introduction to sound and hearing, analog and digital audio signals, and audio systems theory.

*Prerequisites:* None Credits: 3

**43-2310 Introduction to Psychoacoustics and Sound Perception \***

Class provides the necessary basis for understanding how we hear the world around us. The course is multidisciplinary, with contributions from the academic disciplines of auditory physiology, physics, and psychology. It examines how the human auditory system processes the information it receives, that is, how physical attributes of sound translate into perceptual attributes such as loudness, pitch, and timbre. Topics extend to the perception of music, sound localization, speech, and beyond. Numerous audio-visual demonstrations are used to reinforce the theoretical material presented.

*Prerequisites:* Basic Audio Systems – *Pre/Corequisite:* Studies in Hearing Credits: 3

**43-3340 Introduction to Vibration**

Course provides students with an understanding of vibration theory, experimental analysis and vibration control. The class focuses on free and forced vibration of mechanical systems with an emphasis on practical applications in the areas of rotating machinery, isolation, and noise reduction. Excessive vibration is often the cause of unwanted sound or noise. Understanding the effects of vibration enhances the understanding of noise related issues in buildings and the environment, addressed in Engineered Acoustics and Environmental Acoustics. This class also provides the necessary background to understand the complex vibration of musical instruments.

*Prerequisites:* Calculus I, Architectural Acoustics Credits: 3

**43-3611 Level, Intelligibility, and Feedback**

There are three key issues in sound-system work: level, the distribution of loudspeaker sound in a room; intelligibility, the characteristics of sound that permit speech phonemes to be apprehended accurately; and feedback, runaway regeneration that can damage sound equipment or human hearing. This course studies all three from theoretical, predictive, and practical points of view.

*Prerequisites:* Basic Audio Systems

Credits: 3

**43-3525 Live Sound Engineer Practicum**

Course presents extremely advanced live sound operational theory in a production context. Instructor presents a theory as it applies to a specific problem, followed by the application of that theory to an actual live performance. Students then apply this knowledge by operating the same systems themselves.

*Prerequisites:* Advanced Live Sound Reinforcement and Permission of instructor

Credits: 3

**43-2220 Live Sound Recording**

Hands-on course explores minimal microphone location recording. These techniques are fundamental to those employed in multi-track studio recording. Course highlights understanding, selection, and placement of microphones through a wide variety of acoustical environments and instruments. Emphasis is placed on classical and acoustic music, ambient sound recording, and sound effects recording. Students check out location recording equipment and record a number of events during the semester.

*Prerequisites:* Basic Audio Systems

Credits: 3

**43-2515 Live Sound Reinforcement**

Course is designed to teach techniques and tools of sound reinforcement. Content combines product awareness with ear training and hands-on practice. Students complete lab assignments in the Audio Technology Center Live Sound Lab and spend two lab sessions at local music clubs.

*Prerequisites:* Basic Audio Systems

Credits: 3

**43-3240 Master Class in Live Sound Recording**

This course introduces students to advanced concepts and techniques of acoustic live sound recording and the relationship of acoustic recording with critical listening and high-definition playback systems. These techniques will help students gain essential knowledge of recording without the use of processing such as equalization and compression, and to further understand how to properly assess such recordings through the assembly of high quality playback systems.

*Prerequisites:* Live Sound Recording, Recording II, and consent of Program Coordinator

Credits: 3

**43-3230 Master Class in Music Design [DAW]**

Course introduces students to advanced concepts of musical design using tools of random access audio on a digital workstation. Each week, a component of musical design (for postproduction, editing, processing, and mixing) is introduced and illustrated by the instructor, who supervises the creation of a class project. This project serves as a model for techniques and aesthetics of DAW production. Students bring the weeks' instruction to their own team projects, which they complete in a time frame that parallels the class project.

*Prerequisites:* Recording II, consent of Program Coordinator

Credits: 3

**43-3290 Master Class in Sound Art**

Course explores the aesthetics and techniques of sound art. A major component of the course is the ongoing analysis and critique of the students' work. In addition to readings, lecture, discussion, and analytical listening, students have opportunities for in-depth feedback from the instructor. Students are expected to work independently using the facilities of the AA+A Department on projects developed with the consent of the instructor.

*Prerequisites:* Permission of instructor

Credits: 3

**43-3250 Master Class in Classic Studio Techniques**

In this course, the focus is on the craft of studio recording as it developed in the first era of the audio industry, prior to the advantages afforded us by digital technologies. This lecture/lab course is designed to teach the technologies, theories and creative processes engineers embraced in that era, such as live-to-stereo recording, linear-analog recording and editing, producing reverb using the analog plate and natural reverb chambers, analog delay techniques, and hybrid processing (daisy-chains) using discrete signal processors.

*Prerequisites:* Master Class in Studio Recording OR Master Class in Music Design

Credits: 4

**43-3220 Master Class in Studio Recording**

Course gives an overview of studio recording techniques, covering such topics as microphone usage, signal routing, synchronization, as well as session set-up and psychology. Course is taught by leading Chicago recording engineers and is geared toward advanced students who desire a career in music engineering.

*Prerequisites:* Recording II, consent of Program Coordinator

Credits: 4

**43-3528 Monitor Mixing**

Total immersion stage monitor class for advanced live sound reinforcement students, with in depth exploration of feedback suppression, mix aesthetic, systems design and signal flow.

*Prerequisites:* Live Sound Engineering Practicum

Credits: 3

**43-3120 Perception and Cognition of Sound**

Course provides the necessary basis for understanding the higher auditory and cognitive processes involved in our perception of sound in general and music, speech, and 3-D sound fields in particular. It addresses the basic cognitive theories of memory, attention, and information processing involved in our meaningful and emotional responses to sound. The course is multidisciplinary, with contributions from music, physiology, physics, psychology, philosophy, computer science, and more. Numerous demonstrations are used to reinforce the theoretical material presented in the lectures. Students design experiments on sound perception and cognition, and en-gage in critical listening as participants in other students' experiments.

*Prerequisites:* Introduction to Psychoacoustics

Credits: 3

**43-3720 Principles of Digital Synthesis and Signal Processing**

Course demystifies the principles of sound and music synthesis techniques currently used by Sound Designers, Synthesizer Programmers, Recording and Post Production Engineers, Audio Artists, and Composers. Learning these techniques from the ground up on synthesis software gives students the opportunity to master the fundamentals and principles of sound synthesis and audio processing. Students are also able to apply these principles to designing their own plug-ins as well as mastering a variety of commercial hardware and software packages for digital synthesis and signal processing.

*Prerequisites:* Audio Production II, permission of instructor

Credits: 3

**43-2210 Recording I**

Course introduces students to the theories, technologies, and practice of multi-track recording sessions. This is the first studio techniques class to be taken by students who select the Audio Design & Production concentration. Classes focus on the fundamentals of multi-track recording, building upon the fundamentals of console design and signal processing systems as presented in Audio Production I, Basic Audio Systems, and Audio Production II. The class includes lecture-demonstrations, in-class group tracking sessions, and additional lab assignments, which are completed in the studios and labs of the Audio Arts + Acoustics Department.

*Prerequisites:* Basic Audio Systems, Audio Production II

Credits: 4

**43-3210 Recording II**

Course helps students become proficient in the theories, technologies, and practice of multi-track recording and mixing. Building upon the concepts introduced in Recording I, students continue to study and practice studio recording with an increased focus on signal processing and mixing techniques. Students will conduct in-class as well as independent team recording projects. Class lectures and demonstrations focus on the team projects, including ongoing critiques of both recordings and mixes.

*Prerequisites:* Recording I

Credits: 4

**43-3527 Reinforcement System Engineering**

Course combines measurement and subjective observation with a complete teardown of a state of the art sound reinforcement system. Students experience all components of a system maintenance and evaluation cycle including troubleshooting, driver measurement, system equalization and involvement with problems in rack wiring, electrical issues, and the correct utilization and placement of system hardware.

*Prerequisites:* Live Sound Engineer Practicum

Credits: 3

**43-3520 Sound for the Theater**

Course covers many aspects of sound engineering for the theater from first production meeting to final tech dress rehearsal. Subjects covered include sound effects, sound tracks, live pit orchestras, special miking techniques such as body miking, and ways engineers interact with other facets of theatrical productions.

*Prerequisites:* Basic Audio Systems

Credits: 4

**43-3610 Sound System Design**

Course offers an in-depth look at what goes into designing and installing permanent sound systems. Students learn to design systems for coverage, intelligibility, and cost effectiveness. Emphasis is placed on understanding specifications of system component and predicting system performance.

*Prerequisites:* Basic Audio Systems

Credits: 4

**43-2325 Studies in Applied Acoustics**

Course combines the curricula of a traditional introductory musical acoustics course with special topics on electro-acoustics, room acoustics, and spatial hearing perception. An in-depth presentation of the vibration and sound propagation issues pertaining to a wide range of musical instruments is presented in the context of timbre, tuning, and temperament. The course provides students with the opportunity to investigate and report on a specific project to be conducted as part of a team.

*Prerequisites:* Basic Audio Systems

Credits: 3

**43-2725** **Studies in Hearing**

This course introduces students to the fundamentals of human hearing physiology as well as issues relating to hearing loss and conservation. It is important for any audio professional to understand how complex and delicate the human hearing system is. We must also realize the significance of the fact that society is, only now, beginning to address the problem of environmentally induced hearing loss. The first part of the course will address hearing physiology. The course will focus on the mechanical systems of hearing; starting with the reception of acoustic energy and ending with the delivery of neural signals to the brain. This will give students the necessary foundation knowledge to engage in presentations and discussions covering the topics of hearing loss and conservation.

*Prerequisites:* Basic Audio Systems

Credits: 3

**43-3515** **Studies in Loudspeaker Theory**

Course examines the principles of transduction as they apply to loudspeaker design. Throughout an audio system, from the microphone to the ear, energy is transformed, induced, and transduced. The class's primary focus is on loudspeakers and loudspeaker enclosures: how electrical and mechanical energy is transformed into acoustical energy. Students explore the trade-offs and byproducts of this transfer, engage in aesthetic analyses, learn to predict effects, and examine the challenges involved in constructing various loudspeaker systems. Course analyses loudspeaker characteristics, how they behave alone, and how they behave together supported by an introduction to loudspeaker performance predictive models.

*Prerequisites:* Studies in Hearing

Credits: 4

**43-3615** **Topics Systems Contracting I**

Advanced course focuses on technical design issues in contracting. Students learn principles of power and signal networks through hands-on troubleshooting, design exercises, lecture, and critical analysis of real systems. Course includes exercises in writing system proposals and specifications.

*Prerequisites:* Sound System Design

Credits: 3



**8-2435 Music Publishing**

Students learn principles and procedures involved in music publishing both nationally and internationally. The course examines copyright basics, registration, and publishing income sources. Analysis of publishing deals and their negotiation provides students with a solid foundation in understanding the business of music publishing.

*Requirement:* 24 enrolled hours

Credits: 3

**28-2712 Self-Management for Artists**

This course provides artists of all disciplines with the fundamentals for self-sustaining careers in the arts, entertainment and media.

*Requirement:* 24 enrolled hours.

Credits: 3

**ENGLISH****52-2802 Business and Technical Writing**

This course is a workshop and seminar in which students practice forms of writing that are common in professional contexts. Examples include business correspondence, job application materials, proposals, and reports. Other communication and collaboration practices that occur in the workplace may also be covered, such as group work and oral presentation. The course will teach students to consider audience, purpose, document design, and language use in all the texts they produce.

Credits: 3

**52-1151 Writing and Rhetoric I**

Writing and Rhetoric I helps students understand and refine their own writing processes. Designed to assist students in making connections between their knowledge, cultures, worlds, and the multiple-literacies and discourses of academic, communicative and performing life, the course encourages students to develop their distinctive voices as they learn to make conscious rhetorical decisions. Writing and Rhetoric I connects personal reflection with critical analysis, providing plentiful and varied opportunities for writing, strengthening reading skills, and becoming a member of a writer-reader community.

Credits: 3

**52-1152 Writing and Rhetoric II**

Writing and Rhetoric II helps students use writing to develop and sustain an in-depth personal and intellectual inquiry into a subject of their choosing. The course unfolds in a series of assignments designed to lead students through a continually deepening creative research process that ripens into a written project of considerable length and complexity. Focusing on methodology, rather than specific course theme, students learn to generate worthwhile questions, collect primary data, locate secondary resources, and form original research insights.

Credits: 3

**52-2801 Writing for the Workplace**

This course provides student writers with practical approach to communicating technical information to non-specialists in film, photography, and science fields. Course focuses on addressing questions of primary consideration in any piece of technical writing: Who reads the material? What does intended audience want or need to know? How should writing be structured to meet those needs?

Credits: 3



Preproduction and preparation for production include writing treatments, scripting, story-boarding and developing a workflow appropriate to the project. Short film stories are acquired using digital audio and Hi Definition video. Students learn basic producing, directing, camera operation, lighting, composition and editing.  
Credits: 4

### **24-2031 Moving Image Production II**

This course is a continuation of Moving Image Production I and continues a team-based approach to film production. Each team member serves as executive producer for one of four team projects which may include fiction, documentary or alternative forms. Produced projects are developed in the companion, co-requisite course Project Development (24-1032). Emphasis is on intermediate production protocols including set operations, cinematography and lighting, audio acquisition and intermediate postproduction skills including developing a workflow to completion of the project  
Credits: 4

### **24-2104 Music for Film and Video**

Students are introduced to elements of music and ways in which these elements may be used to create a musical style that enhances the visual statement. Course emphasizes understanding the function of the score and how it relates to texture, color, and drama in music. Students explore their creativity using the tools available, work on projects of increasing complexity, and complete a score for their own film or video as a final project. Listening skills, music vocabulary, and business and legal aspects of the profession are also studied.  
Credits: 3

### **24-2030 Project Development, Pre-Production, and Preparation**

This course explores and practices above-the-line roles and functions for project development, preproduction and preparation. Projects conceptualized, written and developed are produced in the companion, co-requisite course Moving Image Production II (24-1033). Students will draft scripts, schedule and budget projects, prepare visual and aural treatments, keep director/producer journals, conduct casting sessions and critique edits in a team-based approach. Emphasis is on collaboration and team building.  
Credits: 4

### **24-2700 Script Analysis**

Course provides students with an opportunity to learn more about various concentrations by examining the methods by which professionals approach, break down, or prepare a script for filming. Students analyze various drafts of scripts from several feature length and shorter films. Beginning with story analysis, class analyzes scripts in relationship to producing, directing, acting, production design, cinematography, editing, and sound design. Scripts' strengths and weaknesses are discussed in relation to each of the production areas. Course material links with material from each of the major concentration areas in the Film and Video Department.  
Credits: 3

## **INTERACTIVE ARTS AND MEDIA**

### **36-2550 C++ Programming**

The course introduces the student to programming using the C++ language. Students learn basic programming of graphic and business applications in C++. Instruction emphasizes good programming practice, programming structure, and object-oriented programming.  
Credits: 3

**36-1501 Introduction to Programming: Theory and Concepts**

Class provides a fundamental introduction to computer programming theory and concepts to students with little or no previous experience. Students learn structure, syntax, logic, and the difference between object-oriented and procedural systems.

Credits: 3

**36-2402 Linear and Nonlinear Sound Design for Games**

This course provides the essential skills required to create sound objects for the linear aspects of game production as well as a grounding in nonlinear game production. Sound effects assets are generated, logged and implemented using various types of linear and nonlinear game formats. The class focuses on sound effects production and game sound theory.

Credits: 3

**36-2600 Object Oriented Programming**

Extending the theory initiated in Introduction to Programming: Theory and Concepts, this course, through a variety of exercises, stresses the practice of programming. Object-oriented, event-driven strategies are emphasized to prepare students for more advanced programming studies in subsequent classes. Students are also introduced to programming best practices including comment to code and naming conventions.

Credits: 3

**36-2400 Sound Design for Games I**

This course allows the student to actively implement, design, and control the audio assets in a game. Open source game engines and game editors are widely used in this course to familiarize students with the production and creative demands that will be required of them. Technique, production, and creativity are fostered in texts and lectures throughout the course. Sound libraries are the source of much of the raw audio for project work.

Credits: 3

**36-3400 Sound Design for Games II**

This course will continue the procedures and agenda of Sound Design for Games I. A strong focus on professional sound effects design production and implementation will be accompanied by various projects and written analyses. Game audio engine customization using 3rd party sound engines will be extensively explored.

Credits: 3

**36-2610 Sound for Interaction II**

Students will study the psychological and technical aspects of applying sound and music to interactive visual media. Students will produce projects with include creating sound effects tracks for linear and non-linear media. Introduction to game engine sound implementation and sound design strategies will be presented.

Credits: 3

**LIBERAL EDUCATION****51-2103 Critical Vocabulary for the Arts**

Course probes ideas and terminology that help students enjoy and appraise achievements in the arts. Students experience performing and visual arts and explore how art is created and perceived.

Credits: 3

**MARKETING COMMUNICATION****54-1601 Consumer Behavior (Adult)**

Course explores the relationship between conscious and unconscious factors influencing consumers and examines the need, structure, and interaction with planned advertising messages. Survey course gives students insight into the reasons advertising works, using basic readings in the psychology of perception and attitude formation.

Credits: 3

**MUSIC****32-1110 Aural Skills 1 (previously Sightsinging 1)**

This is the first of four courses in Sightsinging, Musicianship & Ear Training. It is a fundamental course in reading and performing music, ear training, and sightsinging. Basic concepts of notation, rhythm, tonality, and harmony are applied to reading and hearing music through performance and dictation of melodies, intervals, triads, major scales, natural, harmonic, and melodic minor scales, chord progressions, and seventh chords

Credits: 3

**32-1100 Introduction to Music Theory**

Course prepares students for study of theory and is based on intense drill in note recognition, work with basic rhythms, and preliminary development of aural skills, with special attention to note replication. Students develop a sense of self-discipline required for the study of music, a sense of relative pitch, a verbal musical literacy, and an ability to listen actively.

Credits: 3

**32-2884 Pop/Rock Ensemble Performance/Showcase**

**Performance:** Intermediate level course is an ensemble for the smaller to medium sized combo. The song-based repertoire for the course is drawn from the straight-forward to more challenging arrangements of traditional popular music material, including rock, pop, and R&B. Course addresses the application of musicianship skills as they apply to ensemble awareness and effective rehearsal and performance techniques. Enrollment in this ensemble requires concurrent registration in private lessons.

**Showcase:** Course applies the upper-level performer's ensemble skills, musicianship, and knowledge of stylistic and historical precedent in creating a near-professional level performing band. The repertoire is drawn from structurally and harmonically challenging arrangements of contemporary and traditional popular music material, as applied in the contexts of rehearsal, studio recording, and stage presentation in various types of live performances. Enrollment in this ensemble requires concurrent registration in private lessons.

Credits: 3

**32-1620 Popular Contemporary Music**

Course examines the history of contemporary music since 1950, particularly rock and roll, and the social values that have contributed to its stylistic development. The exploration of the trends in popular music focuses on movements that reflect important political and cultural currents in the United States and across the globe.

Credits: 3

**32-1120 Theory, Harmony, and Analysis I**

Fundamental course in music literacy covers basic concepts of notation, rhythm, tonality, and harmony, emphasizing in-depth understanding of intervals, triads, major and minor scales, and duple and triple meters. Students learn written musical theory for these topics and have the ability to replicate them through performance. Credits: 3

**SCIENCE & MATHEMATICS****56-2720 Calculus I**

Course introduces higher mathematics by examining the fundamental principles of calculus—functions, graphs, limits, applications of the derivative, anti-derivatives, area, and the integral. Course presents additional mathematical applications in business, the arts, and the social sciences. Credits: 4

**56-2721 Calculus II**

This course includes application of the derivative, the integral, differential equations, and the functions of two variables. Students discover the historical and logical developments of calculus. Applications in management as well as in the social, behavioral, medical, physical, and natural sciences are emphasized. Credits: 4

**56-3710 Calculus III**

In this, the final course of the Calculus sequence, we extend the ideas of single-variable Calculus to functions of several variables. Topics include vectors and vector-valued functions, partial and directional derivatives, optimization problems (including Lagrange multipliers), and multiple, line, and surface integrals. Applications include computation of length, surface area, volume and center of mass for figures in three dimensions.

**56-1720 College Mathematics**

Course covers essential mathematical skills expected at the college level. These skills are presented in an integrated way, with emphasis on applications of math. Topics include algebra, geometry, statistics, and trigonometry. Students solve problems, improve understanding of concepts, and interpret statistics and graphs. Effort is made to incorporate mathematical applications reflecting students' majors. Credits: 3

**56-2713 College Algebra and Trigonometry**

Course builds on the computational, problem solving, and graphing skills learned in college algebra. Key trigonometric concepts relevant to the arts and communication fields are introduced. Course provides the preparation required for calculus and some advanced computer graphics courses. Computer-aided instruction is included. Credits: 3

**56-2830 Fundamentals of Physics I**

This is a comprehensive algebra-based course designed to introduce students to important principles and ideas in physics. Central topics include motion, forces, Newton's Laws, friction, momentum, energy, rotations, fluids, and thermodynamics. Content will be delivered through lecture, demonstrations, group tutorials, and laboratory exercises. Credits: 3

**56-1810 Physics for Filmmakers**

This class is for students who wish to learn how to use laws of physics in more accurate and /or artistically deliberate choices in their filmmaking, as well as in debunking common movies errors and misconceptions. Emphasis is placed on motion, collisions, explosions, forces and energy. Other topics include the formation of images (optics), electrical, magnetic and atomic phenomena as well as Einstein's theory of relativity and quantum theory. All these are discussed within the context of their use in cinema through analysis of selected

film clips. The class includes relevant experiments that students have to perform and often also film. (Cameras are provided.) Students will have to complete a short 5-10 minute film project where they creatively apply some of the physics they learned.

Credits: 3

**56-2850 Physics for Game Developers**

This is a laboratory based science course that examines topics in physics that are relevant for game developers. Examples include the study of motion in one, two, or three dimensions; collisions between objects; rotation of massive objects; and explosions. Other topics include the study of motion under the influence of various forces such as gravity, friction, and propulsion forces. Laboratory activities complement the course and include experiments designed to illustrate and exemplify the main topics presented as theory.

Credits: 3

**56-1820 Science of Electronics**

Course provides an introduction to electronics. Students acquire knowledge in the fundamentals of electric circuit theory. Course teaches the operation and use of electronic components and instruments such as multimeters and oscilloscopes. Regular laboratories provide opportunities for hands-on activities. During the final weeks of the course students construct an electronic project.

Credits: 4

**56-2820 The Science of Acoustics I**

Course introduces the physics of sound and considers how it is perceived by the ear. The concepts and applications of acoustics include sound wave theory, sound in music and musical instruments, recognition of musical sound qualities, auditorium acoustics, and electronic reproduction of sound.

Credits: 3

**TELEVISION**

**40-2803 Culture, Race, and Media**

The media--television, film, and print--has a pervasive influence upon how we view the world. This course enables us to analyze subtle and subliminal messages about culture, race, ethnicity, gender, religion, class, and ability as presented to us through the media. Through open discussions of differences, research, and stimulating readings, we will learn who we are and why we view things the way we do. Expected outcomes include new insights into media influence and our responsibility as media makers, a research project, and self-examination of personal cultural and racial identity.

Credits: 3

**40-1302 Television Arts: Production**

This introductory class in the art of television production provides an overview, and basic, practical, hands-on experience in all aspects of today's trends in the television industry. Although taught in a studio environment, this course will cover camera operation, sound, lighting, video transitions, and graphics as they relate to all forms of production. The final project for the class is the completion of three full productions created by students in the class.

Credits: 3

## STUDENT RESOURCES AND INFORMATION

### STUDENT PROFESSIONAL AND ACADEMIC ASSOCIATIONS

#### COLUMBIA COLLEGE CHICAGO STUDENT SECTION OF THE **AUDIO ENGINEERING SOCIETY (AES)**

<http://aescolum.tumblr.com> - <http://www.facebook.com/group.php?gid=278926520977>

The Audio Engineering Society [<http://www.aes.org>] is the major professional society dedicated specifically to the audio profession. Members receive the monthly Journal of the Audio Engineering Society, where many scientific audio-related research and innovations are introduced, as well as advance notification of conventions, conferences, and local chapter meetings. AES members include professionals from all areas of audio including acoustics, sound contracting, recording, live sound reinforcement, research, design, film and video sound, multi-media, marketing of audio-related products, education, and more.

The AA+A AES Student Section is the principle student group at our Department and functions as the AA+A liaison to the AES local Chapter. The group is committed to bringing together students with a mutual interest in audio technology. Through regular meetings, students have the opportunity to interact with other audio students at all levels of study, in effect networking with their potential future colleagues, employers, or employees. Any student enrolled at Columbia College with an interest in audio may join the group and attend AES events. Planned events often incorporate guest speakers such as local professionals, industry leaders, and audio innovators. Other possible monthly activities include critical listening sessions, student project presentations, equipment evaluations and comparisons, and audio facility tours.

#### *Sample Past Activities:*

- Road trips to attend the annual Central Region Audio Engineering Society (AES) Student Summit in St. Louis
- Organization and promotion of a presentation by George Blood, President of Safe Sound Archive, that discussed a) best practices in the handling of analog magnetic recordings and b) findings on the actual accuracy of the data we get from analog-to-digital converters
- Planning and hosting of the Audio Arts + Acoustics Gallery as part of the Manifest Urban Arts Festival
- Assistance with student portfolio showcases
- DIY workshops on cable soldering, and minor audio equipment repairs
- Promotion of student participation in the annual AES conference, with departmentally subsidized trips to Saint Louis, San Francisco, etc.

#### *Officers (elected annually):*

*President - Vice-President - Secretary - Treasurer - Representative(s) to Columbia SOC  
Faculty Advisor: Ben Sutherland, Ph.D. [bsutherland@colum.edu](mailto:bsutherland@colum.edu)*

*E-mail: [AES\\_Columbia@colum.edu](mailto:AES_Columbia@colum.edu) (not case-sensitive)*

COLUMBIA COLLEGE CHICAGO STUDENT CHAPTER  
OF THE **ACOUSTICAL SOCIETY OF AMERICA (ASA)**

The Acoustical Society of America [<http://acousticalsociety.org>] is a national organization dedicated to increasing the knowledge of acoustics, facilitate its dissemination, and promote its practical application. The AA+A student chapter of ASA is committed to helping students network, exchange information and ideas, and learn more about the world of acoustics at the local level. The chapter members are involved in activities like academic enrichment, professional development, resume building, technical presentations, and industry tours.

The student chapter elects four officers every year. At least two of the four officers must have junior or earlier status to ensure the continuity of the organization's leadership through the following years. Meetings are held twice a month, generally on a weekday evening. Anyone interested in acoustics is welcome!

*Sample Past Activities:*

- Trip to Northwestern University's anechoic chamber
- Promotion of student participation in and presentations at the biannual ASA Conventions
- Invited speakers from the industry

*Officers (elected annually):*

*President - Vice President - Treasurer - Secretary and Chapter Representative to ASA and to Columbia SOC*

*Faculty Advisor: Peter Zhang, Ph.D. [pzhang@colum.edu](mailto:pzhang@colum.edu)*

*E-mail:*

[CCASA@loop.colum.edu](mailto:CCASA@loop.colum.edu) (not case sensitive)

*E-mail listserv:*

[ColumbiaASACChapter@gmail.com](mailto:ColumbiaASACChapter@gmail.com) (not case sensitive)

*Google Group:*

[http://groups.google.com/group/ccc\\_asa](http://groups.google.com/group/ccc_asa)

COLUMBIA COLLEGE CHICAGO  
**STUDENT GOVERNMENT ASSOCIATION (SGA)**

<http://www.colum.edu/students/Engagement/student-government.php>

The Student Government Association of Columbia College Chicago represents the student voice and endeavors to construct a more perfect union. It serves as a liaison between students and the faculty and staff, and administration in order to ensure the welfare of our unique and diverse art and communication community. Through leadership and strong representation, it strives to provide students with opportunities to grow academically, artistically, professionally, and personally.

SGA meetings take place every Tuesday at 5 p.m. in the Loft, located in the fourth floor of 916 S. Wabash, during the fall and spring semesters. It is comprised of five executive officers and 30 elected senators, each representing the needs of students in specific academic departments and the student body at large.

*SGA President:* Cassandra Norris, [sgapresident@colum.edu](mailto:sgapresident@colum.edu), 312 369-6657

*AA+A Senator: elected annually*

## **EMPLOYMENT OPPORTUNITIES AT COLUMBIA COLLEGE CHICAGO**

All open positions and application forms are posted on the Columbia Works Web-site.

[http://www.colum.edu/Students/Career/Student\\_Employment/Welcome\\_to\\_ColumbiaWorks.php](http://www.colum.edu/Students/Career/Student_Employment/Welcome_to_ColumbiaWorks.php)

### **Teaching Assistants in the Department of Audio Arts and Acoustics**

A number of courses in the Department of Audio Arts and Acoustics involve lab or demonstration components that require the additional help of teaching assistants (TAs).

TA responsibilities typically include: maintaining attendance records in large classes, assisting in the set-up of demonstration systems and/or lab stations, providing additional one-on-one help to students, and assisting in the grading and/or evaluation of student work.

In addition to earning pay, working as a TA provides students with opportunities to hone in on their audio knowledge, improve their communication and organizational skills, and develop potentially valuable professional relationships with instructors.

Ask your instructors and AA+A advisor for details.

### **Studio Assistant in the Department of Audio Arts and Acoustics**

The job of the studio assistant is to support students and faculty in the day-to-day use of the studios, classrooms, and audio equipment. Responsibilities include assisting faculty with room set-up and strike and occasionally helping with in-class demonstrations. They also include assisting students with studio and equipment checkout and general operation overview.

With the range of duties and depth of knowledge expected, these positions are generally filled with students who have completed at least one semester of post-BAS studio/lab courses. The most significant "perk" for the Studio assistant is the opportunity to take advantage of studio and equipment "down time." If a room is not booked and assuming all general duties have been covered, studio assistants are authorized to take advantage of that time to work on projects that will help them increase their knowledge and proficiency in the use of audio equipment and facilities.

Studio assistants work an average of 20 hours per week. Work schedules are adjusted from semester to semester to accommodate each student's class schedule.

Contact: Tony Miccolis 312 369-8274 [tmiccolis@colum.edu](mailto:tmiccolis@colum.edu)

### **Office Assistant in the Department of Audio Arts and Acoustics**

The Office Assistant position is open to Audio Arts and Acoustics students who are at sophomore level or above.

Office Assistants are responsible for keeping the Audio Arts and Acoustics office running smoothly and for cultivating a professional atmosphere. Responsibilities include answering the department phones, addressing scheduling, tutoring, and other administrative questions by students, monitoring printers and other office equipment, organizing office supplies, entering data, and performing other duties as assigned. Candidates must have great interpersonal skills, advanced computer skills, and a propensity for self-organization.

In addition to earning pay, working as an Office Assistant provides students with opportunities develop professional-level communication, organizational, and administrative skills.

Contact: Sonija Dewberry 312 369-8820 [sdewberry@colum.edu](mailto:sdewberry@colum.edu).

## **Tutors in the Department of Audio Arts and Acoustics**

Tutor positions in Audio Arts and Acoustics require a GPA of 3.0 or higher and completion of the Basic Audio Systems (BAS) course with a grade of B+ or better.

Tutors provide academic assistance to all students enrolled in the BAS course. Candidates should be prepared to function in a teaching capacity within both, group and one-on-one settings. Strong interpersonal skills are a must. Hired tutors are expected to seek advice on classroom instruction, pedagogy, and course content from the BAS instructors. Another recommended resource for tutor training is the Columbia College Chicago Learning Studio.

In addition to earning pay, and similarly to teaching assistants, AA+A tutors have opportunities to hone in on their audio knowledge, improve their communication and organizational skills, and develop potentially valuable professional relationships with instructors.

AA+A Contact: Sonija Dewberry 312 369-8820 [sdewberry@colum.edu](mailto:sdewberry@colum.edu)

Learning Studio Contact (for hired tutors): Julie Redmond 321 369-7470

## **Academic Technology and Facilities Staff**

The College maintains an A/V service department, which provides equipment such as audio, video, slide, film, and multi-media systems to classrooms and lecture halls throughout the college.

Responsibilities include working in the A/V office handling check-out and set-up, or set-up and operation of systems in lecture halls that include the Ferguson Auditorium and Hokin Hall.

These positions require a good base of knowledge and experience in audio-visual media and students with good mechanical and technical aptitude are especially sought out.

Contact: Tim Bodzioney 312 369-7127 [tbodzioney@colum.edu](mailto:tbodzioney@colum.edu)

## **Music Department Audio-Visual Staff**

The Music Department maintains an extensive inventory of audio and visual equipment for use in music classes, presentations, and concerts. Relevant positions require a good base of knowledge and experience in audio-visual media.

Contact: Steve Hadley 312 369-6244 [shadley@colum.edu](mailto:shadley@colum.edu)

## **Department of Exhibition and Performance Spaces**

The Department of Exhibition and Performance Spaces maintains sound systems in numerous College Galleries, used for various College and student activities (e.g. lecture presentations, gallery installations, student-organized parties and dances, etc.). The Hokin Gallery also programs a wide variety of music concerts featuring local, national and international performers.

This position is officially part-time, but can involve as many as 30 hours of work in a single week, depending on event schedules. Duties include operation and maintenance of Gallery sound systems, purchasing/renting of additional equipment, technical coordination with event producers, student organizations, and bands, and other general organizational duties, as needed.

This position is usually awarded to Live and Installed Sound students at a sophomore status or lower. The Hokin directors generally look for someone who has a minimum 3.0 grade-point-average and is ready to commit to the position for at least one year.

Contact: Ted Cho 312 369-8572 [tcho@colum.edu](mailto:tcho@colum.edu)

## SCHOLARSHIPS AND INTERNSHIPS

Columbia College Chicago offers several scholarships and awards to help you offset the cost of your education. We have listed a few that may be of interest to you as part of the Audio Arts and Acoustics program.

**For a complete and up-to-date list of scholarships and application procedures and deadlines visit <http://www.colum.edu/scholarships>**  
(make sure to explore the "Other Scholarship Opportunities" area)  
**and speak with your advisor.**

### SAMPLE SCHOLARSHIP OPPORTUNITIES

#### COLUMBIA COLLEGE CHICAGO AWARDS

##### **The Academic Excellence Award**

The President and Board of Trustees have established the Academic Excellence Award of Columbia College. These scholarships are designed to provide financial assistance to worthy and talented continuing students. Each award recipient will receive a \$3,000 scholarship. The availability of these scholarships varies. Application deadline is early spring. Applications may be obtained from the Financial Aid Office.

##### **The Hermann Conaway Scholarship**

The Hermann Conaway Scholarship is awarded to one student at the junior or senior level who has demonstrated a leadership role at Columbia College or the outside community. Awards are based on financial need, academic achievement and demonstrated leadership. The total award amount is \$2,000 for one academic year; \$1,000 awarded in the Fall, and \$1,000 awarded in Spring. The Hermann Conaway Scholarship is awarded each spring for the following academic year. Students must be enrolled full-time. Applications are available through the Financial Aid Office or the Associate Provost's office. Application deadline: April 1<sup>st</sup>.

##### **The Hillary R. Kalish Scholarship**

The Hillary R. Kalish Scholarship assists students who are medically and financially challenged complete an undergraduate degree at Columbia College. Multiple awards are made each year at a maximum amount of \$2,500 each. Applications are available through the Associate Provost's Office. Application deadline: May 1<sup>st</sup>.

##### **The Presidential Scholarship**

The Presidential Scholarship is a competitive, merit-based, four-year program designed for entering freshmen. Scholarship applicants are expected to excel in their academic achievements as well as demonstrate significant accomplishment, talent or ability in their intended major. The number of awards each year varies and is dependent upon funding. Application deadline: February 1<sup>st</sup>

## DEPARTMENT OF AUDIO ARTS AND ACOUSTICS AWARDS

**The Jeremy Jefferis Hill Scholarship** (for Acoustics seniors)

[http://www.colum.edu/Admissions/scholarship/Scholarships/Jeremy\\_Jefferies\\_Hill\\_Scholarship.php](http://www.colum.edu/Admissions/scholarship/Scholarships/Jeremy_Jefferies_Hill_Scholarship.php)

The Jeremy Jefferies Hill Memorial Scholarship was established to acknowledge academic achievement and special accomplishment of outstanding senior-level students at the Audio Arts and Acoustics Department, Columbia College Chicago, who major in acoustics. The \$2,000 scholarship is awarded annually during the Spring semester to one (1) graduating senior on the basis of demonstrated interest for advanced studies in architectural acoustics, scholastic abilities, and financial need. Application deadline: Changing each year; see the above link for current details. Contact: Dominique Chéenne 312 369-8806 [dcheenne@colum.edu](mailto:dcheenne@colum.edu)

**The Hammerman Scholarship** (for AA+A majors with 60-90 credits completed)

[http://www.colum.edu/Admissions/scholarship/Scholarships/Hammerman\\_Scholarship.php](http://www.colum.edu/Admissions/scholarship/Scholarships/Hammerman_Scholarship.php)

The Hammerman Scholarship was established in 1998 thanks to a generous gift by Sol and Celia Hammerman, brought to the then "Radio and Sound" department by Ms. Enid Long, Columbia College Trustee and the donors' daughter. Currently the scholarship is stewarded by the Audio Arts and Acoustics Department and is awarded in Spring by AA+A faculty nomination. As this is an endowed scholarship, the precise award amount available each year fluctuates, depending on the investment performance of the College's endowment. Contact: Pantelis Vassilakis 312 369-8821 [pvasilakis@colum.edu](mailto:pvasilakis@colum.edu)

## OTHER SAMPLE SCHOLARSHIP OPPORTUNITIES

**Illinois Sheriffs' Association Scholarship Program**

This scholarship is for full-time undergraduates who are permanent residents in an Illinois county. It is awarded on the basis of the student's ability, merit, character, financial need, and sincerity of purpose in reaching his/her goal. Application deadline: March 1st.

**David R. Ruben Scholarship**

The David R. Ruben Scholarship Program was established to assist outstanding full-time students at Columbia College defray tuition costs. Scholarship awards are based on academic achievement and demonstration of financial need. The total amount of the award is \$2,000 for one academic year, spread over two semesters. In some cases, awards may be considered for renewal provided that the student submits a new application each year and continues to meet all current eligibility criteria. However, because the number of awards is limited, student applications are evaluated by considering the number and strength of all applications received in a given year, regardless of whether or not a student has received the award in the past. The application process includes submission of a five-page essay describing the applicant's goals and accomplishments.

## INTERNSHIPS

An internship can be one of the students' most exciting, challenging, and rewarding "capstone" experiences. Internships give students first-hand experience in their chosen field and an opportunity to explore how things learned in the classroom apply in the real world. One of the many added benefits of internships is that critical first "professional experience" entry on a student's resume. For some, the internship supervisor also becomes one of the student's professional references. We have found that most students who successfully complete internships are employed in their chosen field shortly after graduation.

To be eligible for an internship, Audio Arts + Acoustics students must have a minimum 3.0 GPA in their area of concentration. Transfer students must also complete 2 semesters at Columbia College Chicago before they are eligible to register for an internship.

There is a five-to-one ratio of hours worked per week to credits earned, so students may register for 1-6 credits, depending on the amount of hours per week spent at the internship location. Typically, students register for 3 credits, which equates to 15 hours of work per week over 15 (Fall and Spring semesters) or 12 (Summer semester) weeks. Registration must be completed by the end of the second week of the internship semester (i.e. approximately mid-September for Fall, the first week of February for Spring, and the first week of June for Summer).

Internship credits count as sound electives and are not a requirement in any of the Department's concentrations. Only up to 12 internship credits may count toward graduation.

Preparation is the key to a successful internship. Students should begin meeting with their advisor and the internship coordinator a semester in advance of their internship. This is an important time for the student and advisor to review transcripts and work with the internship coordinator to make the best "match" between a student and a potential internship site.

Currently, the Department of Audio Arts and Acoustics has ongoing relationships with leading companies in Chicago, representing all of the Department's concentrations.

For a sample list of possible AA+A internships, visit:

[www.colum.edu/Academics/Audio\\_Arts\\_and\\_Acoustics/AA%26A\\_Internships.php](http://www.colum.edu/Academics/Audio_Arts_and_Acoustics/AA%26A_Internships.php)

For an up-to-date list of companies and organizations that accept internship applications contact the AA+A Internship Coordinator, Elliott Scott ([escott@colum.edu](mailto:escott@colum.edu) - 312 369-8802).

## AUDIO ARTS AND ACOUSTICS FACILITIES AND EQUIPMENT POLICIES

The educational facilities of the Audio Arts + Acoustics Department, located at 33 East Congress Parkway, are designed to serve the students enrolled in AA+A curriculum and, schedule permitting, provide recording, reinforcement, and other audio and acoustics services to the Columbia College community.

Our facilities include the following types of classrooms, studios, and labs:

- Digital audio production classrooms and labs for introductory and intermediate-level audio and audio-for-visual-media production classes
- Classrooms/labs for audio theory, installed sound, and acoustics classes
- Reverb, semi-anechoic, and sound transmission chambers
- A live sound reinforcement lab
- Computer labs for audio production and acoustical modeling and measurement
- Advanced digital audio production “mini-suites”
- Three control rooms tied to two studio spaces for recording classes and labs

### General Booking Policies and Procedures

Within the following guidelines, classes have particular time limits and structures for lab bookings. Instructors provide that information at the beginning of each semester:

#### Open for Classes

Monday through Friday	8:30 AM to 10 PM
Saturday	9:30 AM to 5:30 PM

#### Scheduling Office Hours:

Monday through Friday	10:00 AM to 10:00 PM
Saturday	9:30 AM to 5:30 PM
Sunday	Closed

#### Equipment Center Hours:

Monday through Friday	10:00 AM to 10:00 PM
Saturday	9:30 AM to 5:30 PM
Sunday	Closed

#### Studio & Lab Reservations:

Monday through Friday	10:30 AM to 9:30 PM
Saturday	10:30 AM to 5:00 PM
Sunday	Closed

- In the best of circumstances, equal priority will be given to all studio bookings. However, when demand for studio time is high, priority will be given to course-related sessions and labs.
- Students can book a minimum of one to a maximum of three hours per session or lab, up to seven days in advance.
- Other than class meetings, no student or group may have more than one lab or session on the books at any one time. As soon as a session is completed, the student or group may book another session.
- Additional time can be booked on a "space-available" basis the day of the session.
- If a student needs to cancel, or is more than 15 minutes late, and does not notify the scheduling office in advance, the time is forfeited and the student will be denied studio privileges for one week.
- Scheduling may be done with the scheduling office in person or by phone (312-369-8267).
- The Scheduling Office and the Equipment Center are located just inside the suite of the Department's lower level facility.
- At the time of the booking, students must provide the following information: name, phone number, instructor name, studio, reservation date/times, and type of lab (e.g. tracking, overdub, voice-over, mix, etc.).
- Additional equipment (e.g. microphones, outboard, etc.) needed is available for checkout on a first-come, first-served basis.

### **Regulations / Approved Activities**

The use of the facility is a privilege. Failure to observe the following regulations of the Department will result in the suspension of studio privileges.

- Smoking, eating or drinking is strictly prohibited in the studios, control rooms, and classroom-labs
- Students are expected to operate speaker systems at reasonable and safe levels
- Sessions and labs must start on time and end within the booked time
- Session and lab attendance is limited to students directly involved in a class project and those, if any, "hired on" as talent.  
No "guests" will be allowed.

- Columbia College is not responsible for personal belongings brought into its facilities.
- Misuse or abuse of the studios and labs cannot be tolerated - let's respect and take care of this great facility for the benefit of all!

In accordance with the College-wide and Departmental policies on facilities usage, the following are approved activities for studios and labs:

- Class meetings where a studio is a regular part of the teaching environment
- Assigned lab work for production or practicum classes
- Occasional class meetings where a studio will provide valuable illustration to a lecture topic
- Preparation of materials for class demonstration
- Studio time booked by an authorized student engineer (College Studio Operations) on behalf of a film, video, radio, music, or other College department class project.
- Department-approved activities that have the sponsorship of a faculty member and an authorized engineer in charge of the session
- Other uses by students who have completed coursework appropriate to the studio or lab activity, as approved by the Studio Manager.

### Studio and Lab Use Procedure

- The student's ID card must be scanned for any equipment or facilities checkout and must be scanned again when all equipment and/or rooms have been checked back in.
- Equipment is available for scheduled time only. Any additional equipment needed can be checked out on a first-come, first-served basis.
- The student in charge of the session is responsible for cleanup, leaving the studio in the same condition as it was found (pristine, of course!).
- Students are encouraged to report to the studio manager any problems they encounter and to share any ideas that would contribute to a better operation.

### Trouble Reports

It is the responsibility of all students, faculty, and staff to report trouble encountered with equipment in the AA+A facilities at 33 East Congress Parkway. Accurate and timely reports of trouble insure that repairs are executed quickly and, in the mean time, no one experiences any surprises with a piece of equipment that would otherwise be expected to be in working order.

In other words, **if you encounter a problem, please report it!**

Every classroom, lab and studio has a supply of easy-to-use "heads up" forms for reporting problems with equipment. When reporting a problem, enter your name and the date, and identify the room and piece of equipment with the problem. A short description of the problem encountered goes in the box in the middle of the form. Obviously, the more detail in the report, the easier it will be for the technical staff to correct the problem.

We have tried to simplify this part of the reporting process and make it easy to complete the form, even when in the "heat of battle," teaching a class or completing a lab assignment. Trouble Report forms must be submitted to the studio manager on duty. The manager or a designated studio assistant must then check and "verify" the problem and enter any additional information as needed. Once verified and signed, the manager or designated studio assistant enters the information into the technical database. We hope that this system will help speed repair time and, in the meantime, prevent unnecessary surprises!

### **Preventing equipment damages and theft**

Equipment theft and malicious damages are always surprising and disturbing. A small minority of our students seems to undermine our operations, disrespect student needs, and hijack our educational mission.

Help us stop this now!

If you see a fellow student engage in suspicious activity, confront them; give them a reason to rethink what they are doing and an opportunity to avoid consequences. If you don't feel comfortable doing so, immediately alert a staff member. Our equipment and facilities are needed by all of us so, when it comes to damages and theft, protect it as your own. We need to reverse the trend for vandalism, disrespect, and down-right criminal activity of a few that affects us all. Until this has been accomplished, the department will be taking heavy security measures that will necessarily reduce access to equipment and facilities for all.

Let's change our culture into one of responsibility and respect to minimize the need for policing and proceed productively and in good spirit as colleagues.

## AA+A INSTRUCTIONAL RESOURCE FEES

**Flat fee: \$70.00 for all 2-4-credit courses**

**\$140.00 for all >4-credit courses**

***Note:** Regardless of source, funds raised by IRFs are managed as a whole by the College, not by the individual Departments.*

For a list of current Instructional Resource Fees for all Departments at the College see

[http://www.colum.edu/student\\_financial\\_services/create-a-plan/calculate-your-costs/tuition-and-fees/2011-2012/instructional-resource-fees-2011-2012.php](http://www.colum.edu/student_financial_services/create-a-plan/calculate-your-costs/tuition-and-fees/2011-2012/instructional-resource-fees-2011-2012.php)

In an effort to provide greater transparency and predictability for student costs, Columbia College has restructured mandatory course fees to better cover resources and materials used, based on a survey of course requirements across the College's arts, media and academic disciplines. The new Instructional Resource Fees (IRFs) have been effective since the Fall 2010 semester.

Prompted by student concerns – voiced by the Student Government Association – about the basis for the course fees, IRFs are the result of an exhaustive and comprehensive analysis of Columbia's historic course fee structure and are designed to better reflect the resources required for teaching the College's various disciplines. While fees will continue to be assessed by the College on a course-by-course basis, all courses in our Department currently carry the fee indicated above.

The College intends to hold the instructional resource fees at the current levels for the next three years. After that time, instructional expenditures will again be analyzed and fees may be reset.

The fee amounts will be included in the course catalog and on the Student Financial Services website.

[http://www.colum.edu/Student\\_Financial\\_Services/index.php](http://www.colum.edu/Student_Financial_Services/index.php)

[www.colum.edu/AAA](http://www.colum.edu/AAA)

312-369-8820  
312-369-8427 (fax)

audio arts  
+acoustics

AT COLUMBIA COLLEGE CHICAGO

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