

In Friend of OCW's January 2015 newsletter

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New Sounds on OCW



Students in 21M.355 demonstrate their design assignments on "Flexology," an approach to conducted improvisation. (Photo by MIT OpenCourseWare.)

A great way ring in the New Year is to listen to some new and different sounds and to revisit some familiar sounds with a deeper understanding.

OCW has just published three courses from MIT's department of [Music and Theater Arts](#) that feature rich arrays of learning and listening resources. All courses have [This Course at MIT](#) pages, in which the instructors share insights about their teaching.

- [21M.250 Beethoven to Mahler](#), taught by Teresa Neff, includes a full discography, readings, lecture notes, plus some listening guides, musical scores, and links to music videos on YouTube.

This treatment of the Romantic genre takes its place within OCW's complete music history sequence on periods of Western classical music: [21M.220 Early](#)

Thank You for Your Support!

Friend of OCW, your support makes it possible for us to continue to create a foundation for a whole new generation of online learning opportunities.

We hope you'll help us spread the word about OCW by telling your friends and family to visit our site and we welcome you to connect with us further on our [social media sites](#).

We encourage you to learn more about our [corporate sponsorship program](#) and [other ways to contribute to OCW](#).

Wishing you a happy and healthy new year.

[Music, 21M.235 Monteverdi to Mozart: 1600-1800, 21M.250 Beethoven to Mahler, 21M.262 Modern Music: 1900-1960 and 21M.263 Music Since 1960.](#)

- [21M.355 Musical Improvisation](#) is taught by Mark Harvey and Tom Hall, along with several guest artists. The OCW course highlights the experiential and participatory nature of learning to improvise. [Videos of selected classroom sessions](#) cover Miles Davis' "In A Silent Way," Indian classical music, electronics, Mark Harvey's signature method of conducted improvisation called "Flexology," and more. Together, they show how lectures, labs, guest artist workshops, and student demonstrations are woven together to help students learn.

The classroom videos are complemented by [concert videos](#) by the guest artists FiLmprov (improvising to accompany a film), Natraj (channeling traditions of world music), Neil Leonard and Robin Eubanks (incorporating live electronics), and Tre Corda (blending classical and jazz).

- [21M.065 Introduction to Musical Composition](#) aims to improve students' "access to musical creativity." Taught by Professor Keeril Makan, the course has a novel approach to composition, as it is designed for students of all backgrounds, including those who have no musical training. Professor Makan discusses how he deals with the challenge of this approach in his Instructor Insights section of his [This Course at MIT page](#).

With a wonderfully varied listening program, the course is structured as a series of projects, both written and recorded. Written assignments are meant to "develop musical ideas and notation methods that effectively transmit them to performers," as the syllabus says. Students also create original recordings, using models such as Bach's *Brandenburg Concerto Number 5* and Ligeti's



OCW is grateful for the support of:



Artikulation, sometimes employing free software programs, and sometimes recording ambient sounds. You can listen to some of these student projects, including one whose sounds originate from radioactive gamma particle decay, in the [Composition Assignments](#) section.

New Courses



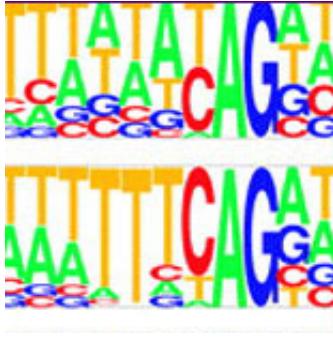
[21W.021 Writing and Experience: MIT: Inside, Live](#)



[21F.053 Understanding Contemporary French Politics](#)

- [2.71 Optics](#)
- [7.345 The Science of Sperm](#)
- [11.S945 Urbanizing China: A Reflective Dialogue](#)
- [CMS.608 Game Design](#)

Updated Courses



[7.91J Foundations of Computational and Systems Biology](#)

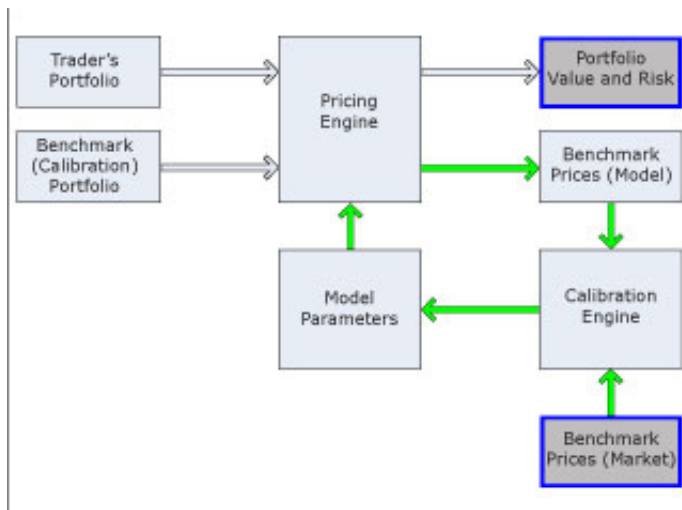
[24.400 Proseminar in Philosophy I](#)

- [15.665 Power and Negotiation](#)
- [17.50 Introduction to Comparative Politics](#)
- [21A.302J Dilemmas in Bio-Medical Ethics: Playing God or Doing Good?](#)
- [21F.711 Advanced Spanish Conversation and Composition](#)

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OCW Educator



Pricing Model Diagram. (Image courtesy of Ivan Masyukov.)

Secrets of Financial Wizardry Revealed!

All those theorems, equations, models, and matrices that make math so abstract and ethereal—what can they do for your pocketbook?

Quite a lot, actually, if you apply them to the world of finance.

You can see for yourself by exploring [18.S096 Topics in Mathematics with Applications in Finance](#), an innovative new course just published on OCW.

The course has four instructors—two from the MIT Mathematics Department (Peter Kempthorne and Choongbum Lee) and two from the financial firm Morgan Stanley (Vasily Strela and Jake Xia). Both Strela and Xia are MIT grads who “were interested in creating a meaningful collaboration with MIT as a way to give back to the institution,” as they say on their [This Course at MIT page](#). So they proposed the idea of this hybrid course to their former department, where it seemed like a winner.

Just so you get the idea: The first four of the 10 course goals would have students:

1. Be able to derive price-yield relationship and understand convexity.
2. Bootstrap a yield curve.
3. Compute standard Value At Risk and understand assumptions behind it.
4. Estimate volatility of an option.

The OCW course site has a superabundance of content: full video lectures, lecture notes and slides, case studies, assignments, and project descriptions, plus a handy glossary of financial terms and a list of useful readings. The lectures alternate between mathematical topics and their applications in finance,

so students get the best of both theory and practice.

In the Instructor Insights section of their This Course at MIT page, the instructors reflect on their experience teaching the course and discuss how the course has developed and changed since they first envisioned it. They emphasize the hands-on nature of the course, encapsulated in the case studies, and the challenge of teaching a class with students of decidedly mixed mathematical backgrounds. They also note how being videotaped has given them a new perspective on their teaching: “We’ve learned so much about how to improve our own teaching by watching ourselves on the videos captured for MIT’s OpenCourseWare. It allows us to see ourselves as the students see us and to make changes in response to this unique perspective.”

And it provides students with the keys to pursuing a career in the real world, where money often seems like so many numbers.

Highlights for High School



Student actors, singers, and musicians from MIT share the stage in *A Midsummer Night's Dream*, performing text by William

Shakespeare and music by Felix Mendelssohn. (Photo by Meng Heng Touch. Used with permission.)

“MIT has theatre classes?” a friend once asked, incredulously.

MIT may be known for its top-notch science and engineering programs, but did you know that the Institute also offers an astounding array of classes in the Humanities, Arts, and Social Sciences (HASS)? In fact, all MIT undergraduate students are required to take eight HASS classes to graduate.

Here at Highlights for High School, we provide a finely curated list of courses that are aimed at high school educators and their students. Offerings include everything from, yes, the foundation of the theatre, to ancient Greek history, to composing music with computers.

You can use these materials to find readings for your class, assign special projects or homework assignments, or to add other elements to your lesson plans. And of course, you can always browse these subjects just for fun!

Check out the full list of course materials in the [Humanities, Arts, and Social Sciences!](#)

MITx News



21W.789x Building Mobile Experiences

MITx on edX has abundant course offerings in the coming months and a number of these have counterparts on OCW.

Just consider what's cropping up in early February:

- [21W.789x Building Mobile Experiences](#)

In this course you can learn how to develop a large-scale mobile app that fits into people's everyday lives. It is co-taught by [Frank Bentley](#), Principal Research Scientist in Mobile Sensing and User Behavior Research at Yahoo Labs in California, and [Ed Barrett](#), Senior Lecturer in Comparative Media Studies and Writing at MIT. The two have developed a process for creating an app in which developers repeatedly meet with users and iteratively test their app solutions.

The MITx course starts on February 2 and is based on one taught on the MIT campus since 2006, *21W.789 Communicating with Mobile Technology*, which is represented on OCW in its [Spring 2011 version](#). Interested parties might check out the OCW course as a preview.

- [6.041x Introduction to Probability the Science of Uncertainty](#)

This course, beginning on February 3, teaches probabilistic modeling, including random processes and the basic elements of statistical inference. It was created by MIT Professors [John Tsitsiklis](#) and [Patrick Jaillet](#) and is running for the second time, now with Professor [Dimitri Bertsekas](#) on the teaching team, along with a number of MIT PH.D.s and graduate students.

As Professor Tsitsiklis says on the analogous OCW course, [6.041SC Probabilistic Systems Analysis and Applied Probability](#), “These days, you cannot understand what is going on around you if you do not understand the uncertainty attached to nearly every phenomenon. This is why probability is now a central component of scientific literacy.” The OCW course has full video lectures, recitation videos, and ample problem sets and other resources.

- [14.73x The Challenges of Global Poverty](#)

“Is extreme poverty a thing of the past? What is economic life like when living under a dollar per day? Are the poor always hungry? How do we make schools work for poor citizens?”

These heady questions are posed by Professors [Esther Duflo](#) and [Abhijit Vinayak Banerjee](#) on the homepage for this course offering, which they taught last year for the first time on edX. The course starts on February 3.

OCW publishes the [Spring 2011 version of their on-campus course, 14.73 The Challenge of World Poverty](#). The OCW course site includes full video lectures, lecture notes, writing advice, and other resources. The instructors’ [This Course at MIT](#) page includes an explanation of how they flipped their on-campus classroom by having the students watch the video lectures at home and answer questions online. This approach freed up class time during which student teams prepared and delivered presentations

on weekly case studies.

[> Visit all MITx on edX courses](#)

Views From Our Supporters



"I want to a part of the OCW effort to bring quality Knowledge across the globe and help make the world a better place to live for generations to come."

- Swaminathan,
Independent Learner

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