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Open Chemistry

OpenChem is first and foremost to extend the benefit that we have seen since 2009 from open and free publication of individual chemistry courses to an entire curriculum. What MIT did ten years ago with its OpenCourseWare initiative was to plant the idea of making quality educational resources universally accessible. The MOOCs have laudably extended this approach by providing instructional paths through individual courses at scale. What UCI hopes to do with this initiative is to present a coherent, full curriculum by a top faculty. Today, a learner can sit with us in our lecture halls and follow four years' worth of chemistry core classes and electives. That is the key innovation: making a full undergraduate education's worth of classes available for immediate incorporation in part or in full by institutions of higher education or by individual professors.

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Preparation Courses

- Chem 1P: Preparation for Chemistry

Year One

- Chem 1A: General Chemistry
- Chem 1B: General Chemistry
- Chem 1C: General Chemistry

Year Two

- Chem 5: Scientific Computing Skills
- Chem 51A: Organic Chemistry
- Chem 51B: Organic Chemistry
- Chem 51C: Organic Chemistry

Years 3 and 4

- Chem 107: Inorganic Chemistry
- Chem 125: Advanced Organic Chemistry
- Chem 128: Introduction to Chemical Biology
- Chem 131A: Quantum Principles
- Chem 131B: Molecular Structure and Elementary Statistical Mechanics
- Chem 131C: Thermodynamics and Chemical Dynamics

Graduate Courses

- Chem 201: Organic Reactions Mechanisms I
- Chem 202: Organic Reaction Mechanisms II
- Chem 203: Organic Spectroscopy

- What is the OpenChem initiative?** OpenChem is first and foremost to extend the benefit that we have seen since 2009 from open and free publication of individual chemistry courses to an entire curriculum. What MIT did ten years ago with its OpenCourseWare initiative was to plant the idea of making quality educational resources universally accessible. The MOOCs have laudably extended this approach by providing instructional paths through individual courses at scale. What UCI hopes to do with this initiative is to present a coherent, full curriculum by a top faculty. Today, a learner can sit with us in our lecture halls and follow four years' worth of chemistry core classes and electives. That is the key innovation: making a full undergraduate education's worth of classes available for immediate incorporation in part or by institutions
- What about labs? Homework? Readings?** Chemistry majors at the University of California, Irvine have access to high-quality, physical laboratories. We are reliant on institutions that adopt part or all of OpenChem to provide these services. The listings of homework and readings that we provide may be from commercial providers, such as publishers. They are provided as a courtesy for those who wish to follow along. We will eventually include no- or low-cost options that include these as course resources for chemistry learners.
- Which courses are included in the UCI's OpenChem initiative?** The selected courses include all required lecture courses that a UCI undergraduate needs for the Chemistry major. Additionally, a number of electives, including some graduate courses, are included. The full list is available [here](#) under the "Schedule of Courses" tab. Each course is listed according to its position in a sample undergraduate path for Chemistry majors.
- Why is UCI offering its Chemistry lectures for free?** There is both a history to this specific project with the filming of the first quarter of Organic Chemistry (Chem 51a) in 2009. That story is told [here](#). The lectures were posted to YouTube and became something of a hit. Because these lectures were so useful for UCI students who miss a class or want to review for the midterm or final, Professor Nowick became interested in publishing more of his classes. With the Internet and YouTube as the vehicle for publication, the additional cost of making available his classes to the entire world was close to zero. He soon realized that he was supporting a global community of learners and his enthusiasm translated to a departmental commitment in 2012 to publish the undergraduate curriculum through UCI's OpenCourseWare project.

5. **Okay, but, really, why is it free?** Because in the openly licensed format (CC-BY-SA 3.0, attribution required, sharealike), UCI contributes to global chemistry education at no marginal cost to itself beyond the already completed filming. Our own students also benefit by being able to review presentations and because it is available on YouTube, we don't have to worry about maintaining it on course pages behind password protection. By making it open, another institution or professor can use some or all of the video presentations without even having to contact us for permission. So we are fulfilling the mission of a land-grant, public university effectively and efficiently.

6. **UCI is a member of Coursera. Why aren't you offering these courses on one or another MOOC platforms?** We think that Coursera is a great platform, but it may not be the optimal platform for transfer of educational resources by other universities or community colleges. By publishing the video lectures with an open, Creative Commons license, another institution may incorporate one, two or all of the video lectures as may fit their needs. Furthermore, they don't have to ask permission. Permission is granted in advance through the license selection. Also, a learner can access these resources regardless of course dates.

7. **Can I get a degree from UCI through OpenChem?** Sorry, but the answer is no. While our goal is to promote learning the subject of Chemistry, we only award degrees to matriculated students at the University of California, Irvine.

8. **Can I get university credit for studying Chemistry through OpenChem?** It is possible that in the near future, these video lectures will be combined with labs and textbooks at other institutions, which may themselves award credit. We are in conversations with several companies and institutions that may want to use our course videos.

9. **Will the video lectures be captioned?** Yes, we are currently looking for partners to accomplish the captioning. A particular difficulty with Chemistry and other fields is that automatic translation only goes so far and the rest has to be reviewed by someone with a thorough knowledge of Chemistry to avoid mis-transcription of similar names or words. Once the video lectures are captioned, we will provide a text index and a text search.

10. **Can we provide feedback?** Yes, there is a page on our website for comments: <http://ocw.uci.edu/info/contact.aspx>.

11. **Are there other subjects that will follow OpenChem?** Isn't Chemistry enough? Seriously, the answer is yes. We are constantly in discussions with UCI schools and departments and are aware of other opportunities from subjects in which one or more courses may already have been filmed. Already, we have a growing collection of Math and Physics courses.

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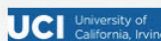
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UCI OpenCourseWare is an open education project supporting the needs of learners and educators everywhere: on our campus, within California, and the rest of the United States and the world. Support global education.



Unless otherwise noted.



Emory Open Education Initiative

A pilot program to promote Open Educational Resources (OERs)

 Search



Emory Open Education Initiative

Source: Wikimedia Commons

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EOEI Projects

Several projects have come to fruition from this initiative (others are still a work-in-progress and will be posted when they are ready).

- This is a student-generated OER project using Wikipedia from Professor Steven Kraftchick's theology graduate course.
- This is a video created by Karlene Coleman, genetics professor, about a family and their journey with Cystic Fibrosis: Sam's Story – YouTube
- This is an app called PediaBP from Professor Hope Bussenius from the School of Nursing. The goal of the Take2Heart Program is for every child and adolescent to receive an accurate blood pressure reading each year, and in doing so, lower the cardiac risk of pediatric patients.
- This is a German grammar tutorial website, all videos are created by students within the German program.

Biology 1510 Biological Principles

Georgia Tech Biology



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[Video Upload Instructions](#)

Biology 1510 Summer 2016

Posted on [May 11, 2016](#) by [shanakerr](#)

Welcome to Biology 1510 for Summer 2016!

Select course readings from the menus above by Module:

- Molecules and Metabolism
- Genes and Genomes
- Evolution
- Ecology

Lecture materials can be downloaded from t-square

Instructions for the group video project will be available later in the term.

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Featured Course

[Ethics of Human Subject Research](#)

"I assist physicians with study design and data analysis. I also need this knowledge for reviewing protocols in my role as Institutional Review Board Coordinator." Karen, United States

Vaccine trials are governed by research ethics, such as informed consent and privacy.

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"I have been asked to provide an Introductory Epidemiology and Biostatistics course for a Physician Assistant program and of course want to share with them the wonderful experience I had in Quant Methods 10 years ago now!!!!!! Wow!! Thank you for making the courseware available and I am so glad that I have the opportunity to give you the attribution you so richly deserve for enriching my life with Epi and Biostats!! Thank you!"
– Janice Shirley, United States
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College Success

College Success has a student-friendly format arranged to help students develop the essential skills and provide the information they need to succeed in college.

Criminal Law

Let's face it, legal textbooks can be dry. This is unfortunate because law, especially criminal law, is an intrinsically compelling topic. Criminal Law employs a variety of instructional techniques that should engage from start to finish.

Exploring Business

Introduces students to business roles and concepts in an exciting way. This text will help you decide whether business is right for you and, if so, what areas of business you'd like to study further.

Financial Accounting

This book is intended for an undergraduate or MBA level Financial Accounting course. It covers the standard topics in a standard sequence, utilizing the Socratic method of asking and answering questions.

Human Resource Management

Teaches HRM strategies and theories that any manager - not just those in HR - needs to know about recruiting, selecting, training, and compensating people.

Information Strategies for Communicators

by Kathleen Hansen and Nora Paul
The definitive text for the information search and evaluation process as practiced by news and strategic communication message producers. Currently used at the University of Minnesota School of Journalism and Mass Communication; JOUR 3004W/V, Information for Mass Communication.

Information Systems: A Manager's Guide to Harness Technology

Information Systems: A Manager's Guide to Harnessing Technology is intended for use in undergraduate and/or graduate courses in Management Information Systems and Information Technology.

Principles of Social Psychology

Provides students with an introduction to the basic concepts and principles of social psychology from an interactionist perspective. The presentation of classic studies and theories are balanced with insights from cutting-edge, contemporary research. An emphasis on real world examples and applications is intended to guide students to critically analyze their situations and social interactions in order to put their knowledge to effective use.

Research Methods in Psychology

While Research Methods in Psychology is fairly traditional— making it easy for you to use with your existing courses — it also emphasizes a fundamental idea that is often lost on undergraduates: research methods are not a peripheral concern in our discipline; they are central.

Social Problems: Continuity and Change

A realistic but motivating look at the many issues that are facing our society today. As this book's subtitle, Continuity and Change, implies, social problems are persistent, but they have also improved in the past and can be improved in the present and future, provided that our nation has the wisdom and will to address them.

Sociology: Understanding and Changing the Social World

Makes sociology relevant for today's students by balancing traditional coverage with a fresh approach that ironically takes them back to sociology's American roots in the use of sociological knowledge for social reform.

Understanding Media and Culture: An Introduction to Mass Communication

This text will support an engaging and interesting course experience for students that will not only show them the powerful social, political and economic forces will affect the future of media technology, but will challenge students to do their part in shaping that future.

Writing for Success

Writing for Success is a text that provides instruction in steps, builds writing, reading, and critical thinking, and combines comprehensive grammar review with an introduction to paragraph writing and composition.



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**Adaptive Map**
Digital Textbook Project

Engineering Statics

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About the Adaptive Map Tool:

The Adaptive Map tool aims to enhance learning by providing advance organizers, in the form of expert generated concept maps, to the user. This is realized through the concept map based navigation system that is central to the design of the Adaptive Map software. By providing an advance organizer (a high level, easy to understand, overview of the information) the tool subtly encourages the user to keep the big picture in mind, helping users connect new information to previously learned topics.

Because concept maps can become overwhelming when they become too large, the interactive navigation system is also designed to adapt the visuals to the user's current focus. This ensures that the user gets a relevant overview of the information they are currently examining, but that they not visually overwhelmed with irrelevant details.

The tool has been tested in the classroom and was shown to be more effective than a traditional paper textbook in two respects. First, as predicted with the design, the tool encourages users to spend more time attending to an overview of the information, helping students build a skeleton they can fit details into later. Second, the tool encouraged users to step back and review topics from previous sections that were relevant to the topics they were learning. This combination of behaviors in the users leads to greater measures of conceptual understanding, with little to no extra effort on the part of the learner.

Adaptive Map Developers:

Project Lead: Dr. Jacob Moore

Dr. Moore is an Assistant Professor of Mechanical Engineering at Penn State Mont Alto. His research interests include engineering education focused on digital textbook design, and additive manufacturing technologies. As the project lead, Dr. Moore oversees all development and evaluation activities and is currently the primary content developer.

Lead Software Developer: Shawn Shroyer

Shawn Shroyer is currently a senior in the Information Sciences and Technology program at Penn State Mont Alto. As the lead software developer, Shawn is the primary software developer for the Adaptive Map Project.

Past Contributors:

We would also like to acknowledge past software developers, Nathanael Bice, Lauren Gibboney, Joseph Luke, James McIntyre, John Nein, Tucker Noia, Michel Pascale, and Joshua Rush, as well as the content experts we have consulted with, Dr. Robert Scott Pierce and Christopher Venters.

Research Publications:


Moore, J. Pascale, M., Williams, C. North, C. (2013) *Translating Educational Theory Into Educational Software: A Case Study of the Adaptive Map Project* Proceedings of the 2013 ASEE Annual Conference Atlanta, GA, ASEE.

Moore, J. Pierce, R. S., Williams, C. (2012) *Towards an "Adaptive Concept Map": Creating an Expert-Generated Concept Map of an Engineering Statics Curriculum* Proceedings of the 2012 ASEE Annual Conference San Antonio, TX, ASEE.

VIRGINIA TECH

VITAL: an interactive guide to the effects of VITamins and minerALS in the body system

<https://vital-test.dev.tlos.vt.edu>

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Invent the Future

Vital an interactive guide to the effects of
VITamins & minerALS in the body systems

Instructions

System

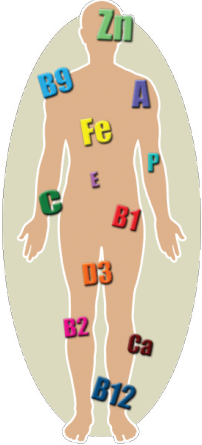
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Condition

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