



OER MOOC Pilot Courses Suggested Course Themes:

STEM (science, technology, engineering, and math), Economics & Business, Americana

ECONOMICS & BUSINESS

Coursera (not a consummate list as new courses are added regularly – check www.coursera.org for a full list of courses on the three themes above)

Title	Description	Materials	Dates
Microeconomics Principles (University of Illinois at Urbana-Champaign)	Introduction to the functions of individual decision-makers, both consumers and producers, within the larger economic system. Primary emphasis on the nature and functions of product markets, the theory of the firm under varying conditions of competition and monopoly, and the role of government in promoting efficiency in the economy.	<ul style="list-style-type: none"> *Lecture videos/lessons (5 and 10 minutes) *Videos contain 1-2 integrated quiz questions per video *One standalone quiz per week *Discussion/group assignment *Mid-term exam *Final exam 	TBA, 6 wks long
Developing Innovative Ideas for New Companies (University of Maryland)	Explore how to identify and develop great ideas into great companies. Learn how to identify opportunities based on real customer needs. Develop solid business models. Create successful companies.	<ul style="list-style-type: none"> *Video lectures each week, (between 8 and 12 minutes in length) *Videos contain 1 to 2 integrated quiz questions *Standalone assignments *Final exam 	Jan 28th, 2013, 6 wks long

MIT OPEN COURSEWARE

Title	Description	Materials	Notes
Principles of Microeconomics	Introductory undergraduate course that teaches the fundamentals of microeconomics. This course introduces microeconomic concepts and analysis, supply and demand analysis, theories of the firm and individual behavior, competition and monopoly, and welfare economics. Students will also be introduced to the use of microeconomic applications to address problems in current economic policy throughout the semester.	<ul style="list-style-type: none"> *A complete set of Lecture Videos by Prof. Jon Gruber. *Reading Assignments in several suggested textbooks as preparation for the lectures *Multiple-choice Quizzes *Problem Sets with solution keys *Problem Solving Videos to provide step-by-step instruction through several problem set solutions *A collection of links For Further Study to provide supplemental online content. *A full set of Exams, including review material and practice exams 	<ul style="list-style-type: none"> *Videos vary in length from 2 minutes to 1 hour. *Videos come in MP4 format and can be downloaded. *Computer must have a Windows Media Player that can handle compressed files.

AMERICANA

Yale University

Title	Description	Materials
The American Novel Since 1945	In "The American Novel Since 1945" students will study a wide range of works from 1945 to the present. The course traces the formal and thematic developments of the novel in this period, focusing on the relationship between writers and readers, the conditions of publishing, innovations in the novel's form, fiction's engagement with history, and the changing place of literature in American culture. The reading list includes works by Richard Wright, Flannery O'Connor, Vladimir Nabokov, Jack Kerouac, J. D. Salinger, Thomas Pynchon, John Barth, Maxine Hong Kingston, Toni Morrison, Marilynne Robinson, Cormac McCarthy, Philip Roth and Edward P. Jones. The course concludes with a contemporary novel chosen by the students in the class.	<ul style="list-style-type: none"> *Video and audio elements from this course are also available on to download on website *Transcripts for video lectures available *Readings will need to be available in library or purchased
The American Revolution	The American Revolution entailed some remarkable transformations--converting British colonists into American revolutionaries, and a cluster of colonies into a confederation of states with a common cause--but it was far more complex and enduring than the fighting of a war. As John Adams put it, "The Revolution was in the Minds of the	<ul style="list-style-type: none"> *Video and audio elements from this course are also available on to download on website *Transcripts for video lectures available *Readings will need to be available in library or purchased

people... before a drop of blood was drawn at Lexington"--and it continued long past America's victory at Yorktown. This course will examine the Revolution from this broad perspective, tracing the participants' shifting sense of themselves as British subjects, colonial settlers, revolutionaries, and Americans.	
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Title	Description	Materials	Dates
Women & the Civil Rights Movement (Univ. of Maryland)	This course examines the U.S. civil rights movement from the vantage point of women, considering both women's involvement in the legal campaigns and political protests and the impact of civil rights' struggles on women's status and identity.	*Video discussions * Weekly quizzes *Short essays *Optional online forum	Feb. 25, 12 wks long

STEM

Coursera (not a consummate list as new courses are added regularly – check www.coursera.org for a full list of courses on the three themes above)

Title	Description	Materials	Dates
Science from Superheroes to Global Warming (U. of CA Irvine)	Have you ever wondered if Superman could really fly? What was Spiderman's spidey sense? How did Wonder Woman's invisible jet work? What does it really mean for something to be a scientific "fact"? Explore how science works and what constitutes "good" science through case studies drawn from a wide spectrum of people's experience, for example superheros, movies, and real world issues such as global warming. The case studies will provide the chance to act as science critics as the students develop a better appreciation for science and the scientific method.	The course uses the free online textbook: Science Appreciation: Introduction to Science Literacy, by John White and Michael Dennin. *Short video introductions featuring Professor Dennin every week and interactive text with substantive material. *Students will use peer-learning and peer-assessment techniques to move through the course assignments.	Jan. 21, 9 wks.
AIDS (Emory University)	No matter what generation you grew up in, what we all have in common is a curiosity about AIDS. Where did it come from? How did	*Syllabus available to enrolled students will	Feb. 25 th , 9 weeks.

	<p>it get so bad so fast? Are we making progress towards a vaccine? What is it like to be part of a vaccine trial? Are some people just naturally more susceptible – or less susceptible – to HIV than other people are? Over the course of nine weeks we will discuss a wide range of issues, innovations, and controversies regarding HIV/AIDS in the US and around the world including everything from what circumcision and Truvada have in common; how school children in Africa are changing the way AIDS education is done; where you can go online to learn how many cases of AIDS there are in your area; and how one man’s insistence that HIV does not cause AIDS left millions without access to life saving drugs.</p>	<p>list resources for each course unit. Some units may require that you complete background reading prior to watching a unit’s videos. Other units may involve having you watch part of a video, do some reading or research, and then continue watching the video. The syllabus will also suggest some optional readings that will take you further into a given unit’s various topics than is covered in a video. There will be 9 lectures and each lecture will be accompanied by an assignment that may include generating lessons learned, posting on the course blog, taking a multiple choice quiz to test your understanding of the course material, and/or writing a reflection paper for peer review and comment.</p>	
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MIT Open Courseware: OCW Scholar

Biology & Chemistry			
Title	Description	Materials	Notes
Fundamentals of Biology	This course focuses on the basic principles of biochemistry, molecular biology, genetics, and recombinant DNA. These principles are necessary to understanding the basic mechanisms of life and anchor the biological knowledge that is required to understand many of the challenges in everyday life, from human health and disease to loss of biodiversity and environmental quality.	<p>This course consists of four units, one for each topic. The units can be used individually or in combination. The materials for each unit include:</p> <ul style="list-style-type: none"> *Lecture Videos by MIT faculty. *Learning activities, including Interactive Concept Quizzes, designed to reinforce main concepts from lectures. *Problem Sets you do on your own and check your answers against the Solutions when you're done. *Problem Solving Video help sessions taught by experienced MIT Teaching Assistants. *Lists of important Terms and Definitions. *Suggested Topics and Links for further study. *Exams with Solution Keys. 	<p>*Videos vary in length from 2 minutes to 1 hour.</p> <p>*Videos come in MP4 format and can be downloaded.</p> <p>*Computer must have a Windows Media Player that can handle compressed files.</p>
Introduction to Solid State Chemistry	<i>Introduction to Solid State Chemistry</i> is a one-semester general chemistry class with a focus on solid-state materials and their application to engineering systems. Starting from the relationship between electronic structure, chemical bonding, and atomic order, the class explores material forms ranging from solutions to polymers and biomaterials.	<p>This course has been designed for independent study. It provides everything you will need to understand the concepts covered in the course. The materials include:</p> <ul style="list-style-type: none"> *A complete set of Lecture Videos by Prof. Sadoway. *Detailed Course Notes for most video sessions, plus readings in a Free Online Textbook and several suggested alternatives. *Homework problems with solution keys, to further develop your understanding. *For Further Study collections of links to supplemental online content. *Self-Assessment pages containing quiz and exam problems to assess your mastery, and Help Session *Videos in which teaching assistants take you step-by-step through exam problem solutions. *An Online Study Group at OpenStudy, where you can connect with other independent learners. 	<p>*Videos vary in length from 2 minutes to 1 hour. *Videos come in MP4 format and can be downloaded.*Computer must have a Windows Media Player that can handle compressed files.</p>

Computer Science

Title	Description	Materials	Notes
Introduction to Computer Science and Programming	This subject is aimed at students with little or no programming experience . It aims to provide students with an understanding of the role computation can play in solving problems. It also aims to help students, regardless of their major, to feel justifiably confident of their ability to write small programs that allow them to accomplish useful goals. The class will use the Python programming language.	<p>This course has been designed for independent study. It provides everything you will need to understand the concepts covered in the course. The materials include:</p> <ul style="list-style-type: none"> *A complete set of Lecture Videos by Prof. Guttag. *Resources for each lecture video, such as *Handouts, Slides, and Code Files. *Recitation Videos by course TA's to review content and problem solving techniques. *Homework problems with sample student solutions. *Further Study collections of links to supplemental online content. *Self-Assessment tools, including lecture questions with answers and unit quizzes with solutions, to assess your subject mastery. 	<ul style="list-style-type: none"> *Videos vary in length from 2 minutes to 1 hour. *Videos come in MP4 format and can be downloaded. *Computer must have a Windows Media Player that can handle compressed files.
Introduction to Electrical Engineering & Computer Science I	This course provides an integrated introduction to electrical engineering and computer science, taught using substantial laboratory experiments with mobile robots. Our primary goal is for you to learn to appreciate and use the fundamental design principles of modularity and abstraction in a variety of contexts. Our second goal is to show you that making mathematical models of real systems can help in the design and analysis of those systems. Finally, we have the more typical goals of teaching exciting and important basic material from electrical engineering and computer science, including modern software engineering, linear systems analysis, electronic circuits, and decision-making.	<p>This course has been designed for independent study. It includes all of the materials you will need to understand the concepts covered in this subject. The materials in this course include:</p> <ul style="list-style-type: none"> *Lecture videos from Spring 2011, taught by Prof. Dennis Freeman *Recitation videos, developed for OCW Scholar by teaching assistant Kendra Pugh *Course notes *Software and design labs *Homework assignments and additional exercises *Nano-quizzes and exams with solutions 	<ul style="list-style-type: none"> *Videos vary in length from 2 minutes to 1 hour. *Videos come in MP4 format and can be downloaded. *Computer must have a Windows Media Player that can handle compressed files.

Physics			
Title	Description	Materials	Notes
Physics 1: Classical Mechanics	Physics I is a first-year, first-semester course that provides an introduction to Classical Mechanics. It covers the basic concepts of Newtonian mechanics, fluid mechanics, and kinetic gas theory.	<ul style="list-style-type: none"> *A complete set of Lecture Videos by renowned MIT Physics Professor Walter Lewin *A complete set of detailed Course Notes, replacing the need for a traditional course textbook *A complete set of Class Slides, with overviews and illustrations of the concepts and applications of the subject *Homework Problems & interactive Concept Tests to gauge your understanding of and progress through the materials *Homework Help Videos in which Prof. Lewin takes viewers step-by-step through solving homework problems *Selected links to websites with related materials, including videos, simulations, and animations *An Online Study Group 	<ul style="list-style-type: none"> *Videos vary in length from 2 minutes to 1 hour. *Videos come in MP4 format and can be downloaded. *Computer must have a Windows Media Player that can handle compressed files.
Physics 2: Electricity and Magnetism	This freshman-level course is the second semester of introductory physics. The focus is on electricity and magnetism, including electric fields, magnetic fields, electromagnetic forces, conductors and dielectrics, electromagnetic waves, and the nature of light.	<ul style="list-style-type: none"> *A complete set of Lecture Videos by renowned MIT Physics Professor Walter Lewin *A complete set of detailed Course Notes, replacing the need for a traditional course textbook *A complete set of Class Slides, with overviews and illustrations of the concepts and applications of the subject *Homework Problems and Concept Questions to gauge your understanding of and progress through the materials *Homework Help Videos in which Prof. Lewin takes viewers step-by-step through solving homework problems *Visualizations of electromagnetic phenomena which are normally invisible to the human eye *An online study group at OpenStudy where you can connect with other independent learners 	<ul style="list-style-type: none"> *Videos vary in length from 2 minutes to 1 hour. *Videos come in MP4 format and can be downloaded. *Computer must have a Windows Media Player that can handle compressed files.

Computer Networks & Astrobiology			
Title	Description	Materials	Notes
Introduction to computer networks	Computer networks from ISPs to WiFi and cellular networks are a key part of the information economy. These networks are the foundation for the Web, and they enable companies such as Google, Facebook and Amazon. This course introduces the fundamental problems of computer networking, from sending bits over wires to running distributed applications. For each problem, we explore the design strategies that have proven valuable in practice. Topics include error detection and correction, multiple-access, bandwidth allocation, routing, internetworking, reliability, quality of service, naming, content delivery, and security. As we cover these topics, you will learn how the internals of the Internet work to support the Web and other networked applications. You will develop a detailed understanding of widely-used networking technologies such as TCP/IP, HTTP, 802.11, Ethernet, and DNS.	The course consists of: *Two hours of video lectures per week, presented in short segments. *There will be regular, required homeworks of textbook-style problems and hands-on exercises to cover the basics of the material. *For students who want to gain a deep appreciation of computer networks, there is an optional sequence of Android programming projects. *The course ends with a final exam.	Jan. 28th, 2013 (10 wks)
Astrobiology and the Search for Extraterrestrial Life	This course explores the origin and evolution of life on the Earth and its potential to exist elsewhere. Astrobiology addresses compelling questions of wide interest such as: How did life originate on the Earth? Is this an inevitable process and is life common across the Universe? Astrobiology is an interdisciplinary science that bridges fields as diverse as astrophysics, biology, geosciences and chemistry. In this course we will explore what we know about life's ability to live in extreme environments on the Earth, we will look at different hypotheses for how it originated. We will look at some of the missions to search for life in our own Solar System and on planets orbiting distant stars. We will discuss some of the extreme environments on the Earth that help us understand the limits of life and how life has adapted to cope with extremes. We will explore the possibility of intelligent alien life and some of the implications of its detection.	The course will consist of ten lectures of one hour each.	Jan. 28th, 2013 (5 wks)