MIT Splash Fall 2014: STEM Courses

18.00C: Cryptography for People Without a Computer

2x2 = 4: The Hard Way

A Bit about Logic

A closer look at the magic of parasitic wasps

A love triangle: The Earth, the Sun and the Moon

A Pyret's Life for Me: An Introduction to Computer Science through Functional Programming

Accidents in Northern American Mountaineering: and how to avoid them

Acoustics and the Fourier Transform

Advanced Classical Mechanics

AI and Board Games

Algo-Rhythms

Algorithms of the Dummies, by the Dummies, for the Dummies

All about Nuclear Science and Engineering!

All of Organic Chemistry in 2 hours

An Introduction to Java and Object Oriented Programming

Anatomy of a Metaphor

And a side order of orgo? Introductory Applied Biochemistry in the Kitchen

Arduino - Open Source Hardware

Arithmetic, Ancient Egyptian Style

Astronomical Imaging + Observing

Become a Bash Wizard

Becoming Super: The Science and History behind GMOs

Before the Great Dying: Life on Land in the Paleozoic

Binet's formula

Bioethics and 2014

Bio-Logic

Biology of Allergies

Bits and Bytes: How to Build a Computer Processor

Build a Bridge

Build a Mini Aeroponic Farm!

Build your web profile!

Building a Race Track in a City: Lessons from the Singapore Grand Prix

Building Planets

Calculate Pi with Trains!

Calculating Pi with a Coconut

Calculus in Number Theory

Can We Build It? Math Edition

Censoring a Naked Black Hole (and other Cosmic Oddities)

CHDK - Canon Hack Development Kit

Cheating at Physics

Chemical Explosives!

Chemotaxis: Bacterial Motors and Random Walks

Climate Physics & Fixes: Turning Up the Heat on Global Warming

Command Line One-liners

Complex Numbers: Math That Will Freak You Out (at least a little bit)

Composing Earth's Crust

Computational Cubing

Computer Architecture: Speed Run!

Conceptual Calculus

Concurrency and Multithreaded Programming

Consensus

Counting Cards and Martingales

Counting Past Infinity with Ordinal Arithmetic

Creating Your First Web Page

Crystal Field Theory: How atomic dumbels make metals colorful!

Curved Spaces - An Introduction to Surface Topology

Cyberespionage

Death by Chemistry

Demockracy

Demystifying the Command Line

Derp Sea Creatures

Digital communications

Dip Into the Charles

Discrete Calculus

Disease and Civilization

Disney and Pixar Films Debunked

Dissection problems

Dissection Puzzles

Distributed Computing for Dummies

Donuts Aren't Spheres

Dreams, Dreaming and the Subconscious

Drilling for Chocolate

Drugs and the Brain

Dynamic Programming and other Algorithms

Eat Your Own Aquifer

Efficient Algorithms with a Time Machine

Electric Cars: how do they work?

Electromagnetic Earth

Eleven Blue Men: Advanced Topics in Murder

Emergent Properties of the Brain

Energy, Entropy, and Chemical Reactions

Engineering Design Challenge!

Engineering for International Development

Engineering Life: Synthetic Biology

Environmentally Benign Design and Manufacturing

Estimation: Fermi Questions!

Evaluation of Products Designed for the Developing World

Exoplanet Excavation

Experiments in Modern Physics

Exploring Einstein's Special Relativity

Factory Physics

Fantastic Diseases and Where to Find Them: Field Epidemiology

Fantasy Organic Chemistry

Fermi estimation 101

Find the Shortest Path!

Food Science!

Formulas you were Never Meant to Know

Fractals and Dimension

From the Stars to the Universe: Astronomy Beyond Sol

Fun With Group Theory!

Fun With Integer Partitions!

Functional Programming and the Lambda Calculus

Fundamentals of Organic Chemistry

Game Theory and Emotions!

Generalized Functions

Generating Functions

Geometry

Glorious Genome Editing

Graph theory

Graphics with JavaScript

Head in the Clouds

Household Chemistry for the Biologist

How Blood Works

How Combination Locks Work

How Do Computers Add?

How do computers do math?

How Does MRI Work?! A Look Inside the Body!

How does your calculator find the answer? - Numerical Analysis

How Human Memory Works

How lithium-ion batteries (in your iPhone, laptop) work

How RNA-Seq is changing our world

How This Website Works

How to fight your way through physics

How to give a science talk

How to Hack Solitaire

How to have infinitely big numbers without breaking math: a nice introduction to P-adics

How to Keep a Secret: The History and Practice of Cryptography

How to Make Your Own Website and Learn about the Internet at the Same Time

How to Speak Machine

How Websites Work, Home Networks, and Run Your Own Servers: Networking 101 in Three Parts

Human Evolution

Ice on Earth

Illusions and Visual Perception: Why You Don't See Dead People

Immunology 101 and Related Topics

In Silico Protein Function Prediction

In(tro)duction to Induction

Inception! or, How to Build a Computer in Minecraft

Induction for beginners

Industrial Ventilation Systems

Infinites!!!

Infinity and You

Information. Computation, and provability

Insects: Beautiful, Deadly and Downright Weird

Insects: Classification and Camouflage

Internet in the Air! How Wi-Fi Actually Works (and why it often doesn't)

Intro Programming for Newbs

Intro Programming in Python

Intro to 3D Graphics with WebGL and Dart

Intro to Graph Theory

Intro to Graphics Programming with Processing

Intro to Java Robots

Intro to MATLAB/Octave: Why Programming Shouldn't Scare You

Intro to Organic Chemistry

Intro to Solidworks

Introduction to Biomechanics

Introduction to Calculus from an overly enthusiastic student

Introduction to Feedback and Control Systems

Introduction to Lagrangian Mechanics

Introduction to Linux

Introduction to Mathematica

Introduction to Nonlinear Dynamics and Chaos

Introduction to Parallel Computing

Introduction to Programming in Microsoft Excel

Introduction to Programming with Python

Introduction to Quantum Mechanics

Introduction to Special Relativity

Introduction to Special Relativity and Application to Magnetism

Introduction to Statistical Mechanics

Introduction to Theoretical Computer Science

Introduction to Thermodynamics

Invasive species

Inventing Numbers

It's back: 2hr Cram Session of Undergraduate Mathematics

I've Got a Lovely Bunch of Ordinals!

Javascript Game Design

Jellyfish

Just Enough Math to Pretend You're a Math Major

Keeping Your Code Neat, Reliable, and Flexible

Large Numbers

Learn Haskell

Learn to program by writing the AI for battling tank robots

Learn to Use Regular Expressions

Learning Programming Through Elm

Let's Git Started - A Brief Introduction to Version Control

Let's Talk About Servers And Networking

Let's Talk About Space

Lift! An Overview

Lift! In Detail

Linear Logic

Live Action Cryptography

Logic gates!

Machine Learning & Audio Analysis with Python

Magic Bullets, Tissue Engineering and More - Polymers in Medicine

Martial Arts and Physics

Math by Storytelling

Math, Games, and Puzzles

May the Odds Be Ever in Your Favor

Mechanics and Materials: Introduction to Statics

Mechanics in Three Hours

Metal Organic Frameworks

Mineral Identification

Modern Heat Engines

Modern Rapid Fabrication

Monads to Melody

More Game Theory Than Your Body Has Room For

Mountains, Glaciers and the Landscape

Multivariable/Vector Calculus

Murder for the Beginner

Non-Standard Analysis

Not Everyone's a Programmer! Computer Majors/Careers in an Hour

Nuclear Weapons Technology

On Black Holes, Singularities, and the Event Horizon: A Journey into the Abyss

Ordinary Differential Equations

Over 9000: Really Big Numbers

P vs. NP

Painting with Computers: Recent Advancements in Magic

Partial Differential Equations

Physics of Unicycling

Plasma Physics

Plastics in our Ocean

Polynomials are basically computers. What?

Primes and primes and primes, oh my!

Primes and the Riemann Zeta Function

Problem Solving

Programming Concepts

Programs = Proofs

Promiscuous Mode-Network Protocol Analysis

Proofs from THE BOOK

Put Together The Pile of Junk!

Puzzles and Physics

Quantum Computation

Quantum Cryptography

Quantum Mechanics for Fun and Profit

Quantum Mechanics: In words

Racecar Design 101

Rants on Programming Languages

Real Software Engineering

Rockets!

Signals and Systems!

Singular Construction Projects

Sliquid? Solgel? Goop? Non-Ideal Materials from Rubbers to Gels to Slime

Software Engineering: Building Big Programs

Solving Games

Sorting a List of Numbers

Sorting sensations

Speaker Design Crash Course

Special Relativity

Splay Trees (and other search tree fun)

Stack Hacking: Programming Recursion in the TI-84

Star power - introduction to plasma and fusion

Statistical Mechanics in Biology

Strange Plants

Stretch, Twist, Squash

Stupid Human Tricks

Superhuman Integration Techniques

Synchronization: Dynamics of Coupled Oscillators

Telling Apart Left and Right

The Age of the Universe

The almost prime number theorem

The Art and Science of Napping

The Banach-Tarski Paradox: Speed Run!

The Best Polynomial Approximations

The biggest tour you've ever been on: the best of the solar system

The Birthday Problem

The Checkmate Club

The Chemistry of Color

The digital abstraction

The Euclidean Algorithm

The Evolution of Vertebrate Flight

The Fourier Transform

The Futurama Theorem

The Geometry of Paper Folding

The Greenhouse Effect

The History of Operating Systems

The History of the T

The Magical Beauty of Parasitic Wasps

The Magical Beauty of Parasitic Wasps A general idea of what DNA is and how it is used in the cell.

The Math Hatters

The Math of Guarding Things: The Art Gallery Problem

The Physics of Quantum Measurements

The Schläfli Symbol

The Science of 3D - Why Does It Pop Out Like That?

The Science of Chocolate

The Scope of Modern Cognitive Neuroscience: Limitations, Popular Misconceptions, and Practical Applications

The Sex Lives of Plants

The Stuff of the Universe

The Tennis Racket Theorem

The Ways of Bayes: Applying Probability Theory in Everyday Life

Theory of Computation / Computational Complexity

Ultracold Atoms: The physics and optics

UNIX Operating System Architecture

Using computers to discover drug targets

We all live downstream: flow and transport of pollutants in the environment

Web Application Development (Part 1)

Web Application Development (Part 2)

Web application security

Weight Watchers: An Introduction to Mass Spectroscopy

What Happens When You Throw a Squirrel Into a Black Hole? And Other Important Questions

What if absolute values were all wonky? A hard, miserable introduction to p-adics

What is equality?

What is fire?

What is life? A biophysics perspective

What's The Deal With 3D Printing? (Now with LASERS!)

What's up with the cross product?

When Cells Die

When Life Gives You Lemons...

When Organs Die

Where is that star?

Why the earth looks flat, map-making, and Archimedes' greatest discovery

Why the MBTA is so slow

Why We Need Quantum Mechanics

Wireshark Workshop

Wizardry through Cooking with Science

Word Graphs

Wormholes, Really?

Write a Sudoku Solver

Writing BOTS: how to destroy your friends at any computer game

You Stressed Bro?

Your classical intuition is wrong!

Your First Website!