7.00x - Introductory Biology – The Secret of Life

Welcome

Did you ever wonder about how genetics determines your eye color, the diseases in your family, and your predisposition to cancer? Do you know how cells get energy, live, and reproduce? Are you curious as to how modern DNA technology works and how is it changing the world we live in through science and medicine? Do you know why people take statins for high cholesterol?

Through 7.00x – The Secret of Life, you will begin to learn the answers to many of these questions. The course will help you uncover the mysteries of Biochemistry, Genetics, Molecular Biology, Recombinant DNA technology, Genomics, and Rational Medicine. We are excited to take this journey with you!

Teaching Staff

Instructor:
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Course coordinators:

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Michelle Mischke, Ph.D.
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Biology Software Developer:

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Prerequisites

Knowledge of high school biology and chemistry is useful but not required. We want everyone to be able to start this course and successfully complete the course without prior knowledge. Without a high school level of biology or chemistry, the course will be more challenging.

Course Overview

We have divided the course into weeks. To successfully complete the course, you need to complete the problem sets and exams by the due date. Each week will include interactive video sequences, and most weeks (except exam weeks) include a graded problem set and deep dives or lab videos. The course also includes 2 unit exams and one final exam.

Interactive Lectures

Each week, we will present 1-3 lectures as a series of interactive video sequences, interspersed with online exercises to help you test your learning as you watch the videos. Participation in these online exercises does not contribute to your grade.

Deep Dives

To perform well on the problem sets and exams, one must use problem-solving to tackle a biological concept. Many course weeks will include deep dives. Deep dives give you the opportunity to work through a biology problem step-by-step or hear a more detailed explanation of a concept taught in the interactive lecture sequence. We designed these videos to help you develop your scientific problem-solving skills. A member of the teaching staff will lead you through these exercises in short videos.

Textbook

The textbook is not required. We suggest using the *Molecular Biology of the Cell* textbook as supplemental reading if you need additional resources. We have listed chapters and sections most relevant to each lecture in the "Readings" document found on the course info page.

Alberts et al. *Molecular Biology of the Cell*, 4th edition, Garland Science, 2002.

A searchable version of the text is freely available at:
http://www.ncbi.nlm.nih.gov/books/NBK21054/.

Homework

We will post 7 problem sets over the 12 course weeks. Each new problem set for the week will be released on a Tuesday at 15:00 UTC. The completed problem set is due on a Tuesday at 14:00 UTC. We will not have a graded problem set due during exam weeks. Given the format of the course, we will not accept any late submissions of a problem set. For more information on conversion of the UTC time to your local time, try this website. http://www.timeanddate.com/worldclock/converter.html.

Exams

We will determine the majority of the final grade in 7.00x based on student exam performance. The two unit exams follow the associated lectures and problem set(s). At the end of 7.00x, students will take a cumulative final exam. The problems sets are designed to help students prepare for the exams.

Remember that you sign an honor code to enroll in 7.00x. Posting answers to problem sets or exams will forfeit your certificate. Your answers on exams should only reflect your own work.

Discussion Forum

We encourage students to actively participate in the discussion forum offered on the 7.00x website. You should use the discussion forum to ask questions about concepts from lectures, lecture exercises, deep dives, and lab videos but should not directly discuss answers to problem sets or exams on the forum. The course staff moderates the forum, but we encourage students to answer other students' questions.

Grading

Exams 1 and 2 are each worth 25% of the total grade. The final exam is worth 30% of the total grade. Problem sets are worth a total of 20% of the total grade.

We will grade the course on a pass/fail scale. You need a total score of 60% or above for a passing grade in 7.00x.

Certification

Online learners who demonstrate mastery of 7.00x course materials with a passing grade may earn a certificate of completion. EdX will issue the certificate under the name of MITx and the certificates will not include a final grade.
Students have three options upon registering: verified certificate, honor code certificate, or audit.

- Students have a variety of reasons to want ID verified certificates after successfully completing the course including professional development and counting courses as part of an XSeries. Therefore, we are offering the course with a verified option for $100. After clicking register for the course, you can choose this option.
- If you want an Honor Code certificate after successfully completing the course and do not need or want the verified certificate, you can select that option by clicking "Why do I have to pay?" under the ID verified amounts.
- If you want to access course materials but do not want to complete the course for a certificate, you should select audit when you register. You can switch to ID verified or Honor Code later if you choose.