

# Ignorance! Course Syllabus

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**Prerequisites:** Ignorance! is a free online course through edX that's open to anyone. You don't need any previous education or experience, and you can participate as much or as little as you like.

**How much time is required:** 3-5 hours per week.

## Introduction and Learning Objectives:

As the title says, this is a course about ignorance. Ignorance is everyone's business. Ignorance is relevant to every discipline and profession, and to everyday life, both at work and at play. No matter what domain you study or work in, this course will have something to offer to you. Where does ignorance come from? How do we impose it on each other, and even on ourselves? And why? We usually think about ignorance as a bad thing, but when can it be preferable not to know something? What uses do people have for ignorance? What roles does ignorance play in social interaction, group relations, institutions, and law? Can ignorance sometimes be a virtue? When can ignorance be good for us? How can we harness the unknown for learning, discovery, and creativity? We will investigate these and other questions about ignorance over 8 weeks (see the course outline below).

We've made our own adaptation of Bloom's Taxonomy of Educational Objectives:

- Remembering
- Understanding
- Applying
- Analysing
- Evaluating
- Synthesising or creating

In this MOOC, we largely concentrate on the first three of these: Remembering, understanding and applying.

### *Remembering*

While some of the quizzes (multiple choice questions) test your memory, by and large we are leaving it to you to decide what you want to remember and to do the necessary work. For example, in the first lecture we provide five reasons why people think they know more than they actually do. If you want to remember those, it's a matter of writing them down somewhere where you can easily find them and then testing yourself until you can reliably recite them without having to look them up.

### *Understanding*

The quizzes and (optional) games predominantly test your understanding. If you are taking the course for credit, you will receive a score based on how many of the multiple choice questions you got correct. There is a short quiz after most of lectures, so you can see if you understood the ideas the lecture was trying to get across. The (optional) readings are for

you to extend your understanding of the lecture material, should you wish to delve further into a particular topic.

The games are a little different. They are not as directly related to the lectures, but each game gives you the experience of dealing with ignorance in a particular way. The games are usually explained in a lecture after you have played them, so it gives you an opportunity to figure things out for yourself and then to test your understanding against the explanation. There also is a discussion topic for each game, where you can exchange views with other participants on how best to play the game.

You can also check your understanding through the discussion forum. After each lecture, we invite you to address one or more discussion questions by looking for parallels between the material in the lecture and your own experience. In addition, if you have questions, we or the teaching assistants will do our best to answer them. We also encourage you—the course participants—to interact, by commenting on each other's posts and by helping each other when there are questions. A great way to figure out if you really understand something is to explain it to someone else and you can do this through the discussion forum.

### *Applying*

The discussion forum also provides an opportunity for you to apply the knowledge. Some of our trigger questions will prompt you to do this, but you should also feel free to start your own lines of discussion around application. There may be a particular topic to which you want to apply your new understanding of ignorance; if so start a discussion thread and see who else may wish to join.

There will be discussion threads specifically for people who want to apply understandings about ignorance to complex social and environmental problems—you might be researching in that area or be a decision maker or just be generally interested. Each week there will be a small number of trigger questions and we invite those of you interested in complex problems to join those discussions.

### *Analysing, Evaluating and Synthesising or Creating*

The discussion forums can also be used to analyse ignorance, evaluate the evidence, synthesise what you've learnt, and to share creative insights. We see these as a bonus and we will invite you to post contributions at this level in the course wiki.

### **Assessment and Grading Policy:**

The assessment in this course is by quizzes (mainly multiple-choice) and participation in discussion forums. The quizzes cover the material in the video lectures, and count for 80 points out of 100 points in total for your mark for the course.

Participation in discussions counts the remaining 20 points of your course mark.

You will need 60 points out of 100 to pass this course. That means that for those who wish to receive a certificate you need to score at least 60% for your total grade.

## Course Outline

### Week 1: What Is Ignorance?

- 1.1 Video lecture: Welcome to the Course
- 1.2 Video lecture: We Know Less than We Think We Do
  - Quiz
  - Discussion topic
  - Reading on hindsight bias (optional)
- 1.3 Video lecture: How Do We Think About Ignorance?
  - Quiz
  - Discussion topic
  - Reading on metaphors for ignorance (optional)
- 1.4 Video lecture: Effective Thinking About Ignorance
  - Quiz
  - Discussion topic
  - Readings on frameworks for ignorance (optional)
- 1.5 Video lecture: The Act of Ignoring
  - Quiz
  - Discussion topic
- 1.6 Video lecture: Negative Knowledge
  - Quiz
  - Discussion topic
- 1.CP-1 Video lecture: Introduction to Complex Problems
  - Discussion topics
- 1.CP-2 Video lecture: Ignorance and Complex Problems Week 1
  - Discussion topics
  - Discussion declaration
- Honey Bee Game – week 1 (optional)
  - Introduction
  - Play the game
  - Discussion topic
- Gem Mining Game (optional)
  - Introduction
  - Play the game
  - Discussion topic

### Week 2: Where Does Ignorance Come From? Part 1

- 2.1 Video lecture: Things We'd Rather Not Know (at least for now)
  - Quiz
  - Discussion topic
- 2.2 Video lecture: Things We Never Want to Know
  - Quiz
  - Discussion topic
  - Readings on medical conditions (optional)

- 2.3 Video lecture: Unknowns, Improvisation, and Creativity (interview with John Mackey)
  - Discussion topic
- 2.4 Video lecture: Knowing Can Be Costly
  - Quiz
  - Discussion topic
- 2.5 Video lecture: Indecision and Indecisiveness (interview with Stephen Tang)
  - Quiz
  - Discussion topic
  - Reading on indecision (optional)
- 2.6 Video lecture: Imposing Ignorance on Others
  - Quiz
  - Discussion topic
- 2.CP Video lecture: Ignorance and Complex Problems Week 2
  - Discussion topics
  - Discussion declaration
- Honey Bee Game – week 2 (optional)
  - Introduction
  - Play the game
  - Discussion topic

### **Week 3: Where Does Ignorance Come From? Part 2**

- 3.1 Video lecture: Doubt Is Their Product: Manufacturing Ignorance
  - Quiz
  - Discussion topic
- 3.2 Video lecture: Strategic Ignorance and the Social Control of Curiosity
  - Quiz
  - Discussion topic
  - Reading on strategic ignorance (optional)
- 3.3 Video lecture: Restricting Science for the Public Good? Dual Use Dilemmas
  - Quiz
  - Discussion topic
  - Reading on dual use dilemmas (optional)
- 3.4 Video lecture: Virtuous Ignorance
  - Quiz
  - Discussion topic
- 3.5 Video lecture: How Our Preferences Shape Our Ignorance
  - Quiz
  - Discussion topic
  - Reading on ignorance economy (optional)
- 3.6 Video lecture: Is Ignorance a Public Problem?
  - Quiz
  - Discussion topic
  - Reading on social problem(optional)
- 3.CP Video lecture: Ignorance and Complex Problems Week 3
  - Discussion topics

- Discussion declaration
- Find Out Your Ignorance and Risk Tolerance Profiles (optional)
  - Online questionnaires on risk orientation and ignorance tolerance

#### **Week 4: Are There Different Kinds of Ignorance?**

- 4.1 Video lecture: If There Are Different Kinds of Ignorance, Why Is That Important?
  - Quiz
  - Discussion topic
  - Reading on ignorance and the brain (optional)
- 4.2 Video lecture: Are There Different Kinds of Ambiguity?
  - Quiz
  - Discussion topic
- 4.3 Video lecture: Conflict Differs From Ambiguity, But Which Is Worse?
  - Quiz
  - Discussion topic
  - Reading on conflict aversion (optional)
- 4.4 Video lecture: Sample Space Ignorance: When We Don't Know What's Coming
  - Quiz
  - Discussion topic
  - Reading on partitions (optional)
- 4.5 Video lecture: Do Different Kinds of Ignorance Involve Different Networks in the Brain?
  - Quiz
  - Discussion topic
  - Readings (optional)
- 4.6 Video lecture: How Do the Meanings and Roles of Ignorance Evolve Over Time?
  - Quiz
  - Discussion topic
- 4.CP Video lecture: Ignorance and Complex Problems – Week 4
  - Discussion topics
  - Discussion declaration
- Investor Games (optional)
  - Introduction
  - Play the Investor Random Game
  - Discussion topic
  - Play the Investor Chaos 1 Game
  - Discussion topic
  - Investor Chaos 2 Game
  - Discussion topic

#### **Week 5: When Is Ignorance Good or Bad for Us?**

- 5.1 Video lecture: When Can Knowing More Lead to Worse Decisions?
  - Quiz
  - Discussion topic
- 5.2 Video lecture: When Is It Futile to Seek Greater Certainty?

- Quiz
- Discussion topic
- 5.3 Video lecture: How Can Vagueness and Ambiguity Earn Their Keep?
  - Quiz
  - Discussion topic
- 5.4 Video lecture: Why Do We Fall for Gambler's Fallacy?
  - Quiz
  - Discussion topic
- 5.5 Video lecture: Exploiting Unknowns (interview with Sasha Grishin)
  - Quiz
  - Discussion topic
- 5.6 Video lecture: When Is Ignorance Good or Bad for Us?
  - Discussion topic
- 5.CP Video lecture: Ignorance and Complex Problems- Week 5
  - Discussion topics
  - Discussion declaration

### **Week 6: How Are Unknowns Dealt with in Different Domains?** (no quizzes in Week 6)

- 6.1 Video lecture: How Are Unknowns Dealt with in Different Domains?
- 6.2 Video lecture: Politics (interview with Michael Moore)
- 6.3 Video lecture: Entrepreneurship (interview with Dr. Sarah Pearson)
- 6.4 Video lecture: Environmental Science (interview with Professor Steve Dovers)
- 6.5 Video lecture: Field Epidemiology and Disease Outbreaks (interview with Dr. Martyn Kirk and Dr. Kerri Viney)
- 6.6 Video lecture: Intelligence and Anti-Terrorism (interview with Dr. Grant Wardlaw)
- 6.7 Video lecture: Ignorance, Experts, and Decisions
- 6.CP Video lecture: Ignorance and Complex Problems- Week 6
  - Discussion topics
  - Discussion declaration

### **Week 7: Can We Make Good Decisions Under Ignorance?**

- 7.1 Video lecture: What Is a Decision?
  - Quiz
- 7.2 Video lecture: How Do We Decide Under Different Unknowns?
  - Quiz
- 7.3 Video lecture: When Can Knowing More Lead to Worse Decisions?
  - Quiz
- 7.4 Video lecture: When Greater Uncertainty Requires Stronger Measures
  - Quiz
- 7.5 Video lecture: Good Decisions Under Ignorance: Robustness and Satisficing
  - Quiz
- 7.6 Video lecture: Good Decisions Under Ignorance: The Human Dimension
  - Quiz
- 7.7 Video lecture: Criteria for Good Decisions Under Ignorance

- Quiz
- 7.CP Video lecture: Ignorance and Complex Problems, Week 7
  - Discussion topics
  - Discussion declaration

### **Week 8: When Is Ignorance Good or Bad for Us?**

- 8.1 Video lecture: Expertise on Expertise
  - Quiz
- 8.2 Video lecture: Risky Risk Communication
  - Quiz
- 8.3 Video lecture: Six Ways of Coping with Ignorance
  - Quiz
- 8.4 Video lecture: Improving Our Ignorance
  - Quiz
- 8.5 Video lecture: Where Good Ideas Come From, Part 1
  - Quiz
- 8.6 Video lecture: Where Good Ideas Come From, Part 2
  - Quiz
- 8.CP Video lecture: Ignorance and Complex Problems, Week 8
  - Discussion topics
  - Discussion declaration
- Course evaluation

### **Course timing**

When the course starts week 1 and 2 materials will be available. In each of the following three weeks a new set of materials will be released. Each week's materials will be available for three weeks in total. That means if you want to receive credit for the quizzes and discussion participation, you need to complete it in that three week window. You can still participate in the quizzes and discussion forums after the deadline, but they will not count towards your assessment. In addition, the discussion forums will no longer be monitored.

Week	Release date	Deadline to receive credit for quiz and discussion participation 23.00 UTC (Co-ordinated Universal Time)
1	10 January 2017	30 January 2017
2	10 January 2017	30 January 2017
3	17 January 2017	6 February 2017
4	24 January 2017	13 February 2017
5	31 January 2017	20 February 2017

6	7 February 2017	27 February 2017
7	14 February 2017	6 March 2017
8	21 February 2017	13 March 2017

### Course languages

This course is offered in English. However, the video lectures have captions in Simplified and Traditional Chinese as well as English, and transcripts of the lectures are available in these three languages. There also are Wiki glossaries for each week in both English and Chinese.

### Guest Lecturers

We have guest lecturers making appearances in Ignorance! throughout the course. In week 2, the video on Unknowns, Improvisation, and Creativity is an interview with John Mackey, jazz musician and lecturer at The Australian National University. The video on Indecision and Indecisiveness is an interview with Stephen Tang, a clinical psychology PhD student whose thesis is on that topic. In week 5, the video on Exploiting Unknowns is an interview with Professor Sasha Grishin, art historian and critic. Week 6 has six guest lecturers, as we explore how ignorance is dealt with in different disciplines and practice domains. We interview former politician Michael Moore, physicist and entrepreneur Dr. Sarah Pearson, environmental scientist Professor Steve Dovers, field epidemiologists Dr. Martyn Kirk and Dr. Kerri Viney, and intelligence analyst Dr. Grant Wardlaw.

### Course Assistants

Watch the Course Information page for Introductions to the Course Assistants

### Updates

We have attempted to be accurate in the information presented here, but things change. Please watch the Course Information page for updates, changes and corrections.

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