

**GRAD-E1200: Economics & Politics of the Knowledge Economy**  
**Thrainn Eggertsson**

**version: 26 August 2018**

**1. General information**

Class time	Thursdays, 14-16h
Venue	R 2.61
Instructor	Thrainn Eggertsson
Instructor's office	3.20
Instructor's e-mail	thrainn@hi.is
Instructor's phone number	
Assistant	Name: Andrea Derichs-Carlin Email: adjunctsupport@hertie-school.org Phone: +49 30 251 219 312 Room: 2.55
Instructor's Office Hours	3.20 By appointment

Instructor Information:

Thrainn Eggertsson is adjunct professor at HSoG, and professor of economics at the Department of Economics, University of Iceland. Until 2010 he was also global distinguished professor of politics at New York University. Eggertsson served as president of the International Society for New Institutional Economics (now SIOE) 2007-2008; and he co-edited for Cambridge University Press the book series Political Economy of Institutions and Decisions. In the 1980s and 1990s he taught and collaborated with Elinor Ostrom at Indiana University in Bloomington, and Douglass North at Washington University in St. Louis and Stanford University. His main field of study is comparative economic systems, their basic structure and evolution.

**2. Course Contents and Learning Objectives**

Course contents:

The first three sessions of the course introduce a framework for analyzing the structure and evolution of economic and other social systems. We examine how the structure is constrained by available technologies, including social technologies, and how the shadow of history and the distribution of power shape social system. The approach draws on the new economics of institutions, and emphasizes property rights, transaction costs, power, and the role of ideology. The remaining nine sessions examine how the new information and communication technologies (ICTs) impacts economic systems by lowering the costs of communication, measuring, and monitoring. We examine how digitization of data, computerization, the internet, the blockchain, artificial intelligence, and biotechnology have undermined the status quo. We consider whether a new market structures are emerging; whether internet marketing facilitates or limits price discrimination; whether massive availability of personal data threatens privacy and whether big data will revolutionize social science; how new business models for creating and distributing books, music and other digital goods are

emerging; whether the blockchain and artificial intelligence will revolutionize social organization. We ask whether current intellectual property institutions are still relevant, and how the new technology affects criminal behavior and crime prevention, political processes, and warfare. And finally, in what direction is the ICT revolution heading?

Main learning objectives:

The seminar has two main goals: (a) provide you with a theoretical approach for analyzing the structure and evolution of economic systems; (b) encourage you to think systematically and critically about the structure of social systems and institutional change in the new ICT age

Target group:

Students who want to think about the impact of the new information and communication technologies on economic, political and social affairs in terms of the economics of institutions and transaction costs.

Teaching style:

Lectures by instructor, presentations by students, and class discussions. One presentation per student, a written mid-term exam, and a final term paper that explores the link between the new technology and social change. There is no final written examination.

Prerequisites:

Course Requirement: Solid understanding of basic micro-economics and capacity to interpret statistical tests

### **3. Grading and Assignments**

Your weekly reading assignments are essays and research reports, which I make available on Moodle. I will put my PowerPoint presentations, if any, on Moodle following each meeting of the class. The course requires a solid understanding of basic microeconomics. A few of the readings contain technical sections—mathematical models and statistical tests. If you have not fully mastered the relevant methods, try to understand the basic arguments and conclusions without exploring the math. The weekly meetings usually begin with an introduction by me, followed by presentations by one or two students, and a general discussion. I set the stage by outlining the issues, and then each of the two students talks for 10-15 minutes (but not longer than 15 minutes). Students can use PowerPoint to present diagrams, tables, and statistical results but I expect them to speak spontaneously, rather than repeat the text of a PP presentation. General discussion follows the presentations. I will call on students to individually participate in the general discussion. The assignment of class presentations is based on a random draw, once I know your names. I will announce the assignments in Session 2. (I need two volunteers for presentation in Session 2). You can exchange your assignment with another student, provided you immediately inform me of the exchange (via email).

The final grade for the course is based upon:

- 1) a mid-term written examination that tests your understanding of the basic theoretical framework (35%)
- 2) one essay (40%)
- 3) the in-class presentation (15%)
- 4) general in-class performance (10%).

- In-class presentation and in-class performance  
The student presenters are in the role of an instructor. They must summarize their presentation in a memo of 2-4 pages. Please email the memo to me prior to your presentation. I will post the memos on Moodle after your presentation. Failure to give a presentation or failure to provide a memo affects the presenter's grade. The grade for the presentation is worth 15% of the final grade.
- Essay  
General: The essay is due 6 December 2018. It is worth 40% of the final grade. If I receive the essay later than 6 December 2018, the essay grade will be lowered by 10% for each day that passes. Essay length: About 12 pages, double spaced, Times Roman 12.  
Topic: The essay examines economic, political or social issues that are linked to recent technical change, for instance the impact of digitization and the internet on specific industries, political processes or social relationships. I want you (a) to analyze the nature of the change, and (b) discuss consequences, responses and potential adjustments. The new technologies include advances in genetics and biotechnology, digitization of data, computers, smart phones, the internet, the blockchain, and artificial intelligence. The initial impact is already felt throughout society. The internet of things is in the early stages and so is artificial intelligence, and blockchains. Choose any topic that interests you, such as the impact of ICT on the creation and distribution of books, music, and news; the nature of cybercrime and new methods of law enforcement; political protest movements and government repression; the potential of blockchain as a tool for reorganizing the coordination of exchange; location of industry; the development of cities; the structure of markets (the nature of market competition and price discrimination); the structure of organization in the workplace; the impact of advances in genetics on privacy; implications of big data for (social) science; opportunities and problems with the internet of things. In researching your essay, look for relevant material in journals and databanks (for instance search Google, Google Scholar; ssrn.com; www.nber.org).

The purpose of the essay is to improve your skills in researching and analyzing a significant social issue, using a flexible theoretical framework. In writing the essay avoid long introductions. Assume you are writing for a well-informed reader. Go directly to your case or argument and make a point!

Composition of Final Grade:

Mid-term written exam	Deadline: during mid-term exam week, exact date tbc		35 %
Essay	Deadline: 6 December 2018	Submit by email	40 %
Class presentation	Deadline: TBA	Memo to be emailed prior to presentation	15%
In-class performance			10%

Late submission of assignments:

For each day the assignment is turned in late, the grade will be reduced by 10% (e.g. submission two days after the deadline would result in 20% grade deduction).

Attendance: Students are expected to be present and prepared for every class session. Active participation during lectures and seminar discussions is essential. If unavoidable circumstances arise

which prevent attendance or preparation, the instructor should be advised by email with as much advance notice as possible. Please note that students cannot miss more than two sessions. For further information please consult the Examination Rules §9.

Academic Integrity: The Hertie School of Governance is committed to the standards of good academic and ethical conduct. Any violation of these standards shall be subject to disciplinary action. Plagiarism, deceitful actions as well as free-riding in group work are not tolerated. See Examination Rules §15.

#### 4. General Readings

I recommend Ian Goldin & Chris Kutarna (May 2016), *Age of Discovery: Navigating the Risks and Rewards of Our New Renaissance* as background/optional reading for the course (available from Amazon.de). All other readings for the course, both required readings and additional readings, are book chapters, essays and research reports, which are available on Moodle.

#### 5. Session Overview

Session	Session Date	Session Title
1	06.09.2018	Economic systems in the 21st century and their historical path: knowledge, transaction costs, politics, institutions
2	13.09.2018	economics of institutions: property rights and transaction costs
3	20.09.2018	origins of institutions: politics, ideology, transaction costs, and path dependence
4	27.09.2018	economics of intellectual property rights
5	04.10.2018	impact of new ICT on economic organization: open source software; sharing economy; and co-creation
6	11.10.2018	blockchain technology, transaction costs, and organization
7	18.10.2018	ICT, AI and economics of high-tech industries
<b>Mid-term Exam Week: 22-26 October 2018 – mid-term written exam, date tbc</b>		
8	01.11.2018	big data: implications for social science, social policy, privacy, and abuse prevention
9	08.11.2018	ICT and artificial intelligence: impact on labor markets and economic growth
10	15.11.2018	cybercrime: nature, regulation and policy; spycraft
11	22.11.2018	Impact of new ICT on political processes, institutions, and warfare
12	29.11.2018	New economic and social landscapes
<b>Final Exam Week: 10-14 December 2018: no final written exam in this course ESSAY IS DUE 6 DECEMBER 2018</b>		

## 6. Course Sessions and Readings

All readings will be accessible on the Moodle course site before semester start. In the case that there is a change in readings, students will be notified by email.

Required readings are to be read and analysed thoroughly. Optional readings are intended to broaden your knowledge in the respective area and it is highly recommended to skim them at least.

### Session 1: 06.09.2018

economic systems in the 21<sup>st</sup> century and their historical path: knowledge, transaction costs, politics and institutions

<b>Learning Objective</b>	how to think about economic systems
<b>Required Readings</b>	Douglass North (1994). Economic performance through time. <i>The American Economic Review</i> , Vol. 84, No. 3 (June), 359-368. Yoram Barzel (1997). Chapter 1, The property rights model. In: <i>The Economic Analysis of Property Rights</i> . Cambridge University Press. 12 pages. Joel Mokyr et al. (2015). Technological anxiety and the future of economic growth: Is this time different? <i>Journal of Economic Perspectives</i> , vol. 29(3): 31-50. Kevin Drum (2018). Welcome to the digital world. <i>Foreign Affairs</i> . 97(4): 43-48.
<b>Optional Readings</b>	Thrainn Eggertsson (2011). The unbearable lightness of A—useful knowledge and economic growth. In <i>Law, Economics, and Evolutionary Theory</i> , P. Zumbansen & G-P Calies, eds. Edward Elgar Publishers. 54-67. Erik Brynjolfsson & Andrew McAfee (2015). Will humans go the way of horses? <i>Labor in the second machine age</i> . Pp. 127-138 in <i>The Fourth Industrial Revolution</i> (2016). Pub. Foreign Affairs. [Collection of essays in a separate folder (session 0) on the website of this course.]

### Session 2: 13.09.2018

economics of institutions: property rights and transaction costs

<b>Learning Objective</b>	core theoretical concepts in the economics of institutions
<b>Required Readings</b>	Douglas W. Allen (2011), Chapter 15, Economic property rights and transaction costs. In <i>Economic Principles: Seven Ideas for Thinking ... About Almost Anything</i> . Person Publ. 4 <sup>th</sup> edition. 28 pages [Only read Chapter 15 in Allen. Allen's Chapters 1 and 2 are optional readings]. Yoram Barzel (1997). <i>The Economic Analysis of Property Rights</i> . Cambridge University Press. Chapter 8, Wealth-maximizing constraints on property rights; 14 pages. Chapter 9, Property rights and non-market allocation; 13 pages.

	Chapter 11, The property rights model. Recapitulation; 5 pages.
<b>Optional Readings</b>	<p>*Bradley L. Garrett (2018). Who owns the space under cities? The attempt to map ground beneath our feet. The Guardian, 11/08/2018.</p> <p>* Robert C Ellickson (2016). When civil society uses an iron fist: The roles of private associations in rulemaking and adjudication. American Law and Economics Review, (18):2; pp. 235-271.</p> <p>[A "*" indicates that an essay is particularly interesting.]</p>

### Session 3: 20.09.2018

origins of institutions: politics, ideology, transaction costs, path dependence

<b>Learning Objective</b>	how do institutions originate?
<b>Required Readings</b>	<p>Douglass C. North (1990). A transaction cost theory of politics. Journal of Theoretical Politics 2(4): 355-367.</p> <p>Thrainn Eggertsson (2005). The political logic of bad economics. Chapter 5 in Imperfect Institutions: Possibilities and Limits of Reform. Cambridge University Press. 25 pages.</p> <p>Daron Acemoglu &amp; James A Robinson (2013), Economics versus politics: Pitfalls of policy advice. Journal of Economic Perspectives 27(2): 173-192.</p> <p>Paul Collier (2016). The cultural foundation of economic failure: A conceptual toolkit. Journal of Economic Behavior and Organization 126: 5-24</p>
<b>Optional Readings</b>	<p>Daron Acemoglu &amp; James A Robinson (2018). The emergence of weak, despotic and inclusive states. May 30, Working Paper, 51 pages.</p> <p>James A Robinson (2016). Policy for development. Aims of Public Policy Lecture, University of Chicago. Slides.</p>

### Session 4: 27.09.2018

economics of intellectual property rights

<b>Learning Objective</b>	ownership of ideas: a good or bad idea?
<b>Required Readings</b>	<p>Francois Leveque &amp; Yann Menier (2012). The Economics of Patents and Copyright. A Primer. Berkeley Electronic Press. Read: Chapter 1: The basic economics of intellectual property law (pp. 1-19); Chapter 3: Reform and use of Patents (pp. 43-60); &amp; Chapter 4: Economic analysis of copyright.</p> <p>Jonathan M Barnett (2016). Three quasi-fallacies in the conventional understanding of intellectual property. Journal of Law, Economics &amp; Policy (12) 1: 1-45.</p>
<b>Optional Readings</b>	<p>Robert P. Merges (2017). What kind of rights are intellectual property rights? Forthcoming in R C Dreyfuss &amp; Justine Pila (eds), The Oxford Handbook of Intellectual Property Law. 50 pages.</p> <p>Petra Moser (Feb. 2016). Patents and innovation in economic history. National Bureau of Economic Research, Working Paper 21964. 37 pages.</p>

**Session 5: 04.10.2018**

impact of new ICT on economic organization: open source software; sharing economy; and co-creation

<b>Learning Objective</b>	to evaluate impact of new ICT on economic organization
<b>Required Readings</b>	<p>Margit Osterloh &amp; Sandra Rota (2007). Open-source software development—just another case of collective invention? <i>Research Policy</i> 36:157-71.</p> <p>John J Horton &amp; Richard Zeckhauser (2017). Owning, using, and renting: Some simple economics of the “sharing economy”. <i>National Bureau of Economic Research, Working Paper 22029</i>.</p> <p>Thierry Rayna &amp; Ludmila Striukova (2015). Open innovation 2.0: Is co-creation the ultimate challenge? <i>International Journal of Technology Management</i>, 69(1): 38-53. Working paper version 18 pages.</p>
<b>Optional Readings</b>	<p>Chaim Fershtman &amp; Neil Gandl (2001). A brief survey of open source software. Published in <i>New Palgrave Dictionary of Economics</i>, in print and online.</p> <p>Joel Waldfogel (2017). How digitization has created a golden age of music, movies, books, and television. <i>Journal of Economic Perspectives</i>. Vol. 31(3): 195-214.</p>

**Session 6: 11.10.2018**

Blockchain technology, transaction costs, and organization

<b>Learning Objective</b>	evaluate impact of blockchain technology on transaction costs and organization
<b>Required Readings</b>	<p>J H Witte (2016). The Blockchain: A gentle introduction. Working Paper. 5 pages.</p> <p>Patric Waelbroeck (2018). An economic analysis of blockchains. <i>CESifo Working Paper #6893</i>. 28 pages.</p> <p>Sinclair Davidson, Primavera De Filippi (2018). Blockchains and the economic institutions of capitalism. <i>Journal of Institutional Economics</i>, 14(4): 639-658.</p> <p>Marcella Atzori (2016). Blockchain-based architectures for the internet of things. Working paper.</p>
<b>Optional Readings</b>	<p>Christian Catalini &amp; Joshua S Gans (2018). Some simple economics of the blockchain. <i>NBER Working Paper 22952</i>.</p> <p>Marcella Atzori (2017). Blockchain technology and decentralized governance. Is the state still necessary? <i>Journal of Governance and Regulation</i>. (6)1: 45-62.</p> <p>Benito Arruñada (2018). Blockchain’s struggle to deliver impersonal exchange. <i>Minnesota Journal of Law, Science &amp; Technology</i>, (19) 1: 55-105.</p>

**Session 7: 18.10.2018**

ICT, AI and economics of high-tech industries

<b>Learning Objective</b>	economic aspects of high-tech industries
<b>Required Readings</b>	Hal R Varian (2001). High-technology industries and market structure. Working Paper, U.C. Berkeley. 33 pages. Hal R Varian (2018). Artificial intelligence, economics, and industrial organization. NBER Working Paper 24839, 24 pages. Paul R Milgrom & Steven Tadelis (2018). How artificial intelligence and machine learning can impact market design. National Bureau of Economic Research, Working Paper 24282, 26 pages
<b>Optional Readings</b>	Hal R. Varian (2010). Computer mediated transactions. American Economic Review, vol. 100 (May): 1-10. Avi Goldfarb & Catherine Tucker (2017). Digital Economics. Forthcoming, Journal of Economic Literature, 90 pages.

**Mid-term Exam Week: 22-26 October 2018 – mid-term written exam (exact date tbc)****Session 8:01.11.2018**

big data: implications for social science, social policy, privacy, and abuse prevention

<b>Learning Objective</b>	to learn about implications of big data for social science, social policy, privacy and abuse prevention
<b>Required Readings</b>	Rob Kitchin (2014). Big data, new epistemologies and paradigm shifts. Big Data and Society, April-June: 1-12. Matthew O Jackson (2018). The role of theory in an age of design and big data. Forthcoming in Jean-Francois Laslier et al. (eds.) The future of economic design. Mark Huberty (2015). Awaiting the second big data revolution. From digital noise to value creation. Journal of Industry, Competition, and Trade, 15:35-47. Lillian Ablon (2018). Data thieves. The motivation of cyber threat actors and their use and monetization of stolen data. Testimony presented before the US House Financial Services Committee, Subcommittee on Terrorism and Illicit Finance, on March 15. Danny Yuzing Huang (2017). Pinning down abuse on Google Maps. WWW 2017, April 3-7, Perth.
<b>Optional Readings</b>	Kenneth Neil Cukier & Viktor Mayer Schoenberger (2013). The rise of big data. How it is changing the way we think about the world. Pp. 50-66 in The Fourth Industrial Revolution (2016) – see special folder on website of the course (session 0). Hal R Varian (2014). Big data: New tricks for econometrics, Journal of Economic Perspectives, vol. 28(2): 3-28. Seth Stephens-Davidowitz & Hal Varian (2015). Hands-on guide to Google data. Report. 25 pages. Hal R Varian (2013). Beyond big data. Presented at Annual NABE Meeting, September 10. 11 pages.



**Session 9: 08.11.2018**

ICT and artificial intelligence: impact on labor markets and economic growth

<b>Learning Objective</b>	to analyse impact of the new ICT and AI on labor market and economic growth
<b>Required Readings</b>	<p>Robert J Gordon (2018). Why has economic growth slowed when innovation appears to be accelerating? NBER working paper 24554, 28 pages.</p> <p>Erik Brynjolfsson (2017). Artificial intelligence and the modern productivity paradox: A clash of expectations and statistics. NBER Working Paper 24001, 46 pages.</p> <p>Andrew Berg et al. (2016). Robots, growth, and inequality. Finance and Development (September): 10-13.</p> <p>Erik Brynjolfsson et al. (2018). What can machines learn and what does it mean for occupations and the economy? AEA Papers and Proceedings, 108: pp. 43-47.</p>
<b>Optional Readings</b>	<p>*Manuel Trajtenberg (2018). AI as the next GPT: A political economy perspective. NBER Working paper 2425, 12 pages.</p> <p>Edward W Felten et al. (2018). A method to link advances in artificial intelligence to occupational abilities. AEA Papers and Proceedings, 108:54-57.</p> <p>Ajay K Agrawal et al. (2018). Economic policy for artificial intelligence. NBER Working paper 24690, 26 pages.</p> <p>Goalsbee (2018). Public policy in an AI economy. NBER Working Paper 24653, 12 pages.</p>

**Session 10: 15.11.2018**

cybercrime: nature, regulation and policy; spycraft

<b>Learning Objective</b>	cybercrime: nature, regulation and policy; spycraft
<b>Required Readings</b>	<p>Kurt Thomas et al. (2015). Framing dependencies introduced by underground commoditization. Google Workshop on the Economics of Information Security. <a href="http://research.google.com/pubs/pub43798.html">http://research.google.com/pubs/pub43798.html</a></p> <p>David S Wall (2017). Crime security and information communication technology: The changing cybersecurity threat landscape and its implication for regulation and policy. Forthcoming in R Brownsword et al. (eds.), The Oxford Handbook on the Law and Regulation of Technology. Oxford University Press.</p> <p>Kurt Thomas et al. (2017). Data breaches, phishing, or malware? Understanding the risk of stolen credentials. CCS'17, Oct. 30-Nov. 3, Dallas, Tx.</p> <p>Micah Lee (2018). What Mueller's latest indictment reveals about Russian and U.S. spycraft. <a href="https://theintercept.com/2018/07/18/mueller-indictment-russian-hackers/">https://theintercept.com/2018/07/18/mueller-indictment-russian-hackers/</a></p>
<b>Optional Readings</b>	<p>Julia Norgaard et al. (2018). Shadow markets and hierarchies: comparing and modeling networks in the dark network. Journal of Institutional Economics, forthcoming, 23 pages.</p>

	<p>Ewan Sutherland (2018). Cybersecurity: Governance of a new technology. Paper presented at Political Studies Association International Conference, Cardiff, 26-28 March.</p> <p>Roderic Broadhurst (2017). Cybercrime: thieves, swindlers, bandits and privateers in cyberspace. Forthcoming in Paul Cornish (ed.) Handbook on Cybersecurity, Oxford University Press. 30 pages (22 plus references).</p>
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**Session 11: 22.11.2018**

Impact of new ICT on political processes, institutions, and warfare

<b>Learning Objective</b>	has new ICT changed political processes, institutions and warfare?
<b>Required Readings</b>	<p>Archon Fung et al. (2013). Six models for the internet + politics. <i>International Studies Review</i>, vol.15: 30-47.</p> <p>Darcy W E Allen, et al. (2017). The economics of crypto-democracy. Working paper, available at <a href="http://ssrn.com">ssrn.com</a>; 11 pages.</p> <p>Jonathan L Zittrain et al (2017). The shifting landscape of global internet censorship. Berkman Klein Center for Internet and Society at Harvard, Research Publication no. 2017-4, 28 pages.</p> <p>Marco Cepik et al. (2015). Cyberwar: Clausewitzian encounters. <i>Space and Defense</i>, (8) 1, pp. 19-33.</p>
<b>Optional Readings</b>	<p>Bruce Etling et al. (2010). Political change in the digital age: The fragility and promise of online organizing. <i>SAIS Review</i> 30(2): 37-49.</p> <p>Nick Cowen (2018). Market for rules: the promise and peril of blockchain distributed governance. Working Paper, available at <a href="http://ssrn.com">ssrn.com</a>; 13 pages.</p> <p>Sergei Guriev (2018). Economic drivers of populism. <i>AEA Papers and Proceedings</i>, 108: 200-203.</p> <p>Cristóbal Rovira Kaltwasser (2018). Studying the (economic) consequences of populism. <i>AEA Papers and Proceedings</i>, 108: 204-207.</p>

**Session 12: 29.11.2018**

new economic and social landscapes

<b>Learning Objective</b>	ICT and the big picture
<b>Required Readings</b>	<p>Erik Brynjolfsson et al. (2014). Labor, capital, and ideas in the power law economy. <i>Foreign Affairs</i>, July/August. 6 pages.</p> <p>Foreign Affairs (2018). How artificial intelligence will reshape the global order. <a href="https://www.foreignaffairs.com/articles/world/2018-07-10/how-artificial-intelligence-will-reshape-global-order">https://www.foreignaffairs.com/articles/world/2018-07-10/how-artificial-intelligence-will-reshape-global-order</a> 5 pages.</p> <p>Nani Jansen Reventlow et al. (2017). Perspectives of harmful speech online. Harvard University's Berkman Klein Center for Internet and Society. <a href="https://cyber.harvard.edu/publications/2017/08/harmfulspeech">https://cyber.harvard.edu/publications/2017/08/harmfulspeech</a> 56 pages.</p>
<b>Optional Readings</b>	<p>Carl David Mildenerberger (2017). Spontaneous disorder: Conflict-kindling institutions in virtual worlds. <i>Journal of Institutional Economics</i>, forthcoming, 23 pages.</p> <p>Marcella Atzori &amp; Mihaela Ulieru (2017). Architecting the e-society on blockchain: A provocation of human nature. Working Paper, June.</p>

**Final Exam Week: 10-14 December 2018 – no class**

**No final written exam in this course  
ESSAY DUE 6 DECEMBER 2018**