LSE100 SUMMER COURSE

6th-24th July 2020

THE LSE100 COURSE

LSE100 is LSE's flagship interdisciplinary course for undergraduate students. It is designed to broaden and deepen students' engagement with social scientific analysis by using pressing social issues as case studies to explore the ways different theories, methods and evidence can shape our understanding of events and phenomena. Through a combination of lectures, classes, specialized skills workshops and field trips, you will immerse yourself in LSE's rich tradition of social scientific inquiry.

In the LSE100 Summer Course, students will engage with two contemporary social issues from a range of social scientific perspectives:

1) How can we address wicked problems? A case study of climate, conflict and food security.
2) Can we control Artificial Intelligence? A case study of systems thinking.

INDICATIVE TIMETABLE

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	How can we address wicked problems?				
	Why is food security so elusive?	How will climate change disrupt the food system?	Is hunger a weapon of war?	What makes wicked problems inseparable?	Can open markets feed the world?
	Welcome and tour of LSE	Walking tour of the City of London	Data analysis project: introduction	Data analysis project: research and planning	Data analysis project: review and feedback
Week 2	Does food aid do more harm than good?	What is the future of food production?	Can we control artificial intelligence?		
			How is AI changing the world?	Is AI biased by design?	Who is vulnerable to automation?
	Data storytelling workshop	Data analysis project: assessment	Westminster Treasure Hunt	AI Bias: Essay preparation	AI Bias: Essay preparation
Week 3	Self-driving cars: are we there yet?	Should criminal justice be automated?	Will privacy survive AI?	But what about the killer robots?	Group Project Presentations
	Group project: introduction	Tour of the Inns of Court	Group project: research and planning	Group project: presentation preparation	Certificate ceremony

This timetable is for indicative purposes only and may be subject to revision.

TOPIC 1: HOW CAN WE ADDRESS WICKED PROBLEMS?

A case study of climate, conflict and food insecurity

After a decade of decline, we are now witnessing rising global hunger. Increasing food demand is driving intensification of agriculture, while climate change threatens our environment and reshapes the availability and fertility of land. Conflict around the world displaces millions of people from their homes and cuts off access to food and clean water. We are witnessing emerging conflicts over water, displacement driven by climate change, and political inaction in the face of hunger, which combine to create complex humanitarian emergencies.

Climate change, conflict and food insecurity are examples of *wicked problems*, a class of social challenges characterised by causal complexity, global reach, and inseparability from other equally-wicked problems. Attempts to address any one challenge can have far-reaching, unintended and unpredictable effects upon the other problems. Could environmental protections disrupt our food supply? Does food aid prolong conflicts? Could intensifying industrial agriculture create conflict, displace local farmers and exacerbate environmental threats?

We will explore the globally interconnected food system, the interdependence of conflict, food and the environment, and the unpredictability of complex systems, to analyse the unique challenge of intervening in wicked problems.

To analyse these complex interrelationships, we will use Tableau, a leading data visualisation software package. Harnessing large datasets to develop data visualisation and analysis skills, each group of students will delve deeply into the intersecting challenges of climate change, conflict and food security in a country of their choosing. Ultimately, these data-driven case-study analyses will allow us to engage deeply and critically with different policy proposals which purport to address these wicked problems.

Seminar topics include:

- Why is food security so elusive?
- How is climate change disrupting the food system?
- Is hunger a weapon of war?
- Can open markets feed the world?
- Does food aid do more harm than good?
- What is the future of food production?

Key concepts:

- Wicked problems
- Causal complexity
- Climate change
- Complex emergencies
- Food systems
- Environmental degradation
- Unintended consequences
- Displacement
- Data storytelling

Key skills:

- Data visualisation and analysis using Tableau
- Data storytelling and visual communication

TOPIC 2: CAN WE CONTROL ARTIFICIAL INTELLIGENCE?

A case study of systems thinking

Advances in Artificial Intelligence (AI) systems offer potential solutions to previously intractable social problems. Rapid AI-driven technological innovation could transform existing social systems, impacting the way we work, communicate, access information and make decisions. Developments in AI are so potent in part because AI is a general-purpose technology, applicable wherever there are systems which can be optimised, datasets which can be analysed, and tasks which can be automated.

But AI is also a dual-use technology: the same tools which could tackle social problems, automate burdensome tasks and optimise systems can also be used to threaten the freedoms, safety and livelihoods of people worldwide. An AI that could fix a systemic problem could equally be used to skew a system to favour its creators or disadvantage particular groups.

Machine learning algorithms are in use to produce content, analyse data, and make decisions in fields as diverse as criminal justice, healthcare, financial markets, warfare, the media, and law enforcement. Can we take control of the ways in which AI is used to ensure that these are changes for the better? We will use the tools and concepts of systems thinking, an interdisciplinary research field which emphasises the importance of the connections within complex systems, to explore how these systems will respond to the use of AI, and to identify the points within the systems at which attempts to make change are most likely to succeed.

Seminar topics include:

- How is AI changing the world?
- Is AI biased by design?
- Who is vulnerable to automation?
- Self-driving cars: are we there yet?
- Should criminal justice be automated?
- Will privacy survive AI?
- Should a robot ever be allowed to kill?

Key concepts:

- Machine learning
- Systems thinking
- Dual-use technology
- Systems change
- Algorithmic bias
- Automation
- Black box problem
- Disruption and transformation
- Privacy

Key skills:

- Systems thinking and system change analysis
- Presentation and communication skills – visual and oral
- Written argumentation