

Development, Innovation and Emerging Technologies: Emerging Technologies and Sustainable Development

Master in International Development MID SEP-2024 S-1

Area International Relations

Number of sessions: 12

Term: Term 3

Category: elective

Language: English

Professor: **GRACE OBADO**

E-mail: gobado@faculty.ie.edu

- Member of African studies group at Elcano Royal Institute,
- Chapter Head of AFRICA 2.0 Spain,
- Member of the board Africa 2.0 International Foundation, and
- Member of the advisory board at Spain's Casa Africa.
- Former Member of Advisory Committee at Oryx Impact

Grace Obado is a Political Scientist with particular expertise in International Relations and Sustainable Development. Her work experience spans a wide range of areas including academia, corporate, and non-profit organizations.

At present, she works as associate professor of International Relations and Sustainable development at IE University's School of Global and Public Affairs. Her research interest is centered on African studies with a focus on governance, regional integration, innovation for sustainable management of human and natural resources, and business in Africa.

She is also the Chapter Head of Africa 2.0 International foundation in Spain. Africa 2.0 is a network of about 600 emerging and consolidated leaders from Africa and the diaspora who share a common vision on how to accelerate the development of Africa.

As Chapter Head, she has spearheaded a number of initiatives to help improve the profile of Africa in Spain, such as organizing high-level forums on Africa, including the Africa Business Forum that was held at the Diplomatic School of Spain in Madrid, November 2016.

Previously, she worked as the International Coordinator for ENIASA, European Network for Information and Action for Southern Africa, and as International Business Director for Hidrolution in Spain. She holds a Bachelor's degree in Political Science and Sociology, a post graduate degree in Human Rights, and Doctorate studies in International Relations all from Universidad Complutense de Madrid.

Grace Obado serves on the board of Africa 2.0 International Foundation, Choiseul Institute in Spain, IE sustainable development club, and the advisory board of Spain's Casa Africa.

She has published various articles and spoken at a number of conferences in Africa, Europe, and the USA, including Africa in the perspective of G20 conference 2017, Africa Business Conference 2015, Harvard Business School, and Clinton Global Initiative, Middle East and Africa Conference (CGI Middle East and Africa 2015).

Grace was ranked among the top 10 most influential African women "Mujeres Africanas mas potentes" by El País Newspaper in 2015, and 500 most influential Africans in the world in 2021 by South Africa's Tropics Magazine.

Office Hours

Office hours will be on request. Please contact at:

gobado@faculty.ie.edu

SUBJECT DESCRIPTION

We live in a world facing economic, social, and ecological challenges, with pressing issues such as meeting basic needs in developing countries, addressing economic slowdown in industrialized nations, dealing with climate change, and achieving sustainable development. The global population is projected to reach 11 billion by the turn of the century, raising concerns about how to sustainably meet present and future needs considering finite resources. Technological innovations, described by Peter Schumpeter as the "central force in economic transformation," are crucial for economic growth, meeting needs, and safeguarding the environment.

Despite the benefits, historical experiences show that people may resist innovation due to discrepancies between the need to innovate and the pressure to maintain social order. Additionally, innovation and new technologies are often perceived as posing risks to moral values, environmental safety, and human health.

In the era of the 4th industrial revolution, marked by emerging technologies like artificial intelligence or genetic engineering, understanding public policies and strategies to mitigate resistance to innovation becomes crucial. This course provides a comprehensive analysis of technological innovation, with a specific focus on the role of emerging technologies in achieving sustainable development. It explores the impact of both frugal and high technologies on key pillars of sustainable development and examines motives behind resistance to innovation while outlining strategies to overcome such resistance. Join us in navigating the complexities of technological innovation and its role in shaping a sustainable future.

LEARNING OBJECTIVES

- Develop an understanding of the role of Innovation and New Technologies in Transforming Societies.
- Analyze and evaluate the impact of technological innovation on key pillars of sustainable development such as agriculture (Green revolution and GMO's), health, education and employment.
- Offer insights into understanding and managing resistance to innovation.
- Understand the interaction between technology, market, government and private companies and society.
- Be able to produce arguments and ideas about the development, technology, policy and social debates.

TEACHING METHODOLOGY

IE University teaching method is defined by its collaborative, active, and applied nature. Students actively participate in the whole process to build their knowledge and sharpen their skills. Professor's main role is to lead and guide students to achieve the learning objectives of the course. This is done by engaging in a diverse range of teaching techniques and different types of learning activities such as the following:

Learning Activity	Weighting
Lectures	25.0 %
Discussions	10.0 %
Exercises in class, Asynchronous sessions, Field Work	15.0 %
Group work	25.0 %
Individual studying	25.0 %
TOTAL	100.0 %

PROGRAM

SESSION 1 (LIVE IN-PERSON)

Introduction: The role of technologies in transforming societies.

A historical overview of the great technological changes, starting with the 1st industrial revolution in 18th Century to the on-going 4th industrial revolution- these will include the emerging technology breakthroughs in artificial intelligence (AI), robots, the internet of things (IoT), biotechnology or nanotechnology to name a few.

Book Chapters: The Fourth Industrial revolution. Chapters 1&2, Klaus Schwab. Foro Economico Mundial. See Bibliography.

Book Chapters: No Ordinary Disruption: The Four Global Forces Breaking All the Trends. Richard Dobbs, James Manyika and Jonathan Woetzel. Public Affairs. See Bibliography.

SESSION 2 (LIVE IN-PERSON)

Evaluate the impact of frugal innovation in transforming societies.

Book Chapters: The Fourth Industrial Revolution (Chapter 3.4- Society and Chapter 3.5- The Individual: Identity, Morality and Ethics. Foro Económico Mundial) (See Bibliography)

Article: The Role of M-Pesa in Kenya's Economic and Political Development (Kenya after 50: reconfiguring education, gender, and policy).See Bibliography.

Practical Case: The Quest for Achieving Financial Inclusion: M-Pesa Versus UPI (HBS KS1304-PDF-ENG)

Working Paper: What's Frugal Innovation? Three defining criteria. Journal of Frugal Innovation, 2:1. 2016. Timo Weyrauch and Cornelius Herstatt. (CED)

Book Chapters: Jugaad Innovation: Think Frugal, Be Flexible, Generate Breakthrough Growth (Chapters 1, 4, 8 & 9) (1st ed. San Francisco, CA: Jossey-Bass, A Wiley Imprint).See Bibliography.

SESSION 3 (LIVE IN-PERSON)

Innovation Cases (Peer Review Exercise/Discussion Forum 24 Hrs).

Peer review of students' recorded presentation on the following cases:

- Innovation Systems Case Studies:
 - Chapter 4: India.
 - Chapter 7: Brazil, China, India and South Africa.
- Innovation, Technological Learning and Capabilities Cases:
 - Chapter 10: China.
 - Chapter 11: Botswana.
- Learning and Interaction Within Systems Cases:
 - Chapter 12: Mexico.
 - Chapter 13: Indonesia.

Book Chapters: Innovation Systems and Capabilities in Developing Regions: Concepts, Issues and Cases (Farnham: Ashgate Publishing, 2012).See Bibliography.

SESSION 4 (LIVE IN-PERSON)

Impact of technological innovation on key pillars of sustainable development:

- Economic growth.

Book Chapters: The Fourth Industrial Revolution (Chapter 3: Impact, Foro Económico Mundial).Klaus Schwab.See Bibliography.

Book Chapters: Seeing Around Corners: How to Spot Inflection Points in Business Before They Happen (Chapters 7 & 8, 2021).See Bibliography.

SESSION 5 (LIVE IN-PERSON)

Economic growth and Development (Cases).

Working Paper: Scenarios for the future of technology and international development. Rockefeller Foundation.GBN. (CED)

SESSION 6 (LIVE IN-PERSON)

Agriculture.

*Book Chapters: Impact of Technology on Agriculture and Food Production.*Conor Parker.CED
*Book Chapters: Impact of Genetically Modified Crops on Farm Sustainability in the United States (Chapter 4: Farm-System Dynamics and Social Impacts of Genetic Engineering).*See Bibliography.
*Book Chapters: Innovation and Its Enemies: Why People Resist New Technologies (Chapter 9: Taking Root, Transgenic Crops).*New York 2016.
Practical Case: Monsanto Company - Doing Business in India (HBS W12183-PDF-ENG)

SESSION 7 (LIVE IN-PERSON)

Health and Care System.

Article: How to Accelerate the Adoption of Digital Health Technology (HBR H04ARX-PDF-ENG)

Article: Using Technology to Improve Rural Health Care (HBR H03YHK-PDF-ENG)

Article: Building Health Care AI in Europe's Strict Regulatory Environment (HBR H05W2J-PDF-ENG)

SESSION 8 (LIVE IN-PERSON)

Employment (The impact of artificial intelligence (AI) on employment in the developed and developing world).

Article: Will Artificial Intelligence Usurp White Collar Jobs?.Human Resource Management International Digestve n3 (2017) 1-3) (CED)

Article: Will AI Jobs Revolution bring about Human Revolt, Too?Kentaro Toyama (The People Space)

SESSION 9 (LIVE IN-PERSON)

Education.

Technical note: The Impact of mobile technologies on distance education.The impact of mobile technologies on distance education. TechTrends, 56(6), 49-53. 2012. (CED)

Article: Gender Gap in Technology.Gender gap in technology. Vital Speeches of the Day, 73(4), 159-163. 2007.Sally Mason. (CED)

SESSION 10 (LIVE IN-PERSON)

Understanding and Managing Resistance to Innovation.

Social responses to innovation- such as intuitive factors, vested interests or sociopsychological factors.

How societies organise themselves to resist innovation.

Book Chapters: Innovation and Its Enemies: Why People Resist New Technologies.Chapter 1: Gales of Creative Destruction, 2017.

SESSION 11 (LIVE IN-PERSON)

Historical cases around well-established products that faced resistance in their market debut will also be analysed.

Outline and evaluate ways of overcoming opposition to innovation Emphasis will be put on innovations that are inclusive, empowering and human-centred.

Book Chapters: Innovation and Its Enemies: Why People Resist New.Chapter 2 (Coffee), Chapter 6

(Electricity) and Chapter 11. Oiling the wheels of Novelty.

SESSION 12 (LIVE IN-PERSON)

Final Exam.

EVALUATION CRITERIA

criteria	percentage	Learning Objectives	Comments
Final Exam	35 %		Closed-book, In-person Exam- Individual Work
Class Participation	20 %		In-Class 10% + Discussion Forum 10%- Individual Work
Group Presentation	25 %		In-Class Group Presentations- Group Assignment
In-class Case analysis-Group Work	20 %		Peer-review Exercise- Group Assignment

FAILING GRADE AND REASSESSMENT

A) FINAL EXAM (In-person 75 Min)

The final exam will consist of two sections:

- a) Short questions 15%
- b) Case analysis 20%

B) PARTICIPATION

Participation will take place in Face-to-Face sessions and Asynchronously through using the discussion board.

Three main criteria will be used in reaching a judgment about your class participation:

- Depth and Quality of Contribution: The most important dimension of participation concerns what it is that you are saying. A high-quality comment reveals the depth of insight, rigorous use of case evidence, consistency of argument, and realism.
- Moving Your Peers' Understanding Forward: Great ideas can be lost through a poor presentation. A high-quality presentation of ideas must consider the relevance and timing of comments and the flow and content of the ensuing class discussion. It demands comments that are concise and clear, and that are conveyed with a spirit of involvement in the discussion at hand.
- Frequency: Frequency refers to the attainment of a threshold quantity of contributions that is sufficient for making a reliable assessment of comment quality. The logic is simple: if contributions are too few, one cannot reliably assess the quality of your remarks. However, once the threshold quantity has been achieved, simply increasing the number of times you talk does not automatically improve your evaluation. Beyond the threshold, it is the quality of your comments that must improve. In particular, one must be especially careful that in claiming more than a fair share of "airtime", quality is not sacrificed for quantity. Finally, your attempts at

participation should not be such that the instructor has to “go looking for you”. You should be attempting to get into the debate on a regular basis.

C) GROUP PRESENTATIONS

Each group must present a reading/ readings (mostly cases) corresponding to an indicated Face-to-Face session.

Good case briefs are concise, but also provide a fact-based rationale for your recommendations and implementation plan. The rationale should reflect a good understanding of the important issues of the case and may integrate previous material from the class or your experience. You might also note factors that argue against your recommendation, and how your implementation plan might minimize the impact of these factors.

D) CASE ANALYSIS (Session 3)

INNOVATION CASES (IN-CLASS PRESENTATIONS, PEER REVIEW EXERCISE AND DISCUSSION FORUM 24 Hrs).

Peer review of students' in-class presentations.

BIBLIOGRAPHY

Compulsory

- Klaus Schwab. (2016). *The Fourth Industrial Revolution*. First. Portfolio Penguin. ISBN 9780241300756 (Printed)
- Rita McGrath. (2019). *Seeing Around Corners*. Houghton Mifflin Harcourt Publishing Company. ISBN 9780358237075 (Printed)
- Calestous Juma. (2019). *Innovation and Its Enemies*. First. Oxford University Press. ISBN 9780190051600 (Printed)
- Richard Dobbs et al.. (2016). *No Ordinary Disruption: The Four Global Forces Breaking All the Trends*. First. PublicAffairs. ISBN 9781610397353 (Printed)
- Siyanbola, Willie, Abiodun Egbetokun, and Olumuyiwa Olamide. (2017). *Innovation Systems and Capabilities in Developing Regions : Concepts, Issues and Cases*. Routledge. ISBN 9781138115729 (Printed)
- Radjou, Navi, Jaideep C Prabhu, and Simone Ahuja. (2012). *Jugaad Innovation : Think Frugal, Be Flexible, Generate Breakthrough Growth*. Wiley. ISBN 9781118249741 (Printed)
- Mickie Mwanzia Koster, Michael Mwenda Kithinji, Jerono P Rotich. (2016). *Kenya after 50 : reconfiguring education, gender, and policy*. Palgrave Macmillan. ISBN 9781349564583 (Printed)

BEHAVIOR RULES

Please, check the University's Code of Conduct [here](#). The Program Director may provide further indications.

ATTENDANCE POLICY

Please, check the University's Attendance Policy [here](#). The Program Director may

provide further indications.

ETHICAL POLICY

Please, check the University's Ethics Code [here](#). The Program Director may provide further indications.

