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Global Health and Epidemiology

Course Coordinator:

STEFANIA BOCCIA

Faculty:

Stefania Boccia, Stefano Vella, Maurizio Marceca, Angelo M. Pezzullo, Leonardo Villani, Francesca de' Donato

Overview

Area: Health Sciences

Dates: June 8 - 19 (2 weeks)

Campus: Rome

Course Number: HL/PP300

Term: Summer 2026

Credits: 6 ECTS

Course description

One of the overall goals of the course is introducing the students to the concepts and definitions of epidemiology and global health, as well as global health challenges governance. The course will enable students to calculate and interpret the measures of the global health burden of diseases, health indicators and major determinants of disease. Moreover, an overview on ethical issues raised in the field of global health will be provided, covering a wide range of global bioethics topics and human rights issues. One part of the lessons will be focused on infectious diseases and outbreaks but will also cover the topics of vaccination policies around the world. Non-communicable diseases (NCDs) will be explored, placing particular focus on the global epidemic rise of these conditions and preventive measures. The increase in population movement has substantial public health implications, thus, the course will provide an overview of global migration and international experiences when addressing the health needs of migrants and refugees. Moreover, the course will cover one of the major global emergencies related to environmental exposures and their impact on the population health. In particular, one part of the lessons will be focused on Planetary Health and climate crisis, which poses a threat to health with both a direct effect on health (cardiovascular disease, respiratory disease, mental disorders) and an indirect effect (migration, alteration of work activities).

The course will use an interactive teaching approach, covering lectures, practical exercises, open discussions, and group analyses. At the end of the course students will take a mandatory final exam covering contents of the whole program.

Prerequisites

- Principles of health sciences
- Basic principles of epidemiology
- Basic principles of statistics
- Highly motivated and interested in the global health thematic
- Ability to work in a team



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Course Requirements

- Students are expected to regularly attend class sessions and to actively take part in class debate and case discussions
- Students are expected to be prepared on the assigned readings
- Students are expected to deliver one group assignments and present it to the class

Topics

- The global burden of disease and the use of epidemiological indicators
- Globalization and global health
- Ethical challenges in the context of global health
- Genomics and public health
- Vaccination policies
- Healthcare emergencies management
- Antimicrobial Resistance
- Environmental health, Planetary Health and major global emergencies

Learning Outcomes

- Understanding the principles of global health, major challenges and global health governance
- Ability to understand and apply epidemiological indicators
- Understanding global bioethics topics and human rights issues
- Acquisition of an international perspective of vaccination policies worldwide
- Understanding global environmental exposures and the impact on population health

Teaching Methods

- Lectures, team working and in class discussion, site visits, role playing and case studies.

Faculty

Stefania Boccia
Stefano Vella
Maurizio Marceca
Angelo M. Pezzullo
Leonardo Villani
Francesca de' Donato

Evaluation

- Assessment of in class participation (30%)
- Mid-term practical session - Group assignments (case studies presentation) (30%)
- Final exam (multiple choice test) (40%)



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Detailed Description of The Assignments

- For the mid-term assessment, students will be divided into groups, according to their background, in order to have an equal distribution of different backgrounds in each group. A topic will be assigned to each group and students will be asked to give a presentation of the work.
- The final exam will be a written exam composed of 30 multiple choice questions. The weights of lectures in the questions of the final exam will be:
 - Lecture 1: Public health epidemiology: 4 questions
 - Lecture 2: Global warming and environmental exposures impacting population health: 2 questions
 - Lecture 3: Ethical challenges in the context of global health: 3 questions
 - Lecture 4: Vaccines and vaccination policies: a global picture: 3 questions
 - Lecture 5: Healthcare emergencies management: 3 questions
 - Lecture 6: Antimicrobial Resistance: a global challenge: 3 questions
 - Lecture 7: Global health trends and challenges: the global burden of disease: 2 questions
 - Lecture 8: Social determinants of health: an overview and implications for health policy: 2 questions
 - Lecture 9: Public health genomics: 3 questions
 - Lecture 10: Global health - from current challenges to governance: 3 questions
 - Lecture 11: Interactive session/working groups - Designing a global health project: 2 questions

Readings

- Selection from: Charles Guest, Walter Ricciardi, Ichiro Kawachi, and Iain Lang (2013) Oxford Handbook of Public Health (5 ed.), OXFORD UNIVERSITY PRESS
- WHO: World health statistics 2018: monitoring health for the SDGs, sustainable development goals (2018)
- WHO: guidelines on ethical issues in public health surveillance (2017) WHO: Global Vaccine Action Plan Report (2017)
- Selection of reading from individual faculty members

Schedule

- Lecture 1: Public health epidemiology
- Visit 1: Santo Spirito Medicine Museum
- Lecture 2: Global warming and environmental exposures impacting population health
- Lecture 3: Ethical challenges in the context of global health
- Visit 2: Museum of the National Institute of Health – ISS
- Lecture 4: Vaccines and vaccination policies: a global picture
- Lecture 5: Healthcare emergencies management
- Lecture 6: Antimicrobial Resistance: a global challenge
- Lecture 7: Global health trends and challenges: the global burden of disease
- Lecture 8: Social determinants of health: an overview and implications for health policy



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- Lecture 9: Public health genomics
- Visit 3: Gemelli Hospital (Gemelli ART)
- Lecture 10: Global health - from current challenges to governance
- Lecture 11: Interactive session/working groups - Designing a global health project
- Discussion & Q&A for the exam. Final exam, final remarks and conclusion.

Rules of conduct

Attendance: Attendance is mandatory, and no absence/s will be excused. Please consider that Field Trips are considered equal to regular classes and indeed you are expected to attend the visits. Unexcused absences will not be accepted. An excused absence will only be granted if you are seriously ill and can support your claim with a local doctor's certificate dated the day you missed class (therefore you must go to the doctor that same day) that has to be delivered to the Professor or to UCSC International Office. Any other absence will not be excused and will result in not being admitted to the final exam, which corresponds to a 0 (zero) in the final exam.

Exam Date: The exam date cannot be re-scheduled. Should the dates of the final exams be moved for force major reasons, UCSC International Office and the Professor will promptly inform you in class and/or via e-mail on the new date agreed. Unexcused absences to the exams will result in a failing grade in the course.

In cases of unforeseeable circumstances such as illness or injury on the day of the exams, you must submit a medical certificate and communicate your absence to the Professor and UCSC International Office via email prior to the exam. If the student does not justify his/her absence through sufficient documentation and with adequate notice before the final test, you will receive an automatic Failed. Absences for other unforeseeable circumstances will not be accepted and will result in a failing grade.

Biographies

STEFANIA BOCCIA

Stefania Boccia is full Professor of Hygiene, Preventive Medicine and Public Health at Università Cattolica del Sacro Cuore (UCSC) in Rome, and Co-Research Director of the Epidemiology and Biostatistics facility at Policlinico Universitario A. Gemelli – IRCCS. Since March 2025, she has been the Director of the Department of Life Sciences and Public Health at UCSC. Since July 2025, she has also been Vice Scientific Director of the Fondazione Policlinico “A. Gemelli” (FPG) IRCCS, Rome.

She is also an affiliate of the Meta-Research Innovation Center at Stanford University, USA. She is associate editor of the European Journal of Epidemiology and the European Journal of Public Health, and a member of the advisory board of Lancet Regional Health – Europe.

She is included in Stanford University's list of the top 2% most influential scientists worldwide, in which she ranks fourth among Italian researchers in public health

(<https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/5>).

Author of 460 scientific papers—382 indexed in Medline—and 35 books or book chapters, her work focuses mainly on Cancer Epidemiology and Prevention, Personalised Prevention, Epidemiological Methodology, Health Services Research, Genomics in Public Health, Hospital Hygiene and Environmental Hygiene. She has a Scopus h-index of 62 and her work has received 14,846 citations. Her main research topics include Public Health Genomics and Cancer Epidemiology and Prevention. She currently coordinates the EU-funded projects: the "European Staff Exchange Programme for deSigning pErSonalised prevention of future healthcare" (EXPOSES) and "A PeRSonalized Prevention roadmap for the future HEaLthcare" (PROPHET), and participates in several other EU-funded initiatives.



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MAURIZIO MARCECA

Maurizio Marceca, MD, is Associate Professor of Hygiene and Public Health at Sapienza University of Rome (Department of Public Health and Infectious Diseases). He is a public health specialist whose work focuses on the relationship between health and social vulnerability, with a long-standing emphasis on migration and health, health equity, and the organization of services for vulnerable populations.

He served as National President of the Italian Society of Migration Medicine (SIMM) for 2016–2020, after holding several leadership roles within the society (including responsibilities in scientific and training activities). Since the mid-1990s he has participated in commissions, technical-scientific committees, working groups, and research projects at international, national, and regional level, addressing policies and interventions aimed at reducing health inequalities among socially vulnerable groups. According to public profiles and institutional materials, he is author/co-author of 180+ scientific contributions across hygiene, epidemiology, public health and global health, with a substantial body of work specifically dedicated to the health dimensions of migration.

STEFANO VELLA

Stefano Vella, MD achieved specialty degrees in both Infectious Diseases and Internal Medicine. He is currently adjunct Professor of Global Health at Università Cattolica del Sacro Cuore in Rome, Italy, and member of the Program Committee of Horizon Europe (Health Cluster 2021-2027). He was the Director of the Global Health Center of the National Institute of Health and, until 2016, he was the Director of the Drug Department of the National Institute of Health. Dr. Vella is the former President of the Italian Drug Agency. His research group works and publishes extensively on various aspects of HIV pathogenesis, treatment and prevention. Dr Vella, has been invited as speaker in over 100 International Conferences, is an article reviewer for numerous journals, including Science, Lancet, Journal of Infectious Diseases, AIDS, Journal of AIDS, and he has published more than 200 articles in international journals. Since 1996, as Member of the Governing Council of the International AIDS Society [IAS] and subsequently as IA President (2000-2002), he actively worked towards promoting access to treatment and care in the South of the World and moving the international AIDS conferences in the South of the World. Indeed, he was chair of numerous WHO therapeutic guidelines for the prevention and treatment of HIV/AIDS. Finally, he was scientific advisor of the Italian Ministry of Foreign Affairs, of the Ministry of Finances and of the Ministry of Health.

ANGELO MARIA PEZZULLO

Researcher with specific experience, education, and interests in the methods of research and evidence synthesis for public health. President since 2024 of the Public Health Epidemiology section of the European Public Health Association (EUPHA). Has visited and conducted research at various Italian and foreign institutions: Istituto Superiore di Sanità (Rome, 2018), EUPHA (Utrecht, Netherlands, 2019-20), Department of Epidemiology at Erasmus MC (Rotterdam, Netherlands, 2020-22), Meta-Research Innovation Center at Stanford (Stanford, USA, 2022, 2024), Jefferson College of Population Health (Philadelphia, USA, 2022). Contributed to the foundation and served as scientific director of the Italian Institute for Planetary Health from 2019 to 2022. Earned an MD in 2016 from the University of Campania, a MSc in Epidemiology at the Erasmus University Rotterdam in 2020, and board certification in Public Health and Preventive Medicine (2021) and a PhD in Public Health (2024) at UCSC.

LEONARDO VILLANI

Leonardo Villani, MD, PhD, specialist in Hygiene and Preventive Medicine and Associate Professor of General and Applied Hygiene at Saint Camillus International University of Health Sciences (UniCamillus) in Rome. He completed a second-level Master in Epidemiology and Biostatistics and a PhD in Basic Biomedical Sciences and Public Health at Università Cattolica del Sacro Cuore (UCSC), Rome. His scientific work focuses on epidemiology and prevention of infectious diseases, vaccination policies, antimicrobial resistance, health services research and health inequalities, with a growing interest in planetary health and the links between environment and health. He is involved in national and international public health projects with particular attention to prevention, health systems and environment–health interactions. He served as Medical Director at the Health Direction of the Local Health Authority ASL Roma 1 (2021–2022), and worked as research



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collaborator in Management Innovations, Diagnostics and Clinical Pathways at Bambino Gesù Children's Hospital (2023–2024). Since 2025 has been involved in teaching, research and mentorship activities at the College of Population Health, Thomas Jefferson University in Philadelphia (USA). He is Scientific Coordinator of the Italian Institute for Planetary Health (IIPH), Deputy Scientific Director of the Osservatorio sulla Salute nelle Regioni Italiane (Osservasalute) and Scientific Coordinator of the Technical Committee of the Inter-parliamentary Group on Internal Areas at the Italian Senate. He also coordinates the Planetary Health Working Group of the Italian Society of Hygiene,

FRANCESCA DE' DONATO

Francesca de' Donato, PhD, is a climatologist/biometeorologist and environmental epidemiologist based in Rome, working at the Department of Epidemiology of the Lazio Regional Health Service (ASL Roma 1). Her research focuses on the health impacts of extreme temperatures and climate change, including exposure modelling and the identification of vulnerable groups, with increasing use of satellite data to estimate high-resolution temperatures and study within-city health differences.

She manages the Italian national Heat Health Warning System on behalf of the Ministry of Health and Civil Protection, and contributes to national and regional (Lazio) heat-prevention plans.

She holds a PhD in Epidemiology and Biostatistics from Imperial College London, and has been active for many years in national and international research initiatives on extreme weather events, climate change, and health outcomes.

Her scientific activity includes peer-reviewed publications in environmental and climate-health epidemiology.