

# Pandemics 1 – Determinants and Management

## An international online course

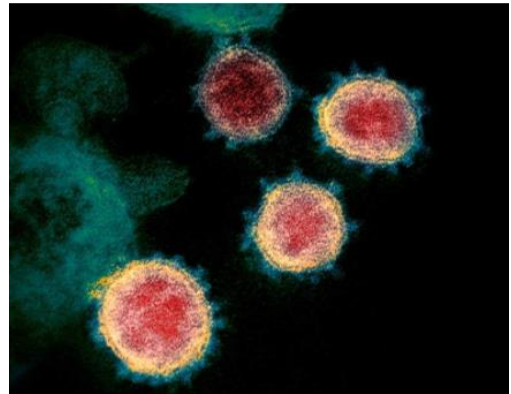
Dear students,

we kindly invite you to participate in our International Online Course **Pandemics 1 - Determinants and Management**, offered jointly by [University College Freiburg](#) (UCF) and the [Centre for Medicine and Society](#) (ZMG) of the [University of Freiburg](#), Germany.

### Course Description:

As humans have spread across the world, so have infectious diseases. Even in this modern era, outbreaks are nearly constant, but not every outbreak reaches pandemic levels. There are some major pandemics that have afflicted humankind throughout history such as plague, cholera, influenza, and coronavirus diseases, thus it is important to know the way they were controlled in the past and how these diseases are managed today. Infectious diseases still represent threats for human health as pathogens can spread rapidly through global trade and travels. Global surveillance programs are thus needed to detect and identify pathogens' spill over from animals to humans as well as to control water-borne pathogens and vector-borne diseases. We have selected six infectious diseases that are still relevant: HIV/AIDS, malaria, tuberculosis, dengue fever, Ebola, and Covid-19, but will also discuss other examples. The overall objective of the course is to train students in the prevention, early detection, management and monitoring of major contemporary pandemics. The specific learning objectives of this course are the ability to describe and understand:

- Pandemics in history and in modern times
- How to measure the transmission dynamics and expansion of epidemics/pandemics
- Pathogens causing epidemics/pandemics and their routes of transmission
- Epidemiological indicators to measure the extent and burden of a pandemic
- Social and cultural determinants driving a pandemic
- Response options to different pandemics
- Coping strategies in Health Services with the fast surge of cases
- Transmission prevention according to the route of transmission.



*Figure 1: Electron Microscope image of COVID-19 virus particles*

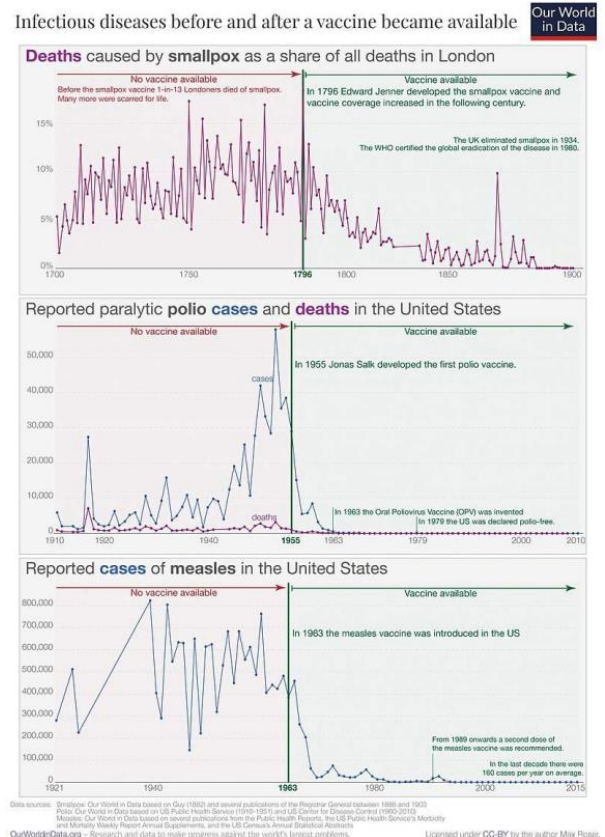
**Course format:** The course involves a substantial amount of self-study. Before the course starts, students will have to complete a number of self-study e-learning modules, which provide a general background on the historical context of pandemics, pathogens and transmission dynamics. These modules will be available through the University of Freiburg's e-learning platform ILIAS.

The gathering part of the course will start with an online kick-off meeting, followed by weekly online meetings about the "disease of the week". Students will have to prepare the Friday sessions by covering additional self-study modules - one on each disease – that usually contain a video lecture and a quiz along with additional literature for optional self-study. In these sessions, students and the instructor will actively work on issues related to the disease of the week, following a flipped-classroom approach.

**Attendance:** Attendance in all online meetings - including the kick-off meeting - is required in order to obtain credit for this class.

**Assessment:** Students who want to obtain graded credits (6 ECTS credits) in this class, need to give a presentation on June 7 (30% of final grade) and provide a written report of no more than 1500 words (70% of final grade) due on June 23. Students who want to get a pass/fail mark need to participate in all online meetings and give a presentation on June 7. It is also possible to attend the class for no credits.

We expect students to prepare their final presentation jointly with other course participants from outside their own institution. This will require cooperation and collaboration with students having a different subject-specific and possibly cultural background in an online setting. We expect participants to be open to this cross-cultural experience and will support participants in several ways.



**Dates and Times:** Summer semester 2024 – UCF block I (April 12-June 7) Fridays 14-16h (Central European Summer Time, CEST, Berlin/Freiburg time)

April 12	Kick-off meeting	14-16h
April 19	HIV-AIDS	14-16h
April 26	Malaria	14-16h
May 3	Tuberculosis	14-16h
May 10	Dengue and other vector transmitted viruses	14-16h
May 17	Ebola	14-16h
May 24	Covid-19	14-16h
June 7	Student presentations	14-18h!

**Location for online meetings:** University of Freiburg's e-learning platform [ILIAS](#), BigBlueButton video conferencing tool. Students who are not enrolled at the University of Freiburg will get a guest account. In order to participate meaningfully in the interactive online meetings you will need a stable internet connection that is suitable for video-conferencing.

**Hosts:** [Prof. Dr. med. Axel Kroeger](#), [Dr. Simon J. Büchner](#)

**Instructor:** Txema Calleja

Jesus Maria Garcia Calleja studied Medicine and Surgery at the School of Medicine University of Valladolid, has a diploma in Tropical Medicine from the Institute of Tropical Medicine Prince Leopold, in Public Health from the Pierre and Marie Curie University and a Master's Degree in Public Health from the University of Leeds. He worked for 16 years at the World Health Organization HIV department, as a senior professional, as team lead for conducting HIV surveillance, population and behavioral health surveys and operation research, strengthening routine health information and STI program monitoring systems, improving public health information systems, impact monitoring and program reviews and evaluations. Since 2019, he works as an International Health consultant for WHO/UNAIDS/GFATM.