



Florence University of the Arts (FUA) is an academic institution for study abroad in Florence, Italy. FUA collaborates with The American University of Florence (AUF), an international university offering US-style undergraduate and graduate degrees, in a cooperation to offer study abroad programs with a diverse breadth and depth of academic curriculum.

FUA study abroad programs may include AUF offerings, which are US-aligned in terms of higher education standards as per the university's institutional structure. Common courses offered by FUA and AUF have been jointly selected by both institutions as eligible for mutual recognition and delivery. As such, equal academic standards, credibility, and outcomes are vetted by the Academic Offices of the institutions for all courses and syllabi offered in the study abroad program.

SCHOOL OF Life STUDIES AND HUMAN SCIENCES

DEPARTMENT OF HEALTH HUMANITIES

COURSE TITLE: MICROBIOLOGY ACROSS THE CENTURIES

COURSE CODE: LSHHMA280

3 semester credits

1. DESCRIPTION

This course retraces the historical impact and scientific components of a series of diseases, from the Black Death in Florence and Milan to Influenza, HIV/AIDS, Polio, Ebola, and Covid-19 across the world. It addresses both the distribution and determinants of health-related diseases in specified populations, distinguishing between endemics, epidemics, and pandemics. The course also explores the effects of social mobility on the spread of diseases from antiquity to present-day scenarios. It defines and differentiates across rates, prevalence, and incidence to calculate and predict the spread of diseases.

2. OBJECTIVES

The aim of this course is to provide introductory knowledge of the main characteristics of microbiology by assessing endemics, epidemics, and pandemics across various historical periods and geographical areas.

Upon successful completion of this course, students will:

- Gain knowledge about a variety of diseases that shaped history from antiquity to modernity.
- Be able to differentiate epidemics, endemics, and pandemics.
- Understand the role of social mobility for the spread of diseases.
- Define and differentiate across rates, prevalence, and incidence.
- Recognize the role of epidemiology from the 20th century to the present day.
- Recognize the role of vaccines historically and today.
- Acknowledge the need to work cooperatively for the achievement of the Millennium Development Goals.

3. REQUIREMENTS

There are no prerequisites for this course.

4. METHOD

This course consists of lectures, class discussions, projects, and site visits within the local community. Mediums for instruction used will include, but are not limited to, interactive and hands-on activities which challenge thought processes, academic texts and studies, videos, slides, guided problem solving, and experiential and/or field learning activities where applicable.

5. TEXTBOOK – FURTHER READINGS – RESOURCES

TEXTBOOK:

- Wilson, H. W. 2019. *Pandemics: The Invisible Enemy*. Grey House Publishing. This is available

- at this link: https://mhl.org/sites/default/files/Pandemics_Final.pdf
- Green, M. H. 2014. *Pandemic Disease in the Medieval World: Rethinking the Black Death*, special inaugural issue of *The Medieval Globe* 1. This is available at this link: http://scholarworks.wmich.edu/medieval_globe/1/

The textbook is mandatory for successful completion of the course.

Where applicable, additional materials, handouts and/or notes will be provided by the instructor.

FURTHER READINGS

(Books listed below are available in the FUA-AUF library)

- College Entrance Examination Board. *The Spanish Flu and its Legacy*. New York: College Board
- Ciulla M. M. 2020. 'The Plague of 1630 in Milan and the COVID-19 Pandemia', *Acta biomedica: Atenei Parmensis*. 91(2): 234–235
- Greene, W. C. 2007. 'A history of AIDS: Looking back to see ahead', *European Journal of Immunology*. 37: 94-102
- Mann, J. & Tarantola, D. 1998. 'Responding to HIV/AIDS: A Historical Perspective', *Health and Human Rights*. 2(4): 5-8
- Morrison, A. Kirshner, J. & Molho, A. 1985. 'Epidemics in Renaissance Florence', *American Journal of Public Health*. 75(5): 528-535
- Ramsden, I. 2005. *A Short Introduction to Epidemiology*. Wellington: Centre for Public Health Research
- Salahshoori, I. et alii. 2021. 'Overview of COVID-19 Disease: Virology, Epidemiology, Prevention Diagnosis, Treatment, and Vaccines', *Biologics*. 1, 2–40

Additional resources:

- <https://www.teachepi.org/>
- <https://www.coursera.org/course/epidemiology>

LIBRARIES IN FLORENCE

The FUA-AUF library is located in Corso Tintori 21. Please consult the posted schedules for official opening times. Also note that the library is for consultation only and it is not possible to borrow materials. The library is equipped with a scanner and internet access so that you may save or email a digital copy of the pages needed.

Students may also utilize additional libraries and research centers within the local community:

BIBLIOTECA PALAGIO DI PARTE GUELFA

Located in Piazzetta di Parte Guelfa between Piazza della Repubblica and Ponte Vecchio. Please consult the library website for hours of operation:

http://www.biblioteche.comune.fi.it/biblioteca_palagio_di_parte_guelfa/

BIBLIOTECA DELLE OBLATE

Located in via dell'Oriuolo 26. Please consult the library website for hours of operation:
www.bibliotecadelleoblate.it

THE HAROLD ACTON LIBRARY AT THE BRITISH INSTITUTE OF FLORENCE

Located in Lungarno Guicciardini 9. Please consult the library website for hours of operation. This library requires a fee-based student membership. For information: www.britishinstitute.it/en

6. FIELD LEARNING

Please consult your Official Registration for any mandatory field learning dates. Field Learning Activities cited in Official Registrations are an integral part of the course and also include an assignment that counts towards your final grade, details will be provided on the first day of class.

7. COURSE MATERIALS

No additional course materials are necessary.

8. COURSE FEES

Course fees cover course-related field learning activities, visits, and support the instructor's teaching methodologies. Book costs are not included in the course fee. The exact amount will be communicated by the instructor on the first day of class.

9. EVALUATION – GRADING SYSTEM

10% Attendance

20% Participation & Assignments

20% Midterm Exam

25% Final Exam

25% Final Research Project

A = 93-100 %, A- = 90-92%, B+= 87-89%, B = 83-86%, B-=80-82%, C+ = 77-79%, C=73-76%, C-=70-72%, D = 60-69%, F= 0-59%, W = Official Withdrawal, W/F = Failure to withdraw by the designated date.

10. ATTENDANCE – PARTICIPATION

Academic integrity and mutual respect between instructor and student are central to the academic policy and reflected in the attendance regulations. Student presence is mandatory and counts toward the final grade.

Absences are based on academic hours: 1 absence equals 3 lecture hours.

Two absences: 6 lecture hours, attendance and participation grade will be impacted.

Three absences: 9 lecture hours, the final grade may be lowered by one letter grade.

Four absences: 12 lecture hours, constitutes automatic failure of the course regardless of when absences are incurred.

Please note:

- The above hours refer to lecture hours. Please note that the contact / credit hour policy in the academic catalog includes additional distribution ratios according to delivery category. Ex: 1 absence equals 6 FL/SL/Lab hours or 9 EL hours.

- Hours may be distributed in different formats according to the academic course schedules.

LATE ARRIVAL AND EARLY DEPARTURE

Arriving late or departing early from class is not acceptable. Two late arrivals or early departures or a combination will result in an unexcused absence. Travel is not an exceptional circumstance.

TRAVEL (OR DELAYS DUE TO TRAVEL) IS NEVER AN EXCUSE FOR ABSENCE FROM CLASS.

It is the student's responsibility to know how many absences are incurred. If in doubt, speak with your instructor!

Participation: Satisfactory participation will be the result of contributing to class discussions by putting forth insightful and constructive questions, comments and observations. Overall effort, cooperation during group work, proper care of work space and tools, responsible behavior, and completion of

assignments will be assessed. All of the above criteria also apply to Field Learning and site visits.

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TRAVEL (OR DELAYS DUE TO TRAVEL) IS NEVER AN EXCUSE FOR ABSENCE FROM CLASS.

It is always the student's responsibility to know how many absences he or she has in a course. If in doubt, speak with your instructor!

Participation: Satisfactory participation will be the result of contributing to class discussions by putting forth insightful and constructive questions, comments and observations. Overall effort, cooperation during group work, proper care of work space and tools, responsible behavior, and completion of assignments will be assessed. All of the above criteria also apply to Field Learning and site visits

11. EXAMS – PAPERS – PROJECTS

The Midterm exam accounts for 20% of the final course grade. For exam time and date consult the course addendum. **The time and date of the exam cannot be changed for any reason.**

Format: the exam is divided into two sections:

- Part I: 10 multiple-choice questions. Each correct answer is worth 3 points, for a total of 30 points.
- Part II: 10 short-answer and open-ended questions. Each correct and complete answer (concise explanations, main ideas, key words, names, etc.) will be worth 5, 7, or 10 points for a total of 70 points.

The Final Research Project accounts for 25% of the course grade.

- The Final Research Project is a research on a given epidemic, endemic, or pandemic of your choice. You are free to select any geographical area and historical period.
- Data you will have to include: causes, spread, symptoms, vaccine (if yes), mortality rate, termination or attempts of reduction.
- The word count is ~ 1500 words.

The Final exam accounts for 25% of the final course grade. For exam time and date consult the course addendum. **The time and date of the exam cannot be changed for any reason.** Format: the exam is divided into three sections:

- Part I: 10 multiple-choice questions. Each correct answer is worth 3 points, for a total of 30 points.
- Part II: 10 short-answer and open-ended questions. Each correct and complete answer (concise explanations, main ideas, key words, names, etc.) will be worth 5, 7, or 10 points for a total of 70 points.

The Final Exam is cumulative.

12. LESSONS

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| Lesson 1 |
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| Meet | In class |
| Lecture | <ul style="list-style-type: none"> • Definition of the modules and objectives of the course. • The pillars of microbiology and the difference between an endemic, an epidemic and a pandemic, with major illustrations. • Causes of disease outbreaks. • The first plague pandemic in history: the Plague of Justinian. |
| Objectives | <ul style="list-style-type: none"> • Recognize the differences between endemics, epidemics, and pandemics. • Recognize the main causes at the base of outbreaks. • Learn about the epidemiology of <i>Yersinia Pestis</i>. |
| In-Class Activity | <ul style="list-style-type: none"> • Watch and discuss: https://www.youtube.com/watch?v=oJcmxyTlrlk |
| Readings/Assignments | <ul style="list-style-type: none"> • Read: Columbia Mailman School of Public Health. 2021. <i>Epidemic, Endemic, Pandemic: What are the Differences?</i> at https://www.publichealth.columbia.edu/public-health-now/news/epidemic-endemic-pandemic-what-are-differences • Read: Green, 9-26 • Read: Wilson, 19-29 |

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| Lesson 2 | |
| Meet | In class |
| Lecture | <ul style="list-style-type: none"> • The role of epidemiology from the 20th century onwards. • Corporate behavioral pathogens: tobacco, alcohol, obesogenic foods. • Millennium Development Goals list and the envisioned reduction of diseases. |
| Objectives | <ul style="list-style-type: none"> • Understand the changing role of epidemiology. • Gain knowledge of the diseases spread by corporate industries. • Be able to examine the Millennium Development Goals list in light of the impact this has on diseases. |
| In-Class Activity | <ul style="list-style-type: none"> • Cross-analyze the findings of the homework exercise. • Define the case study of your Final Research Project. |
| Readings/Assignments | <ul style="list-style-type: none"> • Read: Millennium Development Goals list by the WHO. • Assignment: choose one goal of the Millennium Development Goals list and write a report on how its effective implementation would reduce an epidemic, endemic, or pandemic of your choice in a given country. |

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| Lesson 3 |
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| Meet | In class |
| Lecture | <ul style="list-style-type: none"> How the Black Death impacted Florence and how the city attempted to contain it. “Buchette del Vino”: wine-gates used during the Black Death and restored during Covid-19 to deliver food and wine with social distancing. |
| Objectives | <ul style="list-style-type: none"> Learn about the historical events of the Black Death in the city of Florence. Draw connections with the past in terms of regulations applied to contain the outbreaks. |
| Visit | <ul style="list-style-type: none"> Walking exploration of the Buchette del Vino in Florence (“Wine Windows”). See detailed description in the topic worksheet. Examples: Via delle Caldaie 30r, Via delle Belle Donne 2, Vivoli in Via delle Stinche, Osteria delle Brache, Via Torta. Please note, the assignment due today as per the topic worksheet will determine the final itinerary. The aim is to draw parallelisms between past and present-day approaches to the containment of outbreaks. |
| Readings/ Assignments | <ul style="list-style-type: none"> Read: Alan S. Morrison, Julius Kirshner & Anthony Molho. 1985. ‘Epidemics in Renaissance Florence’, <i>American Journal of Public Health</i>, 75(5): 528-535 Read: Wilson, 45-51 Assignment: choose one Buchetta del Vino in the city center and gather data about its history and (potential) contemporary use. This will become part of the itinerary. |

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| Lesson 4 | |
| Meet | In class |
| Lecture | <ul style="list-style-type: none"> The Black Death and its various waves. 1340s in Florence and 1630s in Milan. The Black Death(s) in Italian Literature and the links to contemporary responses to disease: from Florence to Milan, Boccaccio (<i>Decameron</i>) and Manzoni (<i>I Promessi Sposi</i>) |
| Objectives | <ul style="list-style-type: none"> Gain knowledge of the Black Death in Italy. Understand how the Black Death was represented in the past. Be able to draw parallelisms with present-day reality. |
| Visit | <ul style="list-style-type: none"> Milan |
| Readings/ Assignments | <ul style="list-style-type: none"> Read: Ciulla M. M. (2020). History repeating. The plague of 1630 in Milan and the COVID-19 Pandemia. <i>Acta Bio-Medica: Atenei Parmensis</i>, 91(2), 234–235. https://doi.org/10.23750/abm.v91i2.9553 Read: Farrell, J. 2020 <i>Writing at a Time of Plague: Boccaccio, Dante, Petrarca, Chaucer</i> at: https://www.peoplesworld.org/article/writing-at-a-time-of-plague-boccaccio-dante-petrarca-chaucer/ Read: Salah, W., Calabrese, L., Ferrari, F., Labriola, M., Milidoni, F. & Carretta, D. 2015. <i>The plague through history, biology and literature: Manzoni's The Betrothed</i>. |

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| Lesson 5 |
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| Meet | In class |
| Lecture | <ul style="list-style-type: none"> • The New World: effects of the first Europe-Americas interactions. • The spread of Smallpox and the attempts to create the first vaccine in history + the role of vaccines today • The 7 Cholera pandemics: a spread lasting more than 200 years. • WHO roadmap to ending Cholera by 2030, is it possible? |
| Objectives | <ul style="list-style-type: none"> • Learn about how the interconnection of populations caused pandemic spreads to occur, and relate this to present-day scenarios. • Learn about the spread and persistence of Cholera. • Gain knowledge about the WHO plan to end Cholera. • Gain knowledge of the creation of vaccines and their current uses. |
| In-Class Activity | <ul style="list-style-type: none"> • Watch and discuss: https://www.youtube.com/watch?v=hj95IZMIZWw |
| Readings/ Assignments | <ul style="list-style-type: none"> • Read: Wilson, 30-32 • Read: Wilson, 57-58 • Read: <i>Smallpox</i> at: http://www.docsimmunize.org/immunize/cdcmanual/original/smallpox.pdf • Read: https://www.who.int/news-room/fact-sheets/detail/cholera |

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| Lesson 6 | |
| Meet | In class |
| Lecture | <ul style="list-style-type: none"> • The “Spanish Flu” Pandemic at the end of WWI: reasons, impacts, aftermaths. • <i>Influenza</i>: deadlier than any war in history. • Midterm Exam Study Guide. |
| Objectives | <ul style="list-style-type: none"> • Gain knowledge of the historical bearings of Influenza while understanding its operational model from a medical perspective. |
| In-Class Activity | <ul style="list-style-type: none"> • Divide yourselves in groups of max 4 students and play the collaborative game “Pandemic” online at: https://boardgamearena.com/gamepanel?game=pandemic • Consequently, compile a list of medical and epidemiological circumstances that arose during the game, and relate them to real life scenarios. |
| Readings/ Assignments | <ul style="list-style-type: none"> • Read: Wilson, 92-97 • Read: College Entrance Examination Board. <i>The Spanish Flu and its Legacy</i>. pp. 3-10 |

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| Lesson 7 | |
| Meet | In class |
| Lecture | Midterm Exam |

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| Lesson 8 | |
| | Academic Break |

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| Lesson 9 | |
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| Meet | In class |
| Lecture | <ul style="list-style-type: none"> Quantifying disease in populations: methods, approaches, errors. Focus on: Incidence Studies & Prevalence Studies. Endemics, case studies: Malaria in Africa, Varicella in Europe (U.K. specifically). |
| Objectives | <ul style="list-style-type: none"> Acquire an elementary knowledge of how observations are translated into measurements that will help in understanding scientific phenomena. |
| In-Class Activity | <ul style="list-style-type: none"> Calculate various Incidence and Prevalence rates of endemics in class. |
| Readings/ Assignments | <ul style="list-style-type: none"> Read: Ramsden, I. 2005. <i>A Short Introduction to Epidemiology</i>. pp. 21-38 Read: https://thebmj-frontend.bmj.com/about-bmj/resources-readers/publications/epidemiology-uninitiated/2-quantifying-disease-populations |

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| Lesson 10 | |
| Meet | In class |
| Lecture | <ul style="list-style-type: none"> Major epidemics of the contemporary era: Ebola and Polio. The “End Polio Now” project. The new Ebola outbreak of 2022. |
| Objectives | <ul style="list-style-type: none"> Recognize the main impacts of Ebola and Polio across time and in various geographical areas. Gain knowledge of the efforts to terminate the diseases. |
| In-Class Activity | <ul style="list-style-type: none"> Explore the chronological map of the eradication of Polio at: https://www.endpolio.org/what-is-polio |
| Readings/ Assignments | <ul style="list-style-type: none"> Read: https://www.cfr.org/timeline/major-epidemics-modern-era Read: https://news.un.org/en/story/2022/04/1116762 Assignment: Submit the outline of your Final Research Project. |

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| Lesson 11 | |
| Meet | In class |
| Lecture | <ul style="list-style-type: none"> How past diseases gave new spaces to cities. Milan and the Black Death of 1620s. London and the Cholera outbreak of 1850s. |
| Objectives | <ul style="list-style-type: none"> Understand how diseases can spawn the reconfigurations of cities. Recognize the present-day effects of past pandemics on cities. |
| In-Class Activity | <ul style="list-style-type: none"> Make predictions concerning the possible urban changes resulting from the Covid-19 pandemic. |
| Readings/ Assignments | <ul style="list-style-type: none"> Read: How Past Epidemics Gave New Public Spaces to Cities at https://www.platformspace.net/home/how-past-epidemics-gave-new-public-spaces-to-cities Assignment: choose a city and a disease that occurred in it and elucidate how it affected its urban conformation. |

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| Lesson 12 |
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| Meet | In class |
| Lecture | <ul style="list-style-type: none"> • HIV/AIDS: historical impact, social discrimination, and current status. • Mobilization of a global response. |
| Objectives | <ul style="list-style-type: none"> • Understand the role HIV/AIDS had in history from social and medical perspectives. |
| Readings/ Assignments | <ul style="list-style-type: none"> • Read: Wilson, 142-145 • Read: Greene, W. C. 2007. 'A history of AIDS: Looking back to see ahead', <i>European Journal of Immunology</i>. 37: 94-102 • Read: Mann, J. & Tarantola, D. 1998. 'Responding to HIV/AIDS: A Historical Perspective', <i>Health and Human Rights</i>. 2(4): 5-8 |

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| Lesson 13 | |
| Meet | In class |
| Lecture | <ul style="list-style-type: none"> • Covid-19: origin, numbers, spread. • How has the pandemic affected our reality completely? • What does the future behold? Which predictions can be made? |
| Objectives | <ul style="list-style-type: none"> • Understand the main data related to Covid-19. • Gain knowledge about possible future scenarios according to epidemiology. |
| In-Class Activities / Visit | <ul style="list-style-type: none"> • Create a poll in class about the direct experience of students during Covid-19 along the parameters of: having had the virus, symptoms, quarantine, preoccupation levels, and data of direct affiliations. • Visit an association that helped during the Covid-19 pandemic. |
| Readings/ Assignments | <ul style="list-style-type: none"> • Read: Wilson, 1-13 • Read: Salahshoori, I. et alii. 2021. 'Overview of COVID-19 Disease: Virology, Epidemiology, Prevention Diagnosis, Treatment, and Vaccines', <i>Biologics</i>. 1, 2-40 (read pp. 2-25) • Assignment: gather data concerning direct experience with Covid-19 for in-class exercise. |

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| Lesson 14 | |
| Meet | In class |
| Lecture | <ul style="list-style-type: none"> • Disease prevention and the impact of physician migration on mortality in low and middle-income countries. • Presentation of Final Research Projects. • Final Exam Study Guide. |
| Objectives | <ul style="list-style-type: none"> • Be able to present data in a scientific yet understandable form. • Examine the impact of physician migration and how it is possible to engage in disease prevention. |
| In-Class Activity | <ul style="list-style-type: none"> • Presentation of Final Projects with active Q&A. |
| Readings/ Assignments | <ul style="list-style-type: none"> • Submit your Final Research Project (Research on an endemic, epidemic, or pandemic of your choice). • Create presentation slides on your research and present this in class. |

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| Lesson 15 |
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| Meet | In class |
| Lecture | Final Exam |