

## COURSE DETAILS

### " HYGIENE AND COMMUNITY MEDICINE"

SSD 06/MEDS-24/B

DEGREE PROGRAMME: MEDICINE AND SURGERY

ACADEMIC YEAR 2026-2027

## GENERAL INFORMATION – TEACHER REFERENCES

COORDINATOR: **RAFFAELE ZARRILLI**; DEPARTMENT OF PUBLIC HEALTH

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| Professor<br>surname and<br>name | Position       | Scientific<br>Fields: | Phone | Office Hours<br>*    | E-mail                                                                       |
|----------------------------------|----------------|-----------------------|-------|----------------------|------------------------------------------------------------------------------|
| Zarrilli Raffaele                | Full Professor | Hygiene               | 3026  | Tue: 13:00-<br>15:00 | <a href="mailto:rafzarri@unina.it">rafzarri@unina.it</a>                     |
| Palladino<br>Raffaele            | Full Professor | Hygiene               | 3354  | Wed. 11:00-<br>13:00 | <a href="mailto:raffaele.palladino@unina.it">raffaele.palladino@unina.it</a> |

## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE (IF APPLICABLE): HYGIENE AND COMMUNITY MEDICINE

MODULE (IF APPLICABLE):

SSD OF THE MODULE (IF APPLICABLE):

TEACHING LANGUAGE: ENGLISH

CHANNEL (IF APPLICABLE):

YEAR OF THE DEGREE PROGRAMME (I, II, III): III

SEMESTER (I, II, ANNUAL): I

CFU: 8

### REQUIRED PRELIMINARY COURSES (IF MENTIONED IN THE COURSE STRUCTURE "REGOLAMENTO")

None

### PREREQUISITES (IF APPLICABLE)

For an in-depth understanding of the topics discussed in the Hygiene and Community Medicine course, students should have acquired knowledge of biostatistics, physics, biology, and microbiology.

## LEARNING GOALS

The integrated course aims to give students the ability to interpret and assess population health in a global perspective, through the identification and the evaluation of the environmental and professional risks, and the determinants of communicable and non-communicable diseases. The course also aims to improve the understanding of collective and individual prevention strategies, including the legislative instruments and the healthcare organization and management. The integrated course aims to provide knowledge and skills in: General and applied epidemiology; Healthcare management, organization, strategic planning, and health economics principles; Prevention strategies for individual and collective; Environmental hygiene, Hygiene and safety of living and working environments; Epidemiology and prevention of infectious diseases and chronic degenerative diseases; Food hygiene and nutrition; Community Medicine, Clinical governance; Risk Management. The integrated course also aims to provide knowledge and skills in interpreting routinely collected healthcare data for health promotion and healthcare planning.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

### Knowledge and understanding

The student should demonstrate understanding of health prevention and health promotion methods and tools for individuals and populations, taking into account environmental protection, gender differences, and health inequalities. The Student should understand the principles of health organization, planning and management and their applications for health protection. Such tools will enable students to learn about the determinants of public health and their implications for health promotion.

The student should be able to apply in practice: 1) the epidemiological tools for health planning in relation to health demand; 2) the methodologies for assessing and preventing environmental and food pollution; 3) the tools for the prevention of infectious and chronic diseases. The student must be able to solve problems of public health and preventive medicine even in state of emergencies.

### Applying knowledge and understanding

- **Autonomy of judgment:** The Student should be able to independently evaluate the epidemiological data, the pollution indicators of the living and working environments, to manage the prevention interventions for infectious and chronic diseases, to plan integrated pathways within the healthcare settings and within the regulatory boundaries of the health system, to solve complex public health problems, including emergencies.
- **Communication skills:** The student should be able to communicate to the individual and the community regarding environmental and occupational risks in a clear and evidence-based manner. They should be able to read a scientific work of epidemiology and prevention, knowing how to summarize it and using the scientific language correctly. During the exam, they should master the scientific language in the field of individual and collective risk management and should be able to apply the appropriate approaches for the management of resources in health.
- **Learning skills:** by the end of the course the student should be equipped with the basic tools necessary to enable him to address the main issues of public health and preventive medicine. The Student should demonstrate learning ability on scientific data and theoretical-practical experiences. The student's learning is also periodically evaluated with IT tools as part of training courses and internships.

## **COURSE CONTENT/SYLLABUS**

### **EPIDEMIOLOGICAL METHODOLOGY.**

Fundamental elements characterizing the knowledge of the population health in view of prevention and health promotion: regulatory frameworks, epidemiological analyses, levels of planning, management mechanisms, economic analyses.

Epidemiological methods useful to critically appraise observational, analytical, and experimental studies.

Epidemiological measures of frequency and association.

Epidemiological data and their current use in public health.

Design and interpretation of the different types of epidemiological studies with particular emphasis on the definition of the sources and control of random and systematic errors.

### **PREVENTIVE MEDICINE.**

Individual and collective prevention strategies: lifestyles, screening, rehabilitation.

### **HEALTHCARE MANAGEMENT, ORGANIZATION, STRATEGIC PLANNING AND BUSINESS ECONOMICS PRINCIPLES.**

Regulatory framework on the establishment and reform of the NHS.

Management control and assessment of health managers.

Economic approach to the study of health phenomena. Health and social Planning and assessment.

Clinical governance and risk management.

Quality assessment in NHS: accreditation and certification. Fiscal federalism and standard costs.

### **ENVIRONMENTAL AND WORKPLACE HYGIENE.**

Atmospheric air. Indoor Environment. Drinking water. Ground.

Wastewater. Solid Waste: Legislative Decree 152/06. Environmental Impact Assessment.

Noise. Lighting. Ionizing radiation.

Occupational health (workplace; prevention Risk Assessment; Environmental and biological monitoring).

Legislative Decree no. 81/08: risks in healthcare settings.

### **FOOD HYGIENE AND NUTRITION.**

Catering. The HACCP system. Food storage. Risks associated with the food consumption.

### **EPIDEMIOLOGY AND PROPHYLAXIS OF INFECTIOUS DISEASES.**

Epidemiology and prevention of airborne, bloodborne, fecal-oral and direct contact infectious diseases.

Epidemiology and prophylaxis of anthroponozoonoses, vector-borne, and sexually transmitted diseases.

Epidemiology and prevention of hospital acquired infections. Epidemic and pandemics management.

### **COMMUNITY MEDICINE.**

Social-health integration. Health as a complex process. Health as individual right within a protection group.

Levels of integration between operators, administrators and patients.

Secondary and primary care integration in the area. The healthcare networks.

### **EPIDEMIOLOGY AND PREVENTION OF CHRONIC DEGENERATIVE DISEASES.**

Lifestyle prevention. Screenings. Planning and assessment of prevention of chronic degenerative diseases.

| Week                                               | Day, Hour                | Professor | Formal Lectures<br>(ILA -Interactive Learning Activities)                                                                                                                                       |
|----------------------------------------------------|--------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1<br>October<br>5th – 9th,<br>2026                 | Mon, 05th<br>14:00-15:00 | Palladino | Introduction to the course. Epidemiology as a tool to support Public Health planning and resource allocation.                                                                                   |
|                                                    | Mon, 05th<br>15:00-16:00 | Palladino | Designing and interpreting data from observational data. Public Health initiatives targeting high-risk groups.                                                                                  |
|                                                    | Thu, 08th<br>14:00-15:00 | Zarrilli  | Soil pollution. The waste removal and disposal. The sanitary waste.                                                                                                                             |
|                                                    | Thu, 08th<br>15:00-16:00 | Zarrilli  | Water Pollution, wastewater and sewage disposal.                                                                                                                                                |
| 2<br>October<br>12th – 16th,<br>2026               | Mon, 12th<br>14:00-15:00 | Palladino | Routinely collected healthcare data: Hospital Discharge Records, Death Certificates, and Cancer Registry. Big data in healthcare (ILA)                                                          |
|                                                    | Mon, 12th<br>15:00-16:00 | Palladino | Use of routinely collected health data for the evaluation of health, hospital and territorial planning. (ILA)                                                                                   |
|                                                    | Thu, 15th<br>14:00-15:00 | Palladino | European Health Systems organization.                                                                                                                                                           |
|                                                    | Thu, 15th<br>15:00-16:00 | Palladino | Health legislation for National Health Service organization.                                                                                                                                    |
| 3<br>October<br>19th – 23rd,<br>2026               | Mon, 19th<br>14:00-15:00 | Zarrilli  | Authorization and accreditation of health facilities                                                                                                                                            |
|                                                    | Mon, 19th<br>15:00-16:00 | Zarrilli  | Authorization and Accreditation of health structures. Use of health indicators for the evaluation of the hospital and territorial offer. Evaluation Methods of health management. (ILA)         |
|                                                    | Thu, 22nd<br>14:00-15:00 | Palladino | Italian Public Health Organizations: ASL, the District, PO, AO: roles and assistance functions. The Hospital Care.                                                                              |
|                                                    | Thu, 22nd<br>15:00-16:00 | Palladino | Public Health preparedness and response to pandemics                                                                                                                                            |
| 4<br>October-<br>November,<br>26th – 30st,<br>2026 | Mon, 26th<br>14:00-15:00 | Palladino | Clinical governance, risk management e health technology assessment.                                                                                                                            |
|                                                    | Mon, 26th<br>15:00-16:00 | Palladino | Clinical risk management in health facilities. Practical examples of HTA application. (ILA)                                                                                                     |
|                                                    | Thu, 29th<br>14:00-15:00 | Zarrilli  | Water quality, human consumption and health effects. Hygiene of sanitary water systems.                                                                                                         |
|                                                    | Thu, 29th<br>15:00-16:00 | Zarrilli  | Outdoor and indoor air quality and health risks.                                                                                                                                                |
| 5<br>November<br>2nd – 6th,<br>2026                | Mon, 02nd<br>14:00-15:00 | Zarrilli  | Epidemiology and prevention of risks in the living and working environments. Legislative Decree no. 81/08. Assessment and risk management in health facilities.                                 |
|                                                    | Mon, 02nd<br>15:00-16:00 | Zarrilli  | Environmental Impact Assessment, Environmental Impact Authorization, Health Impact Assessment and Health Damage Assessment. Planning and execution of environmental epidemiology studies (ILA). |
|                                                    | Thu, 05th                | Zarrilli  | Measurement methods of air and water quality (ILA) - Tracking methods                                                                                                                           |

|                                                   |                          |           |                                                                                                                                                                                                               |
|---------------------------------------------------|--------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | 14:00-15:00              |           | of waste management facilities and wastewater. (ILA)                                                                                                                                                          |
|                                                   | Thu, 05th<br>15:00-16:00 | Zarrilli  | Methods of assessment and risk prevention in healthcare settings. The management of physical, chemical and biological injuries. (ILA)                                                                         |
| 6<br>November<br>9th – 13th,<br>2026              | Mon, 9th<br>14:00-15:00  | Zarrilli  | Food: chemical and biological hazards.                                                                                                                                                                        |
|                                                   | Mon, 9th<br>15:00-16:00  | Zarrilli  | The European Union regulation on food products. The HACCP system.                                                                                                                                             |
|                                                   | Thu, 12th<br>14:00-15:00 | Zarrilli  | Food: storage and catering.                                                                                                                                                                                   |
|                                                   | Thu, 12th<br>15:00-16:00 | Zarrilli  | Practical assessment of physical, chemical and biological risks associated with food and catering. (ILA)                                                                                                      |
| 7<br>November<br>16th – 20th,<br>2026             | Mon, 16th<br>14:00-15:00 | Zarrilli  | Methods and procedures of sanitization and disinfection.                                                                                                                                                      |
|                                                   | Mon, 16th<br>15:00-16:00 | Zarrilli  | Procedures and Guidelines of disinfection and sterilization: the check list. Environmental microbiological monitoring to assess the efficacy of sanitation, disinfection, and sterilization procedures. (ILA) |
|                                                   | Thu, 19th<br>14:00-15:00 | Zarrilli  | Epidemiology of infectious diseases.                                                                                                                                                                          |
|                                                   | Thu, 19th<br>15:00-16:00 | Zarrilli  | Prophylaxis of infectious diseases: notification, isolation, detection and the epidemiological investigation.                                                                                                 |
| 8<br>November,<br>23rd – 27th,<br>2026            | Mon, 23rd<br>14:00-15:00 | Zarrilli  | Active and passive immunoprophylaxis: vaccines, serums, Immunoglobulins.                                                                                                                                      |
|                                                   | Mon, 23rd<br>15:00-16:00 | Zarrilli  |                                                                                                                                                                                                               |
|                                                   | Thu, 26th<br>14:00-15:00 | Zarrilli  | Epidemiology and prevention of airborne diseases.                                                                                                                                                             |
|                                                   | Thu, 26th<br>15:00-16:00 | Zarrilli  | Epidemiology and prevention of fecal-oral transmitted diseases.                                                                                                                                               |
| 9<br>November/De<br>cember<br>30th – 5th,<br>2026 | Mon, 30th<br>14:00-15:00 | Palladino | Preventive medicine. Screening and their organization in the NHS. Departments of Public Health in Italy: organization and functions.                                                                          |
|                                                   | Mon, 30th<br>15:00-16:00 | Palladino | Planning a screening campaign: barriers and pitfalls. Cardiovascular disease screening (ILA).                                                                                                                 |
|                                                   | Thu, 03th<br>14:00-15:00 | Zarrilli  | Epidemiology and prevention of parenteral transmitted diseases.                                                                                                                                               |
|                                                   | Thu, 03th<br>15:00-16:00 | Zarrilli  | Epidemiology and prevention of complex transmission diseases.                                                                                                                                                 |
| 10<br>December<br>7th – 11th,<br>2026             | Mon, 07th<br>14:00-15:00 | Zarrilli  | Epidemiology and prevention of vertical transmission diseases.                                                                                                                                                |
|                                                   | Mon, 07th<br>15:00-16:00 | Zarrilli  | Epidemiology and prevention of vector-borne diseases.                                                                                                                                                         |
|                                                   | Thu, 10th<br>14:00-15:00 | Zarrilli  | Epidemiology and prevention of emerging infectious diseases.                                                                                                                                                  |

|                                        |                          |           |                                                                                                                                                                                            |
|----------------------------------------|--------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                        | Thu, 10th<br>15:00-16:00 | Zarrilli  | Doctor behavior in suspected cases of infectious diseases: Complaint (Notification), isolation, epidemiological investigation, disinfection, chemoprophylaxis and immunoprophylaxis. (ILA) |
| 11<br>December<br>14th – 18th,<br>2026 | Mon, 14th<br>14:00-15:00 | Palladino | Public Health Metrics to assess the global burden of a disease                                                                                                                             |
|                                        | Mon, 14th<br>15:00-16:00 | Palladino | The global burden of cardiovascular and cancer disease                                                                                                                                     |
|                                        | Thu, 17th<br>14:00-15:00 | Zarrilli  | Epidemiology and prevention of Healthcare-Associated Infections (HAIs).                                                                                                                    |
|                                        | Thu, 17th<br>15:00-16:00 | Zarrilli  | Application of epidemiological methods to the prevention and surveillance of Healthcare-Associated Infections (HAIs). (ILA)                                                                |

## READINGS/BIBLIOGRAPHY

Joann Elmore, Dorothea Wild, Heidi Nelson, David Katz. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, 5th Edition. Elsevier Saunders, 2020. eBook ISBN: 9780323681001. Paperback ISBN: 9780323642019.

Marcello Pagano, Kimberlee Gauvreau, Heather Mattie. Principles of Biostatistics 3rd edition. ISBN 9780367355807

Published June 7, 2022 by Chapman & Hall

Snashall D. ABC of Occupational & Environmental Medicine 3/e. Publisher WILEY, 2012. ISBN: 9781444338171; Price: 41,92 Euro.

Forsythe S. J., Hayes P. R. Food Hygiene, Microbiology and HACCP. AN ASPEN Publication, 2010. ISBN: 9781461359197; Price: 89,42 Euro.

Johan Giesecke. Modern Infectious Disease Epidemiology, Third Edition Paperback – 5 Apr 2017. CRC Press Taylor & Francis Group. ISBN: 9781444180021; Price: 60,31 Euro.

## TEACHING METHODS

The course includes lectures, interactive lessons, and training activities. Clerkship activities will focus on practical aspects of what is covered by lectures.

## EXAMINATION/EVALUATION CRITERIA

a) Exam type:

| Exam type          |   |
|--------------------|---|
| written and oral   | X |
| only written       |   |
| only oral          |   |
| project discussion |   |
| other              |   |

|                                                |                         |   |
|------------------------------------------------|-------------------------|---|
| In case of a written exam, questions refer to: | Multiple choice answers | X |
|                                                | Open answers            |   |
|                                                | Numerical exercises     |   |

b) Evaluation pattern:

The exam comprises a written and an oral test