UNIVERSITÀ DI PAVIA

## Anno Accademico 2020/2021

# VIROLOGIC AND MICROBIOLOGIC DIAGNOSTICS

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| **Enrollment year** | 2019/2020 |
| **Academic year** | 2020/2021 |
| **Regulations** | DM270 |
| **Academic discipline** | MED/07 (MICROBIOLOGY AND CLINICAL MICROBIOLOGY) |
| **Department** | DEPARTMENT OF MOLECULAR MEDICINE |
| **Course** | MEDICAL AND PHARMACEUTICAL TECHNOLOGIES |
| **Curriculum** | Medico: Biotecnologie mediche e ricerca biomedica |
| **Year of study** | 2° |
| **Period** | (05/10/2020 - 22/01/2021) |
| **ECTS** | 6 |
| **Lesson hours** | 48 lesson hours |
| **Language** | Italian |
| **Activity type** | WRITTEN AND ORAL TEST |
| **Teacher** | BALDANTI FAUSTO - 3 ECTS<br>MIGLIAVACCA ROBERTA - 3 ECTS |
| **Prerequisites** | |
| **Learning outcomes** | The course aims to provide the methodological tools needed to:<br>- correlate the composition, structure and physiology of microorganisms with the onset and evolution of infection diseases;<br>- understand the methodological approach in diagnosing infectious diseases;<br>- Understand the role of the various microorganisms in human pathology (infection diseases). |
| **Course contents** | Prof. R. Migliavacca<br>Will be discussed the main conventional diagnostic and executive protocols useful for the research of the most important clinically and epidemiologically important microorganisms, etiologic agents of:<br>- Skin infections |

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| | - Infections of the genitourinary urinary tract (Escherichia coli uropatogenes, Neisseria gonorrhoeae, Clamidia trachomatis, Treponema pallidum)<br>- Infections of the gastrointestinal tract (Helicobacter pylori, Enterobacteria, Clostridium difficile)<br>- Infections of the upper and lower respiratory tract (Streptococcus spp., Legionella pneumophila, Haemophilus influenzae, Mycoplasma pneumoniae, Corynebacterium diphtheriae)<br>- Sepsis (Staphylococcus aureus, E. coli)<br>- Nosocomial infections (Acinetobacter baumannii, Pseudomonas aeruginosa)<br><br>The main methods of bacterial typing will also be discussed (PFGE, MLST, etc.)<br><br>We will analyze diagnostic protocols for antibiotic resistance to beta-lactams , quinolones, macrolides and glycopeptides, and the genetic basis of bacterial resistance.<br><br>Patogenetic mechanisms, host-parasitic interactions (adhesiveness, invasiveness, biofilm production) and genetic aspects of microbial virulence will be identified as new targets for design, research and development of new antimicrobial drugs and vaccines. |
| **Teaching methods** | Fontal teaching |
| **Reccomended or required readings** | "Microbiologia medica" P. Murray, K.S. Rosenthal, M.A. Pfaller. Elsevier |
| **Assessment methods** | Written test |
| **Further information** | - |
| **Sustainable development goals - Agenda 2030** | $lbl_legenda_sviluppo_sostenibile |