Course unit English denomination	**Methodologies for Histological and Cytological Data: From Sampling to laboratory Research**
Teacher in charge (if defined)	Giovanna Albertin
Teaching Hours	5
Number of ECTS credits allocated	1
Course period	Spring 2025
Course delivery method	☒ In presence ☐ Remotely ☐ Blended
Language of instruction	English
Mandatory attendance	☒ Yes (80% minimum of presence) ☐ No
Course unit contents	Methods of collecting histological and cytological samples Fixation and preservation procedures for samples. Techniques for sample preparation for colorimetric and immunohistochemical analysis. Use of specific instruments and equipment. Methods for qualitative and quantitative analysis of histological and cytological data. How to interpret results and discussion of examples of histological and cytological analyses. Examples of clinical and research applications. Discussion of the latest innovations and trends in the field of histological analysis. Brief mention of ethical considerations in the collection and use of samples
Learning goals	The lessons aim to outline a program focused on techniques for the collection, preservation, and preparation of cells and tissues for histological and cytological staining. These techniques are integrated with qualitative and quantitative evaluation methods, with the objective is to provide students with practical and theoretical skills useful both for research and for potential application in clinical practice
Teaching methods	Lectures will be accompanied by PowerPoint slides
Course on transversal, interdisciplinary, transdisciplinary skills	☒ Yes ☐ No
Available for PhD students from other courses	☐ Yes ☒ No

Prerequisites (not mandatory)	
Examination methods (in applicable)	
Suggested readings	Scientific papers, slide lessons
Additional information	

Course unit English denomination	**Effective Communication skills**
Teacher in charge (if defined)	M. Grazia Busà
Teaching Hours	5
Number of ECTS credits allocated	1
Course period	March 2024
Course delivery method	☒ In presence ☐ Remotely ☐ Blended
Language of instruction	English
Mandatory attendance	☒ Yes ☐ No
Course unit contents	The course aim is to help students improve their oral communication. It introduces students to the analysis and practice of the elements contributing to successful communication. Emphasis will be given to exemplification of techniques for the delivery of scientific presentations to audiences of experts and non-experts. Some students will be required to give a short presentation to the class.
Learning goals	Enhancement of oral communication skills in the delivery of scientific information
Teaching methods	Lecture + students' presentations
Course on transversal, interdisciplinary, transdisciplinary skills	☒ Yes ☐ No
Available for PhD students from other courses	☐ Yes ☒ No
Prerequisites (not mandatory)	
Examination methods (in applicable)	
Suggested readings	
Additional information	

Course unit English denomination	**Scientific Communication, Open Science and the Institutional Archives**
Teacher in charge (if defined)	Valentina Bozzato, Federico Fogo, Antonia Vilia
Teaching Hours	5
Number of ECTS credits allocated	1
Course period	Winter-Spring 2025
Course delivery method	☒ In presence ☐ Remotely ☐ Blended
Language of instruction	English
Mandatory attendance	☒ Yes ☐ No
Course unit contents	Scolarly Communication, Open Science, the Institutional Archives
Learning goals	Make participants fully aware of: the cycle of scientific communication in which they are inserted as producers of research, of the multiple declinations of the so-called open science, an increasingly predominant aspect of scientific communication
Teaching methods	Presentations and discussion with the attendees about the topics
Course on transversal, interdisciplinary, transdisciplinary skills	☒ Yes ☐ No
Available for PhD students from other courses	☐ Yes ☒ No
Prerequisites (not mandatory)	N/A
Examination methods (in applicable)	N/A
Suggested readings	N/A
Additional information	1) <u>Scientific communication and open access (2 hours)</u> Academic publishing and the cycle of scientific communication Open science and Open access Copyright and Creative Commons licenses Predatory publishing University policies for open access Mandates for open access to scientific publications and research data

Publishing contracts
Transformative contracts
Academic social networks (ResearchGate, Academia.edu)

2) The University's institutional archives and doctoral theses (1 hour)
Padua Research Archive (PRA): research product deposit flow
Doctoral theses: deposit flow
Research Data Unipd: the University archive for research data

Course unit English denomination	**Biostatistics**
Teacher in charge	
Teaching Hours	
Number of ECTS credits allocated	
Course period	
Course delivery method	☐ In presence ☐ Remotely ☐ Blended
Language of instruction	
Mandatory attendance	☐ Yes ☐ No
Course unit contents	
Learning goals	
Teaching methods	
Course on transversal, interdisciplinary, transdisciplinary skills	☐ Yes ☐ No
Available for PhD students from other courses	☐ Yes ☐ No
Prerequisites (not mandatory)	
Examination methods (if applicable)	
Suggested readings	
Additional information	**Course borrowed from Translational Specialistic Medicine 'G.B. Morgagni' (Medicina specialistica traslazionale G.B. Morgagni)**

Course unit English denomination	**Advanced laboratory medicine: clinical and experimental approaches**
Teacher in charge (if defined)	Dr. Paola Galozzi Dr. Ada Aita
Teaching Hours	10
Number of ECTS credits allocated	2
Course period	01/2025 – 03/2025
Course delivery method	☒ In presence ☐ Remotely ☐ Blended
Language of instruction	Italian
Mandatory attendance	☒ Yes (80% minimum of presence) ☐ No

Course unit contents

1. Introduction to Laboratory Medicine
- Definition and role of Laboratory Medicine in the diagnosis and monitoring of diseases.
- Overview of the main fields of application: clinical chemistry and immunometry, haematology and coagulation, microbiology, immunology, molecular pathology.
- The role of Laboratory Medicine in research projects

2. Interpretation of Laboratory Results
- Factors influencing laboratory results: pre-analytical interferences, analytical and post-analytical variables.
- Criteria for interpretation of laboratory tests: reference values, decision levels, critical difference
- Correlation between laboratory results and clinical conditions: how to interpret results in the context of the patient's clinical picture.

3. Biological matrices, instruments and laboratory technology
- Biological matrices: not only blood
- Microscopes: use and applications in morphological and cytological investigations.
- Instruments for biochemical analysis: autoanalysers, spectrophotometers, gas chromatography and mass spectrometry.
- Molecular technologies: PCR (including ddPCR) and NGS sequencing
- Immunodiagnostics: antibody-based methods (ELISA, chemiluminescence) and flow cytometry
- Omics techniques: proteomics, metabolomics, genomics, and their use in diagnosis and research.

The facilities of hospital laboratory medicine and the DIMED Department of Medicine

4. Small groups activities

	- Clinical significance and interpretation of biomarkers in the clinical context of different curricula **5. Final Research Project** - Students will be asked to develop an original research project, integrating the skills acquired during the course, identifying basic and advanced biological matrices, tests and laboratory techniques to a clinical or experimental problem.
Learning goals	To provide practical skills in the use of laboratory instruments for clinical and experimental analysis. Develop critical skills for the interpretation of laboratory data in the clinical context. Promote innovation and design of experimental studies, with a focus on advanced methods and techniques.
Teaching methods	lectures, group work, case studies
Course on transversal, interdisciplinary, transdisciplinary skills	☒ Yes ☐ No
Available for PhD students from other courses	☒ Yes ☐ No
Prerequisites (not mandatory)	none
Examination methods (in applicable)	Evaluation of the original research project
Suggested readings	Course slides and other materials provided by the teachers
Additional information	**Course borrowed from Clinical and Experimental Sciences (Scienze Cliniche e Sperimentali)**