COURSE DETAILS
"INTEGRATED COURSE OF FORENSIC AND OCCUPATIONAL MEDICINE"
SSD MEDS-25/A, MEDS-25/B

DEGREE PROGRAMME: MEDICINE AND SURGERY (P11)
COORDINATOR: PROF. IVO IAVICOLI
ACADEMIC YEAR 2024-2025

GENERAL INFORMATION – TEACHER REFERENCES

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Faculty	Position	Scientific Fields	Phone	Reception	E-mail
Ivo Iavicoli	Full Professor	Occupational Medicine	2430	By appointment; bldg 13, floor 3	ivo.iavicoli@unina.it
Luca Fontana	Associate Professor	Occupational Medicine	2049	Monday 8,30-10,30; bldg 13, floor 3	luca.fontana@unina.it
Veruscka Leso	RTD-B	Occupational Medicine	4763	By appointment; bldg 13, floor 3	veruscka.leso@unina.it
Massimo Niola	Full Professor	Forensic Medicine	3008	By e-mail appointment, bldg. 20, floor 1	masniola@unina.it
Mariano Paternoster	Associate Professor	Forensic Medicine	3461	By e-mail appointment, bldg. 20, floor 1	mariano.paternoster@unina.it
Maria Pieri	Associate Professor	Forensic Medicine	3474	By e-mail appointment, bldg. 20, floor -1	maria.pieri@unina.it
Emanuele Capasso	RTD-B	Forensic Medicine	3357	By e-mail appointment, bldg. 20, floor 1	emanuele.capasso@unina.it

GENERAL INFORMATION about the course

TEACHING LANGUAGE: ENGLISH

CHANNEL: N/A

YEAR OF THE DEGREE PROGRAMME: V

SEMESTER: II

CFU: 6

REQUIRED PRELIMINARY COURSES

None

PREREQUISITES

For a proper understanding of the topics discussed in the Integrated Course, the Student should be familiar with the anatomy and physiology of the different organs and systems. This is preparatory to understand the basis for the assessment and evaluation of injuries and impairments of criminal or civil interest and the impact that different occupational risk factors may have on the organism. Students should have acquired knowledge on the principles of toxico-kinetics and toxico-dynamics, such as the absorption/distribution/metabolism/excretion pathway, in order to achieve a suitable comprehension of the methodological and technical foundations dealing with forensic and occupational toxicology investigations, and a deep insight into the cellular and molecular mechanisms underlying the main occupational diseases and the homeostatic responses activated in response to disease states.

LEARNING GOALS

Through the theoretical and practical notions provided from the course, the Student should develop critical thinking skills and should be capable to solve forensic and occupational medicine problems. At the end of the course, the Student should fluently discuss all the learned notions, using the most appropriate terminology and should also be capable to communicate, with a simple, but comprehensive and accurate language, the main information about ethical-deontological, forensic and occupational medicine issues. The course aims to learn operational skills necessary to concretely apply forensic and occupational medicine knowledge to judicial and clinical cases and to promote the ability to fully use the methodological tools presented during the training activity.

EXPECTED LEARNING OUTCOMES

The Student should acquire knowledge concerning the basic principles of the forensic toxicological analysis; the correct interpretation of toxicological data acquired on biological samples considering also the influencing role exerted by the age, general physiological and pathological states; the appraisal and assessment in forensic medicine of living being and corpse; the establishment of time and cause of injury or death, the circumstances surrounding death in order to interpret trauma, and to determine if death resulted from an intentional act or natural disease, how an injury occurred, and if the facts established through scientific investigation are consistent with the story provided by the victim or other party.

The Student should acquire knowledge concerning the occupational medicine history; the core competencies, skills and professional activities of the occupational physicians and other figures and actors of the prevention system; the basic principles of prevention; the impact of different occupational risk factors on workers' health outcomes; the diagnoses of common work related diseases and conditions; the interface of occupational medicine practice and health systems.

Knowledge and understanding

The Student should acquire knowledge on the main forensic and occupational medicine issues that may arise in the medical profession, and acquire skills on how to discuss and communicate these issues. The course aims to provide the Student with the knowledge and basic methodological tools necessary to analyze forensic and occupational medicine issues.

Applying knowledge and understanding

The Student should be able to independently evaluate aspects relating to the specific problems of forensic and occupational medicine and propose appropriate solutions. The Student should acquire communicative skills finalized to explain to non-expert people the general principles and fundamental problems of forensic and occupational medicine. The Student should be able to propose solving strategies of problems of forensic and occupational medicine nature correctly using the technical terminology. The Student should be encouraged to familiarize with the terminology of the forensic and occupational medicine. The Student should be able to critically and independently update and/or expand his/her knowledge from scientific texts and articles specific to the forensic and occupational medicine. The Student should be able to gradually acquire the ability to attend specialistic seminars, conferences, master's degrees in the field of forensic and occupational medicine.

COURSE CONTENT/SYLLABUS

Occupational Medicine

- *INTRODUCTION TO THE OCCUPATIONAL MEDICINE. General principles and history of Occupational Medicine. Evolution of legislative framework on the protection of health and safety in the workplaces. The figures of the prevention system: the employer, the prevention and protection service in workplaces, the workers' safety representative, the occupational physician, and the workers. The risk assessment and management process.*
- *OCCUPATIONAL RISK FACTORS and RELATED OCCUPATIONAL DISEASES: PHYSICAL RISK FACTORS. Noise. Mechanical vibrations. Manual handling of heavy loads. Video Display Units. Ionizing radiations.*
- *OCCUPATIONAL RISK FACTORS and RELATED OCCUPATIONAL DISEASES: CHEMICAL RISK FACTORS. Metals. Solvents. Others.*
- *OCCUPATIONAL RISK FACTORS and RELATED OCCUPATIONAL DISEASES: BIOLOGICAL RISK FACTORS. Viruses. Bacteria. Protozoa. Fungi.*
- *PSYCHOSOCIAL RISK FACTORS and MENTAL HEALTH in the WORKPLACES.*

Forensic Medicine

- *LEGAL MEDICINE. The legal aspects of practice of medicine. The legal responsibilities of the physician with reference to those arising from physician-patient relationship (medical negligence, consent, rights and duties of doctors, serious professional misconduct). The evaluation of autonomous decision making by impaired persons. Identification and forensic osteology.*
- *FORENSIC PATHOLOGY. Thanatology (Study of Death). Postmortem Changes. Autopsy. Violent Asphyxial Deaths.*
- *FORENSIC TRAUMATOLOGY. Injuries and their Medicolegal Considerations. Forensic Ballistics. Thermal Injuries. Electrical and Lightning Injuries.*
- *CLINICAL FORENSIC MEDICINE and FORENSIC PSYCHIATRY. The medical examination and assessment of the living.*
- *FORENSIC TOXICOLOGY. Poison definition and strategies for a correct identification and interpretation of data. Chain of custody and quali/quantitative analysis. Gender differences in the human response to xenobiotics. About marijuana legalization.*

TEACHING ACTIVITIES			
Week	**Day / Hour**	**Lessons/Seminars**	**Teacher**
1° 3-7 March 2025	Friday 7 March 13.00-14.00	General principles and history of Occupational Medicine	Iavicoli
	Friday 7 March 14.00-15.00	Evolution of the legislative framework on the protection of health and safety in the workplaces	Iavicoli
	Friday 7 March 15.00-16.00	Introduction to forensic toxicology: poison definition and criteria for poisoning diagnoses	Pieri
	Friday 7 March 16.00-17.00	Chain of custody. Characteristics of biological matrices and time-window	Pieri
2° 10-14 March 2025	Friday 14 March 13.00-14.00	The figures of the prevention system: duties and responsibilities	Iavicoli
	Friday 14 March 14.00-15.00	The risk assessment and management process	Iavicoli
	Friday 14 March 15.00-16.00	Acquisition of the toxicological data	Pieri
	Friday 14 March 16.00-17.00	Interpretation of positive and negative toxicological data in biological samples from deceased subjects	Pieri
3° 17-21 March	Friday 21 March	Chemical risk factors and related occupational diseases	Leso

2025	13.00-14.00		
	Friday 21 March 14.00-15.00	Chemical risk factors and related occupational diseases	Leso
	Friday 21 March 15.00-16.00	Informed Consent	Paternoster
	Friday 21 March 16.00-17.00	Malpractice and Liability Defensive Medicine	Paternoster
4° 24-28 March 2025	Friday 28 March 13.00-14.00	Chemical risk factors and related occupational diseases	Leso
	Friday 28 March 14.00-15.00	Chemical risk factors and related occupational diseases	Leso
	Friday 28 March 15.00-16.00	The role of gender in the biological response to xenobiotics	Niola
	Friday 28 March 16.00-17.00	Marijuana legalization	Niola
5° 31 March-4 April 2025	Friday 4 April 13.00-14.00	Biological risk factors and related occupational diseases	Leso
	Friday 4 April 14.00-15.00	Biological risk factors and related occupational diseases	Leso
	Friday 4 April 15.00-16.00	Forensic Psychiatry	Paternoster
	Friday 4 April 16.00-17.00	Advance Directives for Medical Decisions	Paternoster
6° 7-11 April 2025	Friday 11 April 13.00-14.00	Psychosocial risk factors and mental health in the workplaces	Leso
	Friday 11 April 14.00-15.00	Psychosocial risk factors and mental health in the workplaces	Leso
	Friday 11 April 15.00-16.00	The External Postmortem Examination	Paternoster
	Friday 11 April 16.00-17.00	Establishing Identity	Paternoster
10° 5-9 May 2025	Friday 09 May 13.00-14.00	Physical risk factors and related occupational diseases	Fontana
	Friday 09 May 14.00-15.00	Physical risk factors and related occupational diseases	Fontana
	Friday 09 May 15.00-16.00	Gunshot and Blast Wounds	Capasso
	Friday 09	Thermal Injury; Electricity, Lightning, and Gases	Capasso

	May 16.00-17.00		
11° 12-16 May 2025	Friday 16 May 13.00-14.00	Physical risk factors and related occupational diseases	Fontana
	Friday 16 May 14.00-15.00	Physical risk factors and related occupational diseases	Fontana
	Friday 16 May 15.00-16.00	Thanatology	Capasso
	Friday 16 May 16.00-17.00	Autopsy	Capasso
12° 19-23 May 2025	Friday 23 May 13.00-14.00	Blunt Force Trauma	Capasso
	Friday 23 May 14.00-15.00	Pointed, Sharp, and Semi-sharp Force Trauma	Capasso
	Friday 23 May 15.00-16.00	Forensic Osteology	Niola
	Friday 23 May 16.00-17.00	Forensic Osteology	Niola
13° 26-30 May 2025	Friday 30 May 13.00-14.00	Asphyxia	Capasso
	Friday 30 May 14.00-15.00	Water-Related Deaths	Capasso
	Friday 30 May 15.00-16.00	Disaster Medicine	Paternoster
	Friday 30 May 16.00-17.00	Mass Casualty Incidents	Paternoster

READINGS/BIBLIOGRAPHY

Occupational Medicine:

J. Ladou, R. Harrison. Current Diagnosis and Treatment: Occupational and Environmental Medicine. McGraw-Hill Medical. 6th Ed. 2021.

Forensic Medicine:

J A.C. Moffat, M. D. Osselton, B. Widdop (Editors). Clarke's analysis of drugs and poisons. Pharmaceutical Press, 2011. Reinhard B. Dettmeyer Marcel A. Verhoff Harald F. Schütz. Forensic Medicine. Fundamentals and Perspectives. Springer, 2014.

TEACHING METHODS

The course will be based on frontal teaching (lectures with the support of power point presentations) providing 5 CFU and clinical clerkships providing another 1 CFU.

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	

(*) multiple options are possible

b) Evaluation pattern:

A written test with multiple choice questions on Occupational Medicine listed in the program, followed by an oral examination on all the topics of the Integrated Course. A score higher than a threshold value in the written test of Occupational Medicine is necessary to be admitted to oral examination