



FORENSIC METHODS

Enrollment year	2020/2021
Academic year	2021/2022
Regulations	DM270
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	EXPERIMENTAL AND APPLIED BIOLOGY
Curriculum	Bioanalisi
Year of study	2°
Period	1st semester (01/10/2021 - 14/01/2022)
ECTS	6
Language	Italian
Prerequisites	A basic knowledge about separation techniques such as gas chromatography and liquid chromatography. Moreover, a good knowledge on human metabolism is important
Learning outcomes	requirements of acquiring chemical-toxicological results that have administrative and legal medical value. This regards the investigations concerning the volatile and non-volatile organic poisons to be searched / quantitatively determined in biological matrices pursuing the objectives of the absolute specificity of the laboratory data, as well as the correct measurement of the concentration of the drug / poison / drug in liquids and tissues subjected to control. A special attention will also be given to illustrating the legislative references currently in force in the specific areas, with a view to arriving at the correct interpretation of the results of the analyzes carried out in order to produce adequate responses to the questions / requests posed, first of all, by the Judiciary but also by other Bodies / Subjects (eg Ser.D, Local Medical Commissions for driving licenses, competent doctors), often specifically addressed to the documentation of drug use
Course contents	The course in The study program is divided into: a) lessons related to the forensic-toxicological discipline, illustrating the application fields and proposing the indispensable bases for the realization of laboratory investigations capable of giving rise to highly

reliable results in terms of selectivity, sensitivity, accuracy and precision. A description will therefore be given of the main methods of extraction / purification, of the most effective chromatographic separation techniques (gas chromatography, high performance liquid chromatography), as well as the methods of acquiring results in terms of absolute specificity through the use of mass detection;

b) lectures with theoretical and practical content aimed at illustrating in the laboratory field what has been described under a);

c) Legislation on the subject of narcotic substances (areas: criminal law, Ser.D, workers assigned to jobs at risk, issue / renewal of driving licenses) and ethyl alcohol with particular reference to driving vehicles in conditions of ethyl alcohol intoxication.

Teaching methods

The course is organized in lectures not only theoretical but also accompanied by subsequent laboratory activities.

Reccomended or required readings

Elisabetta Bertol - TOXICOLOGICAL ANALYTICS - Technical, interpretative, juridical and deontological aspects. I Edition, 2011. Esculapio Publishing Company. Available for purchase online at € 23.00

Assessment methods

Oral or written verification method, dependently on the number of students. The oral will start with a discussion on an argument chosen by the student; then several questions on other issues will follow. The written exam will be performed through a multiple choice test.

The activity is split

502282 - FORENSIC METHODS - 1

502283 - FORENSIC METHODS -2



UNIVERSITÀ DI PAVIA

Anno Accademico 2021/2022

FORENSIC METHODS - 1

Enrollment year	2020/2021
Academic year	2021/2022
Regulations	DM270
Academic discipline	BIO/05 (ZOOLOGY)
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	EXPERIMENTAL AND APPLIED BIOLOGY
Curriculum	Bioanalisi
Year of study	2°
Period	(01/10/2021 - 14/01/2022)
ECTS	3
Lesson hours	24 lesson hours
Language	Italian
Activity type	ORAL TEST
Teacher	LAMBIASE SIMONETTA - 3 ECTS
Prerequisites	The knowledge of the anatomy and physiology of insects and their reproductive and development modalities makes it easier to approach the discipline. However, any shortcomings are compensated for with lectures and suggested readings
Learning outcomes	application of the necrophilous insect eco-ethology to the forensic field
Course contents	Module 1. Forensic Entomology. Classification of the Exapoda. Anatomy, physiology, reproduction ed ethology of the insects. Necrophilous Insects: Diptera and Coleoptera; development cycle. Investigation and collection of specimens, their treatment(preservation and rearing) and determination. The useful of the Forensic Entomology. The succession of the insect waves (the successional method). Post-mortem Interval. Practical activities. Case reports.

Teaching methods

**Reccomended or required
readings**

=Current Concepts in Forensic Entomology, Jens Amendt, M. Lee Goff, Carlo P. Campobasso, Martin Grassberger Editors, Springer Dordrecht Heidelberg London New York, 2010

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FORENSIC ENTOMOLOGY - The Utility of Arthropods in Legal Investigations Edited by Jason H. Byrd & James L. Castner. CRC press. 2010

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Forensic Entomology - An Introduction , Dorothy E. Gennard, W, 2007 John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex PO19 8SQ, England, 2007

Oral exam at the end of the course parallel to that of forensic toxicology.
The student is required to demonstrate the acquisition of the ability to
apply the fundamental notions

Further information

Oral exam at the end of the course parallel to that of forensic toxicology.
The student is required to demonstrate the acquisition of the ability to
apply the fundamental notions



UNIVERSITÀ DI PAVIA

Anno Accademico 2021/2022

FORENSIC METHODS -2

Enrollment year	2020/2021
Academic year	2021/2022
Regulations	DM270
Academic discipline	MED/43 (LEGAL MEDICINE)
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	EXPERIMENTAL AND APPLIED BIOLOGY
Curriculum	Bioanalisi
Year of study	2°
Period	(01/10/2021 - 14/01/2022)
ECTS	3
Lesson hours	24 lesson hours
Language	Italian
Activity type	ORAL TEST
Teacher	MORINI LUCA (titolare) - 3 ECTS
Prerequisites	A basic knowledge about separation techniques such as gas chromatography and liquid chromatography. Moreover, a good knowledge on human metabolism is important
Learning outcomes	requirements of acquiring chemical-toxicological results that have administrative and legal medical value. This regards the investigations concerning the volatile and non-volatile organic poisons to be searched / quantitatively determined in biological matrices pursuing the objectives of the absolute specificity of the laboratory data, as well as the correct measurement of the concentration of the drug / poison / drug in liquids and tissues subjected to control. A special attention will also be given to illustrating the legislative references currently in force in the specific areas, with a view to arriving at the correct interpretation of the results of the analyzes carried out in order to produce adequate responses to the questions / requests posed, first of all, by the Judiciary but also by other

	Bodies / Subjects (eg Ser.D, Local Medical Commissions for driving licenses, competent doctors), often specifically addressed to the documentation of drug use
Course contents	<p>The course in The study program is divided into:</p> <p>a) lessons related to the forensic-toxicological discipline, illustrating the application fields and proposing the indispensable bases for the realization of laboratory investigations capable of giving rise to highly reliable results in terms of selectivity, sensitivity, accuracy and precision. A description will therefore be given of the main methods of extraction / purification, of the most effective chromatographic separation techniques (gas chromatography, high performance liquid chromatography), as well as the methods of acquiring results in terms of absolute specificity through the use of mass detection;</p> <p>b) lectures with theoretical and practical content aimed at illustrating in the laboratory field what has been described under a);</p> <p>c) Legislation on the subject of narcotic substances (areas: criminal law, Ser.D, workers assigned to jobs at risk, issue / renewal of driving licenses) and ethyl alcohol with particular reference to driving vehicles in conditions of ethyl alcohol intoxication.</p>
Teaching methods	The course is organized in lectures not only theoretical but also accompanied by subsequent laboratory activities.
Reccomended or required readings	Elisabetta Bertol - TOXICOLOGICAL ANALYTICS - Technical, interpretative, juridical and deontological aspects. I Edition, 2011. Esculapio Publishing Company. Available for purchase online at € 23.00.
Assessment methods	Oral or written verification method, dependently on the number of students. The oral will start with a discussion on an argument chosen by the student; then several questions on other issues will follow. The written exam will be performed through a multiple choice test.
Further information	Oral or written verification method, dependently on the number of students. The oral will start with a discussion on an argument chosen by the student; then several questions on other issues will follow. The written exam will be performed through a multiple choice test.
Sustainable development goals - Agenda 2030	The goals