1 TMI. FORENSIC MEDICINE AND SCIENCE: NEWEST TECHNOLOGIES

Instructor: Assoc. Prof. Dr. Alvydas Pauliukevičius, Ph.: +370 5278948, office@tmi.lt
Language of Instructions: English
Required Prerequisites: basic knowledge of biology, human anatomy and physiology
Suggested academic cycle or year of studies: From Bachelor degree studies (3rd year)
ECTS credits: 6 Local credits: 4
Contact Hours per week: 4
Semester: Autumn or Spring
Methods of Teaching: Lectures, seminars, tests
Form of Assessment: Written exam
Objectives of the course: Students should deepen their knowledge about the objects of forensic medicine and forensic science, types and possibilities of examinations and damaging factors as well. The newest methods and technologies will be described as noninvasive methods like virtopsy.

The aim of the program is to acquaint future lawyers and policemen with forensic medicine and forensic science because any crime to person’s health, life or dignity can not be exposed without assistance of forensic medicine, medical criminalistic, traumatism and other injuries including determination of the death and time of the death. The new technologies in forensic medicine will be discussed during the course, the most recent technologies, their application and development in forensic medicine and science.

The main knowledge will be given on methods of forensic medicine investigations: dead persons’ body, body parts, alive persons’, deontological expertise; toxicological; serological; cytological; DNA investigations, medicine criminalistics, forensic anthropological, odontological, forensic histological investigations.

Reading List:
2 TMI. FORENSIC ANTHROPOLOGY

Instructor: Assoc.Prof.Dr. Rimantas Jankauskas, Ph.: +370 52789047, rimantas.jankauskas@tmi.lt
Language of Instruction: English
Required prerequisites: Human anatomy / osteology
Suggested academic cycle or year of studies: From Bachelor degree studies (3rd year)
ECTS credits: 4.5 Local credits: 3
Contact Hours per week: 4
Semester: Autumn or Spring
Methods of Teaching: Seminars, handouts, labs
Form of Assessment: Oral examination


Reading list:
The course discusses application aspects of the highly discriminatory DNA markers those could be used to resolve questions evidence source identification. Forensic DNA typing methods and technologies have been evolving rapidly. The examples of DNA uses for Forensic Identification will be discussed.

- How does forensic identification work?
- Is DNA effective in identifying persons?
- How is DNA typing done?
- What are some of the DNA technologies used in forensic investigations?
- DNA Forensics Databases.
- Ethical, Legal, and Social Concerns about DNA Data banking.
- Potential Benefits of DNA Data banking Arrestees.

The stain analysis – sources will be analyzed during the course.

What are the Current possibilities of DNA laboratory? Future perspectives and newest technologies will be described.

Casework Analysis:

- Forensic identification.
- Parentage testing.

DNA chip technology.
CODIS Laboratory.

**Reading List:**

4 TMI. NEUROBIOLOGY OF HUMAN BEHAVIOR AND CRIME SCENES

Instructor: Dr. Marija Čaplinskienė, Ph.: + 370 688 46832, m.caplinskiene@tmi.lt
Language of Instructions: English
Required Prerequisites: principles of biology, human anatomy, physiology
Suggested academic cycle or year of studies: From Bachelor degree studies (3rd year)
ECTS credits: 4.5  Local credits: 3
Contact Hours per week: 4
Semester: Autumn or Spring
Methods of Teaching: Lectures, seminars, individual work.
Form of Assessment: written paper, exam

Objectives of the course: The course discusses application aspects of the neurobiology of human behavior, the cases where person’s abnormality plays the most important causing both violence and suicide.

To analyze the factors and prevalence rates of antisocial behavior in different countries and current trends related crime scenes. The prevalent role plays a situation causing an extreme frustration, which can cause suicide or violence. The situation can determine a reaction – aggression against himself or another one. There are the cases where person’s abnormality plays the most important causing both violence and suicide. Violent and suicidal behaviors are also linked to biological and genetic predisposition. The findings in association between low levels of neurotransmitters (like serotonin) in cerebrospinal fluid (CSF) and aggressive behavior are obvious.

The following topics will be discussed during the course:

- Principles of human behavior and cognitive neurology.
- Antisocial behavior: direct analysis of candidate genes in impulsive behaviors.
- Aggression from a developmental perspective: genes, environments and interactions.
- Neurophysiology and neuropsychopharmacology.
- Suicidal behavior in youth.
- Neurobiological approaches to disorders of personality.
- Studies on the possibility of a genetic basis for violence.
- Association analysis of some molecular-genetic markers with criminal violence.
- Research prevention programs.
- Genetics and human behaviour: the ethical and legal context.

Reading List:
Instructor: Dr. Marija Čaplinskienė, Ph.: + 370 68846832, m.caplinskiene@tmi.lt
Language of Instructions: English
Required Prerequisites: principles of biology, physiology
Suggested academic cycle or year of studies: From Bachelor degree studies (3rd year)
ECTS credits: 4.5 Local credits: 3
Contact Hours per week: 4
Semester: Autumn or Spring
Methods of Teaching: Lectures, seminars, handouts
Form of Assessment: Written paper, exam

The course discusses application aspects of principals of sustainable development and public health policy on national and international level, legal aspects and control, the risk management of public health and environment interaction, regulation principles. European environment and health strategy, EC public health care policy, ethical, legal issues on health privacy. Centre for Diseases Control (CDC, Atlanta) recommendations on Diseases Prevention and Education Programs implementation system. Mass disasters, biodiversities, prevention measures, tools and action plan. Data analyses of environment risk factors, ecosystems damage and public health, planning and management of prevention and education programs. Gaps and obstacles of public health and environment monitoring system. Current trends and future perspective in public health policy and legal issues. Innovation in examining models of development for achievements in reducing poverty and inequality, in raising quality of life, in enhancing the status of women, in advancing effective health care systems, and in conserving the biodiversity of fragile environments.

Reading List: