**Name of the Course :** ADB202 - Forensic Biology Investigations and Applications

**Medium of the Course :** Turkish

**Aim of the Objective :** To introduce students to all the major sub-disciplines of forensic biology and to inform them about the current possibilities and limitations in this regard.

**Level of the Course :** Master’s Degree

**Type/ Content of the Course :** Elective/ Biological evidence that can be used for forensic purposes, general introduction of sciences such as forensic serology, entomology, botany, palynology and forensic anthropology that contribute to the evaluation of biological evidence.

**Credit of the Course :** 3

**Term / Weekly Hour :** Fall/3

**Name(s)/Surname(s) of Instructors :** Dr. Lec.Duygu YAVUZ KILIÇASLAN

**Contect Number of Insts. :** 0312 464 75 76

**Program Coordinator :** Prof. Dr. Gökhan İbrahim ÖĞÜNÇ

**Prerequisites :** None**.**

**Teaching Methods :** Theoretical expression; Case Study Method, Problem Solving; Discussion

**Resources :**

1. Forensic Biology Richard Li, 2011
2. Forensic Anthropology, Natalie R Langley, CRC Press, Taylor and Francis, 2017
3. Case Studies in Forensic Anthropology \_ Bonified Skeletons \_ Heather M, 2020
4. Manual of Forensic Science \_ An International Survey \_ Anna Barbaro \_ 2018

**WEEKLY TOPICS**

|  |  |
| --- | --- |
| **Weeks** | **Units** |
| **1** | **History of forensic biology**   1. ABO blood group and use in forensic biology 2. History of genetic analysis |
| **2** | **Biological evidence and its general characteristics-1**   1. Blood 2. Saliva |
| **3** | **Biological evidence and its general characteristics-2**   1. Semen 2. Other biological evidence |
| **4** | **Identification of biological samples**   1. Identification of blood 2. Identification of saliva 3. Identification of semen 4. Identification of other biological evidence |
| **5** | **Forensic serological analyzes 1**   1. Confirmatory tests |
| **6** | **Forensic serological analyzes 2**   1. Descriptive tests |
| **7** | ***Midterm*** |
| **8** | **Forensic molecular biological studies 1**   1. DNA analysis 2. PCR |
| **9** | **Forensic molecular biological studies 2**   1. Electrophoresis 2. Interpretation of the results |
| **10** | **Special cases in forensic biology**   1. Bombay phenotype 2. Chimerism |
| **11** | **Forensic entomology, Forensic botany and palynology**   1. History 2. General information 3. Sample cases |
| **12** | **Forensic anthropology**   1. History 2. General information 3. Sample cases |
| **13** | **Forensic pathology**   1. History 2. General information 3. Sample cases |
| **14** | **Forensic odontology**   1. History 2. General information 3. Sample cases |
| **15** | ***Final*** |

**EVALUATION SYSTEM**

|  |  |  |
| --- | --- | --- |
| **Semester Studies** | **Number** | **Contribution Margin %** |
| **Attandence** | 1 | 10 |
| **Quiz** | - | - |
| **Midterm** | 1 | 20 |
| **Practice** | - | - |
| **Project** | - | - |
| **Assignment / Presentation** | 1 | 20 |
| **Final** | 1 | 50 |
| **Total** | 4 | 100 |

**ECTS / WORKLOAD TABLE**

|  |  |  |  |
| --- | --- | --- | --- |
| **ACTIVITES** | **NUMBER** | **DURATION**  **(Hour)** | **Total workload (Hour)** |
| **Theoretical Course (+Practice)** | 14 | 3 | 42 |
| **Duration of Out-of-Class Study** | 14 | 3 | 42 |
| **Presentation/Seminar Preparation** | 1 | 20 | 20 |
| **Project** | - | - | - |
| **Assignments** | 1 | 15 | 15 |
| **Midterm**   1. **Exam** 2. **Individual Study For The Exam** | 1 | 15 | 15 |
| **Final**   1. **Exam** 2. **Individual Study For The Exam** | 1 | 20 | 20 |
| **Total workload (hours)** | 32 | 76 | 154 |
| **ECTS Credit of The Course (Total workload (hours) / 25)** |  |  | **6** |

**COURSE OUTCOMES**

|  |  |
| --- | --- |
| **No.** | **Explanation** |
| **O1** | Learns biological evidence and its general properties |
| **O2** | Makes preliminary examinations using Forensic Serology methods |
| **O3** | Learns to examine body fluids |
| **O4** | Learns what biological samples are and where to investigate |
| **O5** | Learns experimental methods of biological samples according to tissue type. |
| **O6** | Learns the examination of crime scene samples in the field of forensic botany and palynology. |
| **O7** | Learns to predict the death time of the victim with forensic entomology |
| **O8** | Learns forensic entomological insects. |
| **O9** | Learns how to examine ancient bone remains in forensic anthropology. |
| **O10** | Learns about ancient DNA studies and working conditions. |
| **O11** | Learns the investigations made in the identification of disaster victims in the field of forensic pathology and odontology. |
| **O12** | Learns the contribution of nanotechnology to illuminating criminal events. |

**PROGRAM QUALIFICATIONS**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | |
| **No.** | **Explanation** | **Contribution Level of the Course** | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** |
| **P1** | To have a understanding of forensic science ethics and protection of personal data |  |  |  |  |  | X |
| **P2** | To have a knowledge of the principles and techniques of scientific research. |  |  |  |  |  | X |
| **P3** | To reach proficiency about the effects of forensic sciences on ensuring the rule of law. |  |  |  |  |  | X |
| **P4** | To have theoretical and practical knowledge in the fields of Forensic Science Investigation. |  |  |  |  |  | X |
| **P5** | To recognise the importance of using forensic science methods in criminal investigations. |  |  |  |  |  | X |
| **P6** | To have command of crime scene investigation techniques and forensic photography principles. |  |  | X |  |  |  |
| **P7** | To understand the importance of crime scene investigation process in criminal investigations |  |  |  |  | X |  |
| **P8** | To apply the developments in the fields of positive science to the fields of criminalistics. |  |  |  |  | X |  |
| **P9** | To know and apply the hierarchy of forensic sciences, which are multidisciplinary and interdisciplinary, and their relations with each other. |  |  |  |  | X |  |
| **P10** | To have basic theoretical and practical knowledge in at least one of the fields of criminalistics. |  |  |  |  | X |  |
| **P11** | To be able to relate the results of reports prepared by forensic science laboratories to the criminal investigation by reasoning. |  |  |  | X |  |  |
| **P12** | To recognise the legal responsibilities of the expert witness and to internalise the ethical rules. |  |  |  |  |  | X |

**CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAM PROFICIENCY**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **All** | **P1** | **P2** | **P3** | **P4** | **P5** | **P6** | **P7** | **P8** | **P9** | **P10** | **P11** | **P12** |
| **O1** | **3** | **3** | **4** | **3** | **4** | **3** | **5** | **5** | **4** | **5** | **2** | **3** |
| **O2** | **4** | **5** | **4** | **5** | **5** | **4** | **4** | **4** | **5** | **5** | **4** | **5** |
| **O3** | **4** | **5** | **4** | **5** | **5** | **4** | **4** | **4** | **5** | **5** | **4** | **5** |
| **O4** | **4** | **5** | **4** | **5** | **5** | **4** | **4** | **4** | **5** | **5** | **4** | **5** |
| **O5** | **4** | **5** | **4** | **5** | **5** | **4** | **4** | **4** | **5** | **5** | **4** | **5** |
| **O6** | **5** | **5** | **5** | **4** | **5** | **5** | **5** | **5** | **5** | **4** | **4** | **5** |
| **O7** | **5** | **5** | **5** | **4** | **5** | **5** | **5** | **5** | **5** | **4** | **4** | **5** |
| **O8** | **5** | **5** | **5** | **4** | **5** | **5** | **5** | **5** | **5** | **4** | **4** | **5** |
| **O9** | **5** | **5** | **5** | **4** | **5** | **5** | **5** | **5** | **5** | **4** | **4** | **5** |
| **O10** | **5** | **5** | **5** | **4** | **5** | **5** | **5** | **5** | **5** | **4** | **4** | **5** |
| **O11** | **5** | **5** | **5** | **4** | **5** | **5** | **5** | **5** | **5** | **4** | **4** | **5** |
| **O12** | **5** | **5** | **5** | **4** | **5** | **5** | **5** | **5** | **5** | **4** | **4** | **5** |

**0- None 1- Very Low 2- Low 3- Moderate 4- High 5- Very High**

Dr. Lec.Duygu YAVUZ KILIÇASLAN

**.../…/2024**

**Prof.Dr. Gökhan İbrahim ÖĞÜNÇ**

**Director of the Institute of Forensic Sciences**