**Name of the Course :** ABE101 - Research Methods

**Medium of the Course :** Turkish

**Aim of the Objective :** The course of Research Methods provides students with; the concept of science, scientific method, scientific research processes, scientific ethics and publication ethics, quantitative and qualitative research methodologies frequently used in security sciences, research population, sampling strategies, data collection tools and techniques, data analysis methods, statistical tools and applications used in data analysis, basic features of the research report and strategies used in the preparation of the research report, academic reference citation, frequently used current reference citation tools, and the concepts of validity and reliability in scientific research are aimed to gain knowledge and skills to comprehend, analyse and apply.

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

**Type/ Content of the Course :** Compulsory / Within the framework of forensic sciences, quantitative-qualitative research methodologies and statistical tools and applications used in data analysis, academic reference citation, research report preparation and presentation are emphasised.

**Credit of the Course :** 3

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

**Name(s)/Surname(s) of Instructors :** Lec.Dr. Can SAKAR

**Contect Number of Insts. :** 0552 477 69 16

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

**Prerequisites :** None

**Teaching Methods :** Theoretical Expression; Case Study Method, Problem Solving; Discussion; Report Preparation and Presentation.

**Resources :**

1. Büyüköztürk Ş., Kılıç Çakmak, E., Aygün, Ö. E., Karadeniz, Ş., & Demirel, F. (2021). *Bilimsel Araştırma Yöntemleri*. Ankara: Pegem Akademi Yayıncılık.
2. Babbie, E. (2010). *The practice of social research* (Twelfth edition). Belmont: Wadsworth Cengage Learning.
3. Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (Fourth edition). California: SAGE Publications.
4. Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research : A guide to design and implementation*. San Francisco, CA: Jossey-Bass.
5. Caldwell, S. (2013). *Statistics unplugged* (Fourth edition). Belmont: Wadsworth Cengage Learning.
6. Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., . . . Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ, 372,* n71. https://doi.org/10.1136/bmj.n71

**WEEKLY TOPICS**

|  |  |
| --- | --- |
| **Weeks** | **Units** |
| **1** | **Basic Concepts of Scientific Research**   1. The concept of science 2. Strategies for obtaining information 3. Scientific method and steps of scientific method |
| **2** | **Scientific Research Process**   1. Determination of research problem and purpose 2. Formulating a research question/hypothesis 3. Literature review and basic features 4. Determination of appropriate research design 5. Selection of the appropriate research analysis method 6. Collection, analysis, interpretation and presentation of data |
| **3** | **Quantitative Research Methods**   1. Fundamentals of quantitative research and its use in forensic sciences 2. Descriptive quantitative research and its basic features 3. Correlational research and its main features 4. Causal-comparative research and its basic features 5. Experimental / Quasi-experimental research and its basic features 6. Meta-analyses |
| **4** | **Qualitative Research Methods-I**   1. Fundamentals of qualitative research and its use in forensic sciences 2. Descriptive qualitative research and its basic features 3. Case-study studies and their main features 4. Ethnographic (ethnography) research and its basic features |
| **5** | **Qualitative Research Methods-II**   1. Action research and its basic features 2. Phenomenological (phenomenology) research and its basic features 3. Grounded theory research and its main features 4. Narrative research and its basic features |
| **6** | **Universe and Sampling in Scientific Research**   1. Research population 2. The concept of sampling and sampling in scientific research 3. Sampling strategies in scientific research (random and non-random sampling) 4. Limitations and assumptions in scientific research |
| **7** | ***Midterm*** |
| **8** | **Data Collection Methods in Scientific Research**   1. Questionnaire, questionnaire types and questionnaire creation process 2. Experiment 3. Observation 4. Interview |
| **9** | **Analysing Quantitative and Qualitative Research**   1. Descriptive and inferential analysis methods and their basic features in quantitative research 2. Analysis methods used in qualitative research and their basic features |
| **10** | **Research Proposal Preparation**   1. Determination of the research topic and purpose 2. Originality of the research 3. Explanation of the theoretical background of the research 4. Research methodology 5. Planning the research process (work-time) 6. Identification of risks that may be encountered in the research and determination of alternative strategies 7. Materials used in the research |
| **11** | **Using and Displaying Sources in Scientific Research**   1. Referencing in scientific research (APA 7 - ISO-690 numerical citation format) 2. Research databases and search engines (Scopus, Web of Science, ScienceDirect, PubMed, Google Scholar, etc.) 3. Systematic literature review and reporting process 4. Scientific resource management tools (EndNote - Zotero - Mendeley) |
| **12** | **Scientific Ethics and Publication Ethics**   1. Ethics of science 2. The concept of ethics in scientific research 3. Ethical principles and practices in scientific research process 4. Ethical violations in scientific research and their types (plagiarism, distortion, false authorship, forgery, duplication, slicing and dicing) |
| **13** | **The Concept of Measurement**   1. Measurement and scale concepts 2. Scaling techniques 3. Error in the measurement process |
| **14** | **Validity and Reliability in Scientific Research**   1. The concept of validity and validity types in scientific research 2. Factors affecting validity in scientific research 3. The concept of reliability in scientific research and types of reliability 4. Factors affecting reliability in scientific research |
| **15** | ***Final*** |

**EVALUATION SYSTEM**

|  |  |  |
| --- | --- | --- |
| **Semester Studies** | **Number** | **Contribution Margin %** |
| **Attandence** | - | - |
| **Quiz** | - | - |
| **Midterm** | 1 | 30 |
| **Practice** | - | - |
| **Project** | 1 | 60 |
| **Assignment / Presentation** | 1 | 10 |
| **Final** |  | - |
| **Total** | 3 | 100 |

**ECTS / WORKLOAD TABLE**

|  |  |  |  |
| --- | --- | --- | --- |
| **ACTIVITES** | **NUMBER** | **DURATION**  **(Hour)** | **Total workload (Hour)** |
| **Theoretical Course (+Practice)** | 14 | 3 | 42 |
| **Duration of Out-of-Class Study** | 14 | 5 | 70 |
| **Presentation/Seminar Preparation** | - | - | - |
| **Project** | 1 | 50 | 50 |
| **Assignments** | 1 | 15 | 15 |
| **Midterm**   1. **Exam** 2. **Individual Study For The Exam** | 1 | 25 | 25 |
| **Final**   1. **Exam** 2. **Individual Study For The Exam** | - | - | - |
| **Total workload (hours)** | 31 | 98 | 202 |
| **ECTS Credit of The Course (Total workload (hours) / 25)** |  |  | **8** |

**COURSE OUTCOMES**

|  |  |
| --- | --- |
| **No.** | **Explanation** |
| **O1** | Knows the basic concepts of scientific research. |
| **O2** | Designs and implements the purpose, subject, research questions / hypotheses, method, screening, analysis and presentation of resources in the scientific research process. |
| **O3** | Analyses quantitative research methods and explains the most appropriate method for the research. |
| **O4** | Analyses qualitative research methods and explains the most appropriate method for the research. |
| **O5** | Knows different data collection tools according to the research design used in scientific researches and comprehends the properties of these tools. |
| **O6** | Apply the most appropriate analysis method to the research content through the basic data analysis methods frequently used in quantitative and qualitative research. |
| **O7** | Knows the basic features that a comprehensive and scientifically valid research proposal should contain. |
| **O8** | Designs a research proposal suitable for the research field by following the stages of scientific research. |
| **O9** | Knows how and in which methods to obtain and show the sources in scientific research. |
| **O10** | Knows the ethical violations in scientific research by understanding the concepts of scientific ethics and ethics. |
| **O11** | Knowing the basic concepts in the measurement process, explains the basic types of errors encountered in measurement processes. |
| **O12** | Knows how to ensure validity and reliability in a scientific research. |

**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** | **5** | **5** | **4** | **5** | **4** | **3** | **3** | **4** | **5** | **4** | **5** | **5** |
| **O2** | **5** | **5** | **4** | **5** | **5** | **3** | **3** | **5** | **4** | **5** | **5** | **5** |
| **O3** | **5** | **5** | **5** | **5** | **5** | **4** | **4** | **4** | **5** | **4** | **5** | **5** |
| **O4** | **5** | **5** | **5** | **5** | **5** | **4** | **4** | **4** | **5** | **4** | **5** | **5** |
| **O5** | **5** | **5** | **4** | **4** | **5** | **4** | **4** | **3** | **5** | **5** | **4** | **5** |
| **O6** | **4** | **5** | **4** | **5** | **5** | **4** | **4** | **3** | **4** | **4** | **5** | **5** |
| **O7** | **5** | **5** | **5** | **5** | **5** | **3** | **4** | **5** | **5** | **5** | **5** | **5** |
| **O8** | **5** | **4** | **5** | **5** | **5** | **3** | **3** | **4** | **5** | **4** | **5** | **4** |
| **O9** | **5** | **5** | **4** | **4** | **5** | **3** | **3** | **4** | **5** | **5** | **5** | **4** |
| **O10** | **5** | **5** | **5** | **4** | **4** | **3** | **3** | **3** | **4** | **5** | **5** | **5** |
| **O11** | **4** | **5** | **4** | **4** | **5** | **4** | **4** | **3** | **4** | **5** | **5** | **4** |
| **O12** | **5** | **5** | **4** | **5** | **5** | **4** | **4** | **4** | **5** | **5** | **4** | **4** |

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

Lec. Dr. Can SAKAR

**.../…/2024**

**Prof.Dr. Gökhan İbrahim ÖĞÜNÇ**

**Director of the Institute of Forensic Sciences**