# AYDIN ADNAN MENDERES UNIVERSITY
# COURSE INFORMATION FORM

| Course Title | Sample Theory and Applications | | | | | | |
|---|---|---|---|---|---|---|---|
| Course Code | BİS505 | | Couse Level | Second Cycle (Master's Degree) | | | |
| ECTS Credit | 4 | Workload | 105 *(Hours)* | Theory | 2 | Practice | 2 | Laboratory | 0 |
| Objectives of the Course | To be able to comprehend and apply sampling methods in researches. To be able to determine the appropriate sample size based on sampling methods. | | | | | | |
| Course Content | Probabilistic and non-probabilistic sampling, simple random, clustered, stratified, sequential, multistage, systematic sampling technique. | | | | | | |
| Work Placement | N/A | | | | | | |
| Planned Learning Activities and Teaching Methods | Explanation (Presentation), Demonstration, Individual Study | | | | | | |
| Name of Lecturer(s) | Prof. İmran KURT ÖMÜRLÜ, Prof. Mevlüt TÜRE | | | | | | |

## Assessment Methods and Criteria

| Method | Quantity | Percentage (%) |
|---|---|---|
| Midterm Examination | 1 | 40 |
| Final Examination | 1 | 60 |

## Recommended or Required Reading

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|---|---|
| 1 | Thompson, W. (Ed.). (2013). Sampling rare or elusive species: concepts, designs, and techniques for estimating population parameters. Island Press. |
| 2 | Sümbüloğlu, V., Sümbüloğlu K. (2005). Klinik ve Saha Araştırmalarında Örnekleme ve Örneklem Büyüklüğü. Alp Ofset Baskı, Ankara. |
| 3 | Chaudhuri, A., & Stenger, H. (2005). Survey sampling: theory and methods. CRC Press. |
| 4 | Şenol, Ş. (2012). Araştırma ve örnekleme yöntemleri. Nobel. |

| Week | Weekly Detailed Course Contents | |
|---|---|---|
| 1 | Theoretical | Introduction to sampling methods |
| | Practice | Applications with package programs |
| 2 | Theoretical | General definitions of Sampling methods |
| | Practice | Applications with package programs |
| 3 | Theoretical | Sampling distributions and standard error |
| | Practice | Applications with package programs |
| 4 | Theoretical | Estimators and their properties, point and interval estimation |
| | Practice | Applications with package programs |
| 5 | Theoretical | Calculation of sample size for hypothesis testing |
| | Practice | Applications with package programs |
| 6 | Theoretical | Simple random sampling |
| | Practice | Applications with package programs |
| 7 | Theoretical & Practice | Systematic sampling |
| 8 | Intermediate Exam | Midterm exam |
| 9 | Theoretical | Stratified sampling |
| | Practice | Applications with package programs |
| 10 | Theoretical | Sample size estimation at stratified sampling |
| | Practice | Applications with package programs |
| 11 | Theoretical | Cluster sampling |
| | Practice | Applications with package programs |
| 12 | Theoretical | Bootstrap sampling |
| | Practice | Applications with package programs |
| 13 | Theoretical | Other probabilistic sampling methods |
| | Practice | Applications with package programs |
| 14 | Theoretical | Non-probabilistic sampling methods |
| | Practice | Applications with package programs |

| 15 | Theoretical | Literature review and discussion |
|---|---|---|
| | Practice | Literature review and discussion |
| 16 | Final Exam | Final exam |

**Workload Calculation**

| Activity | Quantity | Preparation | Duration | Total Workload |
|---|---|---|---|---|
| Lecture - Theory | 14 | 0 | 2 | 28 |
| Lecture - Practice | 14 | 0 | 2 | 28 |
| Assignment | 1 | 5 | 0 | 5 |
| Midterm Examination | 1 | 20 | 2 | 22 |
| Final Examination | 1 | 20 | 2 | 22 |
| | | | Total Workload (Hours) | 105 |
| | | | [Total Workload (Hours) / 25*] = **ECTS** | 4 |

*25 hour workload is accepted as 1 ECTS

**Learning Outcomes**

| 1 | To be able to comprehend the importance of sampling |
|---|---|
| 2 | To be able to understand the concepts of sampling and estimation theory |
| 3 | To be able to make calculations related to sampling and estimation theory |
| 4 | Knowing the different sampling methods |
| 5 | To be able to apply the methods of sampling in health field |

**Programme Outcomes** *(Biostatistics Master)*

| 1 | To be able to  understand the interdisciplinary interaction releated with biostatistics. |
|---|---|
| 2 | to be able to use Theoretical and practical knowledge at the level of expertise. |
| 3 | To be able to nterpret the information by integrating information from different disciplines and create new information |
| 4 | To be able to nalyze the problems encountered by using research methods |
| 5 | to be able to conduct a study as an independent specialist |
| 6 | To be able to formulate solutions for complex unpredictable problems encountered by developing new approaches and  taking responsibility. |
| 7 | To be able to resolve problems in environments that require leadership. |
| 8 | To be able to evaluate and direct knowledge and skills with a critical approach at the level of expertise. |
| 9 | To be able to to give statistical advise at the begining stages of preparing health related projects |
| 10 | To be able to get the knowledge and the ability of using statistical packages |

**Contribution of Learning Outcomes to Programme Outcomes** *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

| | L1 | L4 | L5 |
|---|---|---|---|
| P1 | 4 | 4 | 4 |
| P2 | 4 | 4 | 4 |
| P3 | 4 | 4 | 4 |
| P4 | 4 | 5 | 4 |
| P5 | 4 | 3 | 4 |
| P6 | 4 | 4 | 4 |
| P7 | 4 | 4 | 3 |
| P8 | 4 | 4 | 4 |
| P9 | 4 | 4 | 5 |
| P10 | 4 | 4 | 5 |