



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

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|--|---|---|------------|--|---|--------------------------------|---|------------|---|
| Course Title | | Scientific Research Methods | | | | | | | |
| Course Code | | VST654 | | Course Level | | Third Cycle (Doctorate Degree) | | | |
| ECTS Credit | 2 | Workload | 50 (Hours) | Theory | 2 | Practice | 0 | Laboratory | 0 |
| Objectives of the Course | | Learning Scientific research methods | | | | | | | |
| Course Content | | The aim of Scientific Research Methods course is to provide the background of research methods that the students require in order to conduct scientific projects during their desertation period. After summarizing the basic principles, the students will be trained in order to provide critical thinking and universal principles of scientific method. | | | | | | | |
| Work Placement | | N/A | | | | | | | |
| Planned Learning Activities and Teaching Methods | | | | Explanation (Presentation), Discussion, Case Study | | | | | |
| Name of Lecturer(s) | | Lec. Uğur UÇAN | | | | | | | |

Assessment Methods and Criteria

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

Recommended or Required Reading

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| 1 | A Beggins Guide to Scientific Method – Stephen Research – John D'Angelo - CRC Press; 1 edition (March 27, 2012) |
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| Week | Weekly Detailed Course Contents | |
|------|---------------------------------|--|
| 1 | Theoretical | What is science and scientific method |
| 2 | Theoretical | Scientific method in daily life |
| 3 | Theoretical | Observation |
| 4 | Theoretical | Problems of observation and proving based on observation |
| 5 | Theoretical | Explanation, Theory and Hypothesis |
| 6 | Theoretical | Corralation and Cousation |
| 7 | Theoretical | Rival explanations and Conflictions |
| 8 | Intermediate Exam | Midterm exam |
| 9 | Theoretical | Experimental science |
| 10 | Theoretical | Experiment design and experimental controls |
| 11 | Theoretical | İncorrect design of experiments |
| 12 | Theoretical | Prejudice and Bias |
| 13 | Theoretical | Causal Studies |
| 14 | Theoretical | Writing scientific reports and scientific presentation |
| 15 | Theoretical | Writing scientific reports and scientific presentation |
| 16 | Final Exam | Final Exam |

Workload Calculation

| Activity | Quantity | Preparation | Duration | Total Workload |
|---|----------|-------------|----------|----------------|
| Lecture - Theory | 14 | 0 | 2 | 28 |
| Midterm Examination | 1 | 8 | 1 | 9 |
| Final Examination | 1 | 12 | 1 | 13 |
| Total Workload (Hours) | | | | 50 |
| [Total Workload (Hours) / 25*] = ECTS | | | | 2 |
| *25 hour workload is accepted as 1 ECTS | | | | |

Learning Outcomes

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|---|---------------------------------------|
| 1 | Explain scientific method principles |
| 2 | Learning to design scientific studies |



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| 3 | Learning to prepare scientific reports and presentations |
| 4 | Learning techniques used and accepted by international research institutions |
| 5 | Learning to evaluate scientific research results |

Programme Outcomes (Reproduction and Artificial Insemination (Veterinary Medicine) Doctorate)

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|----|---|
| 1 | To get knowledge about reproduction and artificial insemination with theoretical lessons and practise, also to get knowledge about reproductive systems of animals, reproductive organs and functions of these organs |
| 2 | Hormonal mechanisms of oogenesis and spermatogenesis, movements of oocyte and sperm cells in the genital tracts, factors affecting spermatogenesis and oogenesis, blood-testis barrier, functions of epididymidis, capacitation and acrosome reaction of sperm cells, fertilization (fusion, activation, penetration) |
| 3 | To get knowledge about reproductive anatomy of male and female animals, reproductive endocrinology, embryonic development of gonads, prenatal development, development-regression and luteolysis of corpus luteum, histological, anatomical and physiological structure of uterus, fertilization, early embryonic development, luteal mechanism, implantation, involution of uterus post partum, sperm migration in cervical mucus, oogenesis, acrosomal enzymes, fusion, activation, penetration, syngamy and polyspermy and reproductive health |
| 4 | To get ample information about the structure and functions of hormones related to reproduction and diagnosis of oestrus, proper seeding time and gain experience in the selection of the technique in domestic animals |
| 5 | To get experience to join reproductive scientific research, to follow scientific advances own field. To transfer all these experiences and knowledge to students and society |
| 6 | To gain ability to reach scientific references, to plan an experiment, study this experiment, evaluation of experimental results and compare this result similar experimental result |
| 7 | Systematic of special examination, morphological and functional examination of genital organs, microbiological examination of sperm cells, ultra structure characteristics of sperm cells, factors affecting sperm quality, spermatological examination, Short term storage and cryopreservation of sperm cells, cryopreservation methods, factors affecting the success of thawing sperm cells, manipulations applied before or after thawing |
| 8 | To get knowledge about reproductive biotechnology (artificial insemination, in-vitro fertilisation, freezing of sperm and embryo, embryo transfer, laparoscopic insemination). To Contribute and advance to science |
| 9 | To get knowledge about infertility, diagnosis of infertility, treatment of infertility in domestic animals especially commercial farms |
| 10 | To make a research about reproduction and artificial insemination, this can contribute and advance to science |
| 11 | To get experience about to write a national or international article about reproduction and artificial insemination, this can contribute and advance to science |

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

| | L1 | L2 | L3 | L4 | L5 |
|-----|----|----|----|----|----|
| P1 | 5 | 5 | 4 | | 3 |
| P3 | 3 | | | | |
| P6 | | 3 | 3 | 4 | 2 |
| P8 | 4 | | | 2 | 2 |
| P9 | | | | 2 | 2 |
| P10 | | | | 3 | 2 |
| P11 | 3 | | | 2 | 2 |

