

ERASMUS MUNDUS MASTER PROGRAMME IN SOIL SCIENCE – emiSS
2020-2021 ACADEMIC YEAR - MODULE SYLLABUS

Name of course:	
<i>SCIENTIFIC RESEARCH METHODS AND ETHICS</i>	
ECTS	6
Type of Course	<i>Compulsory</i>
Form of Examination	<i>Written Examination</i>
Prerequisites	<i>Basic knowledge in statistics, scientific research, ethical behaviours.</i>

Field of Study:	
<i>Agriculture</i>	
Education profile	<i>Academic</i>
Code of study form and level of education	<i>Master of Science</i>
Academic year/Semester	<i>First year/Fall Semester</i>
Specialization	<i>Agriculture</i>
Language of education	<i>English</i>

The lecturer module:	
The name of faculty	<i>Ondokuz Mayıs Univ. Faculty of Agriculture</i>
The name of department	<i>Soil Science & Plant Nutrition</i>

Educational outcomes:

Description of the learning effect

KNOWLEDGE - student knows and understands:

1	<i>Student knows the basic knowledge about scientific research</i>
2	<i>Student knows the planning of studies, data collection, experimental designs</i>
3	<i>Student knows the regulations related to research ethics and publication ethics</i>

SKILLS - the graduate can

1	<i>Student obtains the necessary scientific information from literature, databases or other sources</i>
2	<i>Student has an ability to design, application and analyse and interpreting the results for an independent experiment</i>
3	<i>Student shows the ability to correctly interpret results and draw conclusions</i>

SOCIAL COMPETENCES - graduate:

1	<i>Student shows activity during a discussion on various issues related to scientific research and ethics</i>
2	<i>Student has the competence to participate in agricultural research and discuss their results</i>
3	<i>Students learn national and international regulations related to research and publication ethics.</i>
4	<i>Students gains the responsibilities of the researcher</i>

Course objectives and content:

This course is to teach the research techniques to the graduate students in the field of soil science and plant nutrition and to gain knowledge, awareness and sensitivity about publications and studies in accordance with research and publication ethics.

Basic concepts of scientific research, classification of scientific research, scientific research techniques, collecting data, hypotheses and goals, experimental designs, data analyses, general ethical principles, how scientific validity and reliability can be achieved, the most common research ethics violations and their prevention methods.

Scientific Research Methods and Ethics

36 hours

Subject of lecture	1	<i>Classification of research, problems, hypotheses and objectives 3 h</i>
	2	<i>Scientific research patterns, problems, collecting data 3h</i>
	3	<i>Selection of experimental design 3 h</i>
	4	<i>Experimental design data analyses, 3 h</i>
	5	<i>Experimental design data analyses, 3 h</i>
	6	<i>Experimental design data analyses, 3h</i>
	7	<i>Comparison of the data, 3h</i>
	8	<i>Midterm exam</i>
	9	<i>Science and research, basic concepts in scientific research and approaches 3 h</i>
	10	<i>Ethical principles in the evaluation of data and presentation of research results 3 h</i>
	11	<i>Unethical behaviors in scientific studies 3h</i>
	12	<i>Unfair authorship and other ethical principles 3h</i>
	13	<i>Ethical principles to be followed in the writing of scientific study results 3h</i>
	14	<i>Final exam</i>
The methods of verification and assessment criteria and principles		<i>For a positive grade, sum of 40% of midterm (100%) and 60% of final (100%) exams should be greater than 60.</i>

Literature:



Recommended Textbooks	1- Bright, Wilson, Jr., E. 1990. <i>Introduction to Scientific Research</i> . Dover Publications, Inc. New York. 2- Lawson, J. 2015. <i>Texts in Statistical Science. Design and Analysis of Experiments with R</i> . CRC Press, Taylor & Francis Group. FL. 3- Israel, M. 2015. <i>Research ethic and integrity for social scientists: Beyond regulatory compliance 2nd Edition</i> . Kindle edition.
Complementary	Current publications in scientific journals related to course issues and some course materials supported by lecturer.

Structure of learning outcomes:

The area of study: agricultural, soil science, environmental science, natural resources **6 ECTS***

The structure of student activity:

<i>Learning Activities</i>	<i>Amount</i>	<i>Time (h)</i>	<i>Total workload (h)</i>
Participate in lecture	12	3	36
Participate in midterm exam	1	2	2
Individual study for midterm exam	6	3	18
Individual study for lectures	12	1	12
Laboratory study			
Quiz			
Assignment	12	2	24
Participate in final exam	1	2	2
Individual study for final exam	8	3	24
Literature critical review	5	2	10
Oral exam			
Individual study for problem solution	11	2	22
Consultations			
Participate in researches			
Mandatory practices and internships			
	Total workload (h)		150

*ECTS Credits = Total Workload (Hours) / 25 (Hours/1 ECTS) = 150 / 25 = 6 ECTS

Name Surname
 of Lecturer :

Sign:.....

Date: