FIELD CROPS I

COURSE OUTLINE

1. GENERAL			
SCHOOL	School of Agricultural Sciences		
ACADEMIC UNIT	Department of Agriculture		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0810.3.006.0	**SEMESTER**	1st
COURSE TITLE	Field Crops I		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	3
	2	2
Total	**5**	**5**

COURSE TYPE general background, special background, specialised general knowledge, skills development	Special background
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English)
COURSE WEBSITE (URL)	https://iro.hmu.gr/agriculture-english-courses/

2. LEARNING OUTCOMES

Learning outcomes

LEARNING OUTCOMES

Upon successful completion of the course, students will be able to:

- identify the major winter and spring cereal species as well as grain and forage legumes, and understand their basic morphology and physiology;
- understand the fundamental cultivation practices and determine the factors affecting their implementation and effectiveness;
- develop and apply laboratory skills for evaluating the sowing and quality value of seed;
- understand the effects of biotic and abiotic factors on crop yield formation.

General Competences

Generic Competences

- Search for, analyse and synthesize data and information using appropriate technologies.
- Decision-making.
- Independent work.

3. SYLLABUS

COURSE CONTENT

Theoretical Syllabus

The course presents the production systems of field crops and examines the characteristics of the soil and aerial environment, general crop management practices, and indicators used for evaluating agricultural production.
For each cultivated species, the following topics are covered:
• geographical distribution, importance and economic significance;
• botanical classification, morphology, biology and adaptability;
• yield formation (growth stages and yield components);
• pests and diseases: symptoms and crop protection, with emphasis on preventive measures (resistant varieties, crop rotation, etc.);
• cultivation practices (crop rotation, tillage, fertilisation, sowing, weed control and irrigation);
• harvesting, storage, quality characteristics and utilization of products for human and animal nutrition;
• production improvement practices, varieties and hybrids.
For **leguminous crops**, particular emphasis is placed on the **symbiotic biological nitrogen fixation** process.

Laboratory Exercises

• Cultivation practices (crop rotation, tillage, fertilisation, sowing, weed control and irrigation).
• Evaluation of seed quality and sowing value.
• Harvesting, storage and quality characteristics of agricultural products.
• Varieties and hybrids of field crops.
The laboratory focuses on:
• **Winter cereals:** wheat, barley, oats, rye and triticale.
• **Spring cereals:** maize, rice, sorghum and millet.
• **Leguminous crops:** grain legumes and forage legumes.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Teaching Method: Face-to-face teaching through lectures in the lecture hall and practical sessions in the laboratory.
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	**Use of Information and Communication Technologies (ICT)** • PowerPoint presentations and audiovisual teaching material. • Learning support through the HMU e-Class platform. • Communication with students via the e-Class platform and e-mail.
TEACHING METHODS The manner and methods of teaching are described in detail.	
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	**Student Assessment** Lectures and assessment are conducted in Greek (and in English for international/Erasmus students). **Theory** Assessment is based on a final written examination. **Laboratory** Assessment is based on: • individual laboratory assignments (20%); • laboratory quizzes/tests (80%).

Activity	**Semester workload**
Lectures	39
Laboratory Exercises	26
Independent Study	60
Course total	**125**

5. ATTACHED BIBLIOGRAPHY

RECOMMENDED LITERATURE

• Papakosta-Tasopoulou, D. (2012). *Special Crop Production – Cereals and Legumes*. Synchroni Paideia Publications, Thessaloniki.
• Grammatikaki, G. (2008). *Special Crop Production – Winter Cereals*. Lecture Notes, TEI of Crete, Heraklion.
• Grammatikaki, G. (2008). *Special Crop Production – Spring Cereals*. Lecture Notes, TEI of Crete, Heraklion.
• Grammatikaki, G. (2008). *Special Crop Production – Legumes*. Lecture Notes, TEI of Crete, Heraklion.
• Bilalis, D., Papastylianou, P.-T., & Travlos, E. S. (2018). *Field Crops*. Pedio Publications.
• Kulp, K., & Ponte, G. J. (2000). *Handbook of Cereal Science and Technology*. Marcel Dekker.
• Smith, C. W., & Dilday, R. H. (2003). *Rice: Origin, History, Technology, and Production*. John Wiley & Sons.
• Smith, C. W., Betran, J., & Runge, E. C. A. (2004). *Corn: Origin, History, Technology, and Production*. John Wiley & Sons.