

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	Environment and Agricultural Engineering		
<b>ACADEMIC UNIT</b>	Natural Resources Management and Agricultural Engineering		
<b>LEVEL OF STUDIES</b>			
<b>COURSE CODE</b>	2420	<b>SEMESTER</b>	8 <sup>o</sup>
<b>COURSE TITLE</b>	Crop Yield Response to Water		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>	
Lectures and Practical Exercises	3	3	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	Scientific Area, Skills Development		
<b>PREREQUISITE COURSES:</b>			
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	YES		
<b>COURSE WEBSITE (URL)</b>			

### 2. LEARNING OUTCOMES

<p><b>Learning outcomes</b>  <i>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> <li>• <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i></li> <li>• <i>Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i></li> <li>• <i>Guidelines for writing Learning Outcomes</i></li> </ul>		
<p>The purpose of the course is to understand and plan the irrigation planning of cultivated plants and the response of crops to water</p> <p>Upon successful completion of the course the student will be able to:</p> <ul style="list-style-type: none"> <li>● Plan the irrigation program correctly</li> <li>● To know in depth the response of crops to water</li> <li>● To determine plant factors (Approximation of simple plant factor, correction of plant factor according to climatic conditions, correction of plant factor under non-ideal conditions).</li> <li>• To manage the irrigation water when it is sufficient and when it is insufficient.</li> <li>• To be able to apply deficit irrigation when this is necessary.</li> </ul>		
<p><b>General Competences</b>  <i>Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>  <i>Adapting to new situations</i>  <i>Decision-making</i>  <i>Working independently</i>  <i>Team work</i>  <i>Working in an international environment</i> </td> <td style="width: 50%; vertical-align: top;"> <i>Project planning and management</i>  <i>Respect for difference and multiculturalism</i>  <i>Respect for the natural environment</i>  <i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>  <i>Criticism and self-criticism</i>  <i>Production of free, creative and inductive thinking</i> </td> </tr> </table>	<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i> <i>Adapting to new situations</i> <i>Decision-making</i> <i>Working independently</i> <i>Team work</i> <i>Working in an international environment</i>	<i>Project planning and management</i> <i>Respect for difference and multiculturalism</i> <i>Respect for the natural environment</i> <i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i> <i>Criticism and self-criticism</i> <i>Production of free, creative and inductive thinking</i>
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Working in an interdisciplinary environment  
Production of new research ideas

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Others...  
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- Project planning and management
- Analyze and process project information
- Ability to work independently and as part of a team
- Work in a multidisciplinary environment

### 3. SYLLABUS

- Irrigation scheduling (generally, the irrigation schedule, FAO approach 56).
- Response of crops to water – FAO 66 (response factor – yield, relation of relative evapotranspiration deficit and reduction of crop relative yield)
- deficit irrigation
- Plant factors. Approximation of simple plant factor, correction of plant factor according to climatic conditions. Plant factor correction under non-ideal conditions. Approximation of the double plant factor. Correction of the plant base coefficient, based on the percentage of ground surface coverage and plant height.
- Irrigation water use efficiency
- Management of irrigation water when it is in short supply.
- Irrigation planning and scheduling from soil water content data
- The continuous soil-plant-atmosphere system

### 4. TEACHING and LEARNING METHODS - EVALUATION

<b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i>	In classroom and laboratory.	
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i>	<b>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES.</b>	
<b>TEACHING METHODS</b> <i>The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.  The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i>	<b>Activity</b>	<b>Semester workload</b>
	Lectures	45
	Practical exercises that focus on the application of methodologies and analysis of case studies in smaller groups of students	20
	Case study	10
	Total Course	75
<b>STUDENT PERFORMANCE EVALUATION</b> <i>Description of the evaluation procedure</i>	I. Written final exam (50%) which includes: Short Answer Questions, Problem Solving. II. Final written exam (50%) on the subjects of the	

*Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other*

*Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*

laboratory exercises

## 5. ATTACHED BIBLIOGRAPHY

- *Suggested bibliography:*

*FAO Irrigation and Drainage Paper No 56,  
FAO Irrigation and Drainage Paper No 66*

- *Related academic journals:*

Journal of irrigation and drainage engineering (ASCE)  
Irrigation and Drainage ICID  
Agricultural water management