

Innovación Educativa

ETS Ingenieros Agrónomos



P-2

Desarrollo de metodologías docentes para la impartición on-line de asignaturas adaptadas al EEES en dobles titulaciones ("joint degrees") entre la Universidad Politécnica de Madrid y otras universidades extranjeras.

Nivel: Grupos de Innovación Educativa

Coordinador: José María Fuentes Pardo.

Diagrama de temas



News forum

1 OBJECTIVES:

2 INTRODUCTION

- 1.1 ENGINEERING PROJECTS. CONCEPTS & DEFINITIONS
- 1.2 THE PROJECT CYCLE
- QUESTIONNAIRE I



3 FORMULATION OF AGRICULTURAL PROJECTS

- 1. PREPARATION OF THE PROJECT FORMULATION
- 2. RECONNAISSANCE & PRELIMINARY DESIGN
- The project area analysis



Diseño de un espacio formativo para la impartición de una asignatura conjunta entre la Universidad Politécnica de Madrid y otra universidad extranjera en la modalidad e-learning.

(GIE BETI-UPM)

Project: IE10021522

Calendario
octubre 2011

Lun	Mar	Mié	Jue	Vie	Sáb	Dom
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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Clave de eventos

Global Curso

Grupo Usuario

Novedades

Agregar un nuevo tema...
(Sin novedades aún)

OBJETIVOS INICIALES

- OBJETIVO 1: Efectuar un análisis comparativo de diferentes plataformas para la impartición de asignaturas e-learning utilizadas en Universidades españolas y extranjeras.
- OBJETIVO 2: Realizar un análisis comparativo entre la oferta formativa de asignaturas entre los nuevos grados adaptados al EEES que se impartirán en la ETSI Agrónomos de la Universidad Politécnica de Madrid y los existentes en diferentes Universidades europeas y americanas.
- OBJETIVO 3: Diseñar un espacio formativo para la impartición on-line de una asignatura conjunta entre la Universidad Politécnica de Madrid y otra universidad extranjera.
- OBJETIVO 4: Analizar el grado de satisfacción de profesores y estudiantes con la metodología propuesta, los contenidos formativos generados y las herramientas de apoyo a la docencia.

ACTUACIONES REALIZADAS EN EL MARCO DEL PROYECTO

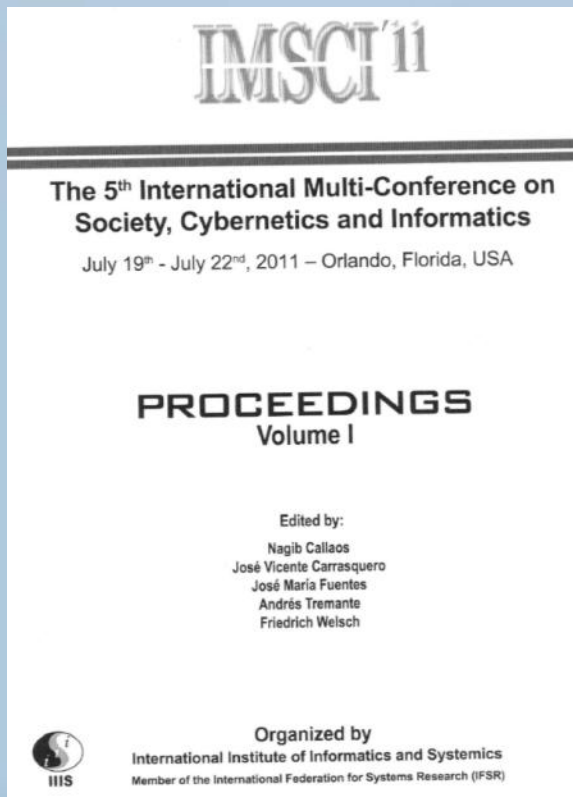
- Recopilación de información sobre el uso en universidades españolas y las funcionalidades de diferentes plataformas virtuales de aprendizaje (Blackboard, Claroline, Dokeos, Ilias, dotLRN, Moodle, Sakai, etc.).
- Presentación de una comunicación en la 9th Conferencia Internacional EISTA-2011 [*International Conference on Education and Information Systems, Technologies and Applications*] celebrada en Orlando (EEUU) en Julio de 2011. **Session Best Paper Award.**
- Organización de una sesión temática sobre Innovación Educativa en Estudios de Ingeniería en el citado Congreso EISTA 2011.
- Recopilación de información y elaboración de una tabla comparativa de las titulaciones de grado en Ingeniería de Biosistemas y/o Agrícola ofertados en diferentes universidades estadounidenses (40) y europeas (54).
- Recopilación/elaboración de materiales formativos en lengua inglesa y diseño de un espacio formativo para la impartición on-line de una asignatura conjunta entre la Universidad Politécnica de Madrid y otra universidad extranjera (*Technical Projects in Biosystems Engineering*).
- Elaboración de una página web para la difusión del grupo de innovación educativa BETI de la Universidad Politécnica de Madrid.

RESULTADOS OBTENIDOS

- Una comunicación publicada en las Actas del Congreso Internacional EISTA 2011 [ISBN: 978-1-936338-33-7]. Premio: *'Best Paper Session Award'*
- Una sesión organizada en el Congreso Internacional EISTA-2011, titulada *'Teaching Innovation and Processes of Change in Engineering Education: New Ideas, Methodologies and Models'*.
- Colección de planes de estudios (listado de asignaturas) de las titulaciones de grado (BS) en Ingeniería de Biosistemas y/o Ingeniería Agrícola ofertados en 94 universidades extranjeras.
- Tabla comparativa de los estudios de grado en Ingeniería de Biosistemas y/o Agrícola ofertados en 40 universidades estadounidenses y 54 universidades europeas.
- Materiales docentes en lengua inglesa para la asignatura *'Proyectos de Ingeniería'*: archivos PDF, presentaciones PowerPoint, ejercicios, test de autoevaluación.
- Espacio en Moodle para la asignatura *'Technical Projects in Biosystems Engineering'*
<https://moodle.upm.es/formacion/login/login.php>
- Página web del grupo de Innovación Educativa BETI: <http://www.betiupm.es/>

RESULTADOS OBTENIDOS

Estudio comparativo de plataformas para la impartición de asignaturas e-learning (OBJETIVO 1)



IMSCI'11

The 5th International Multi-Conference on Society, Cybernetics and Informatics
July 19th - July 22nd, 2011 – Orlando, Florida, USA

PROCEEDINGS
Volume I

Edited by:
Nagib Callaos
José Vicente Carrasquero
José María Fuentes
Andrés Tremante
Friedrich Welsch

Organized by
International Institute of Informatics and Systemics
Member of the International Federation for Systems Research (IFSR)

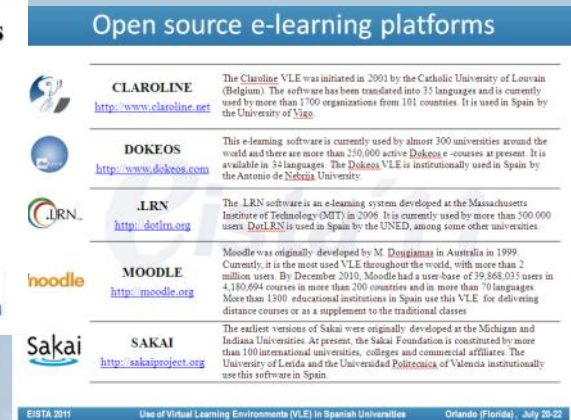







The 9th International Conference on Education and Information Systems, Technologies and Applications: EISTA 2011
Orlando, Florida (USA) - July 19th-22nd, 2011

Use of Virtual Learning Environments (VLE) in Spanish Universities: Current State and Comparison of E-learning Tools.

Jose Maria Fuentes (Presenter)
Álvaro Ramirez
Ana Isabel Garcia
Francisco Ayuga

BETI Biosystems Engineering Teaching Innovation Group
Universidad Politécnica de Madrid (Spain)



Open source e-learning platforms	
	CLAROLINE http://www.claroline.net The Claroline VLE was initiated in 2001 by the Catholic University of Louvain (Belgium). The software has been translated into 35 languages and is currently used by more than 1700 organizations from 191 countries. It is used in Spain by the University of Vigo.
	DOKEOS http://www.dokeos.com This e-learning software is currently used by almost 300 universities around the world and there are more than 250,000 active Dokeos e-courses at present. It is available in 24 languages. The Dokeos VLE is institutionally used in Spain by the Antonio de Nebrija University.
	LRN http://doctlr.org The LRN software is an e-learning system developed at the Massachusetts Institute of Technology (MIT) in 2006. It is currently used by more than 500,000 users. DoLRN is used in Spain by the UNED, among some other universities.
	MOODLE http://moodle.org Moodle was originally developed by M. Dougiaman in Australia in 1999. Currently, it is the most used VLE throughout the world, with more than 2 million users. By December 2010, Moodle had a user-base of 39,868,035 users in 4,180,694 courses in more than 200 countries and in more than 70 languages. More than 1300 educational institutions in Spain use this VLE for delivering distance courses or as a supplement to the traditional classes.
	SAKAI http://sakaiproject.org The earliest versions of Sakai were originally developed at the Michigan and Indiana Universities. At present, the Sakai Foundation is constituted by more than 100 international universities, colleges and commercial affiliates. The University of Lerida and the Universidad Politécnica de Valencia institutionally use this software in Spain.



9th. International Conference on Education and Information Systems, Technologies and Applications

Session's Best Paper Award
Session: Teaching Innovation and Processes of Change in Engineering Education: New Ideas, Methodologies and Models

presented to
José María Fuentes, Álvaro Ramírez, Ana-Isabel García and Francisco Ayuga
for the paper entitled
Use of Virtual Learning Environments (VLE) in Spanish Universities: Current State and Comparison of e-Learning Tools

Nagib C. Callaos
General Co-Chair
IMSCI 2011

July 22nd, 2011

Andrés Tremante
General Co-Chair
IMSCI 2011

RESULTADOS OBTENIDOS

Análisis comparativo entre la oferta formativa en los nuevos grados adaptados al EEES de la ETSI Agrónomos de la Universidad Politécnica de Madrid y los existentes en diferentes Universidades europeas y americanas. (OBJETIVO 2)

BIOLOGICAL AND AGRICULTURAL ENGINEERING AGRICULTURAL ENGINEERING OPTION

	FRESHMAN	SOPHOMORE	JUNIOR	SENIOR	
FALL	BAE 142 Engineering for Living Systems 2	BAE 242 Engineering Analysis & Design 2	CE 211 Engineering Measurements 3	BAE 352 Soil & Water Engineering or CE 322 Hydraulics 3	
	Chem 111 Principles of Chemistry I 4	Biol 115 Cells & the Evolution of Life 4	Engr 320 Engineering Thermodynamics & Heat Transfer 3	BAE 478 Fundamentals of Hydrologic Engineering 3	
	CORE 103-149 Core Discovery Course 4	Engr 105 Engineering Graphics 2	Engr 335 Engineering Fluid Mechanics 3	BAE 478 Engineering Design I 3	
	Engr 102 College Writing & Rhetoric 3	Engr 210 Engineering Statics 3	Engr 350 Engineering Mechanics of Materials 3	BAE 491 Senior Seminar 1	
	Math 170 Analytic Geometry & Calculus I 4	Math 275 Analytic Geometry & Calculus II 3	Elective Elective—Humanities or Social Science 3	CE 342 Theory of Structure 3	
		Phys 212 Engineering Physics II 3		Electives (For example, Soil 438 Pesticides in the Environment) 3	
	TOTAL	17	17	16	
	SPRING	CS 112 Intro. to Problem Solving & Programming 3	Comm 101 Fundamentals of Public Speaking 2	BAE 372 Agricultural Power & Machinery 3	**BAE 441 Instrumentation & Measurements 3
		Chem 112 Principles of Chemistry II 5	Engr 220 Engineering Dynamics 3	*BAE 462 Electric Power & Controls 3	BAE 459 Irrigation System Design 3
		CORE 153-199 Core Discovery Course 3	Engr 240 Intro. to Electrical Circuits 3	Engr 360 Engineering Economy 2	BAE 461 Bioprocess Engineering 3
Math 175 Analytic Geometry & Calculus II 4		Soil 205 Ordinary Differential Equations 3	Stat 301 Probability & Statistics 3	BAE 479 Engineering Design II 3	
Phys 211/211L Engineering Physics I/Lab 4		Soil 205 Soil Ecosystem 3	Electives (For example, Engr 483 Remote Sensing/GIS) 6	Elective Elective—Humanities or Social Science 3	
		Elective Elective—Humanities or Social Science 3			
TOTAL		19	17	17	

Total for degree = 128 credits. Course offerings may change from year to year. Always check the current course catalog.
*Offered in spring of odd years
**Offered in spring of even years

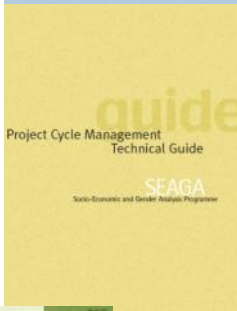
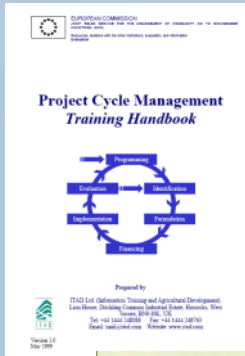
"Students in agricultural and biological engineering get a broad range of knowledge. When in your career do you only work on one particular subject of engineering? A person will be designing, wiring, doing structural analysis, and more."

SHANNON STRITTMATTER, agricultural engineering option

Universidad	Programa	ABET	Duración		Credits					
			Semestres	Credits	General Ed.	Basic Sci.	Hum. & Economic Sci.	Engineering Sci.	Agric.-Biol. Sci.	
1 Auburn University Main Campus	B.S. degree in Biosystems Engineering	X	8	224						
2 California Polytechnic State University	B.S. degree in BioResource and Agriculture Engineering	X	12q	215	20%	20%	2%	13%	12%	4%
3 Clemson University	B.S. degree in Biosystems Engineering	X	8	219	14%	28%	0%	11%	18%	18%
4 Cornell University	B.S. degree in Biological Engineering	X	8	216	22%	23%	0%	11%	11%	18%
5 Florida Agricultural and Mechanical University	B.S. degree in Biological and Agricultural Systems Engineering	X	8	218	14%	28%	2%	28%	3%	19%
6 Iowa State University	B.S. degree in Biological Systems Engineering	X	8	217	16%	28%	0%	17%	6%	19%
7 Kansas State University	B.S. degree in Biological & Agricultural Engineering	X	8	221	7%	28%	11%	18%	6%	19%
8 Kansas State University	B.S. degree in Biological Systems Engineering	X	8	216	13%	32%	4%	10%	6%	18%
9 Louisiana State University	B.S. degree in Biological Engineering	X	8	224	16%	22%	2%	17%	19%	19%
10 Michigan State University	B.S. degree in Biosystems Engineering	X	8	218	18%	23%	0%	13%	2%	21%
11 North Carolina State University at Raleigh	Biological Engineering (B.S.)	X	8	214	18%	20%	2%	15%	0%	19%
12 North Dakota State University - Main Campus	B.S. degree in Agricultural and Biosystems Engineering	X	8	226	23%	20%	2%	21%	0%	19%
13 The Ohio State University - Main Campus	B.S. degree in Food, Agricultural and Biological Engineering	X	12 q	352	18%	28%	2%	17%	6%	19%
14 Oklahoma State University-Main Campus	B.S. degree in Biosystems Engineering	X	8	226	16%	21%	5%	19%	3%	21%
15 Oregon State University	B.S. degree in BioEngineering	X	12 q	215	17%	30%	0%	12%	12%	12%
16 Purdue University	B.S. degree in Agricultural Engineering	X	8	223	19%	20%	0%	14%	6%	19%
17 Purdue University	B.S. degree in Biological and Food Process Engineering	X	8	226	19%	28%	0%	2%	13%	19%
18 South Dakota State University	B.S. degree in Agricultural and Biosystems Engineering (ABE)	X	8	231	18%	27%	0%	19%	5%	19%
19 Texas A & M University	B.S. degree in Biological & Agricultural Engineering	X	8	218	20%	18%	0%	23%	3%	21%
20 University of Arizona	B.S. degree in Biosystems Engineering	X	8	218	20%	22%	3%	11%	6%	19%
21 University of Arkansas	B.S. degree in Biological and Agricultural Engineering (BBAE)	X	8	218	18%	23%	0%	12%	6%	19%
22 University of California, Davis	B.S. degree in Biological Systems Engineering	X	12 q	206	18%	28%	2%	15%	7%	19%
23 University of Florida	B.S. degree in Agricultural and Biological Engineering (BS)	X	8	218	14%	30%	0%	20%	6%	19%
24 University of Georgia	B.S. degree in Agricultural Engineering (BSAE)	X	8	223	20%	19%	2%	30%	3%	19%
25 University of Georgia	B.S. degree in Biological Engineering (BSBE)	X	8	228	20%	21%	0%	24%	12%	12%
26 University of Idaho	B.S. degree in Biological and Agricultural Engineering (BBAE) - (Biological Systems Engineering)	X	8	218	18%	30%	0%	12%	12%	12%
27 University of Idaho	B.S. degree in Biological and Agricultural Engineering (BBAE) - (Agricultural Engineering)	X	8	218	18%	28%	0%	21%	6%	19%
28 University of Illinois at Urbana-Champaign	B.S. degree in Agricultural and Biological Engineering - (Agricultural Engineering Concentration)	X	8	218	18%	28%	2%	14%	1%	19%
29 University of Illinois at Urbana-Champaign	B.S. degree in Agricultural and Biological Engineering - (Biological Engineering Concentration)	X	8	218	18%	28%	2%	20%	0%	19%
30 University of Kentucky	B.S. degree in Biosystems & Agricultural Engineering	X	8	221	17%	28%	2%	20%	6%	19%
31 University of Maine	B.S. degree in Biological Engineering	X	8	223	16%	30%	0%	5%	16%	19%
32 University of Maryland-College Park	B.S. degree in Biological Resources Engineering	X	8	211	18%	23%	3%	16%	3%	19%
33 University of Minnesota-Twin Cities	B.S. degree in Bioproducts and Biosystems Engineering	X	8	218	14%	31%	0%	8%	12%	12%
34 University of Missouri-Columbia	B.S. degree in Agricultural Engineering (BAE)	X	8	214	18%	27%	0%	11%	10%	19%
35 University of Nebraska-Lincoln	B.S. degree in Agricultural Engineering	X	8	223	17%	28%	3%	17%	2%	19%
36 University of Nebraska-Lincoln	Biological Systems Engineering	X	8	228	17%	27%	3%	9%	12%	12%
37 University of Tennessee at Knoxville	B.S. degree in Biosystems Engineering	X	8	218	18%	23%	3%	14%	6%	19%
38 University of Wisconsin-Madison	B.S. degree in Biological Systems Engineering	X	8	218	13%	32%	5%	15%	6%	19%
39 Utah State University	B.S. degree in Biological Engineering	X	8	214	18%	20%	0%	13%	9%	19%
40 Virginia Polytechnic Institute and State University	B.S. degree in Biological Systems Engineering (BSE)	X	8	228	17%	30%	2%	15%	7%	19%

RESULTADOS OBTENIDOS

Recopilación y elaboración de materiales formativos para la impartición on-line de una asignatura conjunta entre la Universidad Politécnica de Madrid y otra universidad extranjera. (OBJETIVO 3)



Technical Projects in Biosystems Engineering Lesson 3 - The Project report

3.1 THE ENGINEERING PROJECT REPORT

As indicated in Chapter 2, the main text of a comprehensive final report, depending on the project to which it refers, will have up to ten chapters.

These are listed below and the content of each is discussed in sequence. The main text should be preceded by a summary and conclusions and, inside the front cover of the report, a list of acronyms and abbreviations, currency equivalents, and any local weights or measures which need special explanation. If appropriate, selected country statistics may also be given.

Summary and Conclusions

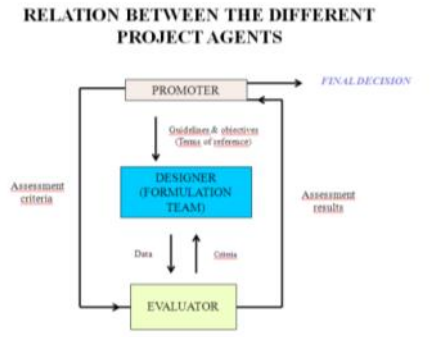
1. Introduction
2. Background
3. The Project Area, its People and Development Potential
4. Project Rationale and Design Considerations
5. The Project
6. Organization and Management
7. Agricultural Development, Production and Financial Results
8. Market Prospects and Prices
9. Benefits, Risks and Sustainability
10. Commitments, Issues and Follow-up Actions

The guidance given on the appropriate content for each chapter of main text, as well as the examples of typical forms of presentation of sections of text and numerical data, are intended mainly as reference sources on specific points, to be consulted by preparation teams as they arise in the course of document preparation. The main text of each section seeks to cover the great majority of an investment project, it can also be read as a response to the whole design process described in the course.

SUMMARY AND CONCLUSIONS

The main aim of this section is to provide a project. It should not exceed ten percent of the report. It is most easily drafted after the rest, generally have one paragraph for each main aspect of the national situation which are at project selection, the project's relationship to project objectives, main components, distribution, beneficiaries and the project's social, financial and environmental sustainability, and appraisal and implementation.

Apuntes en PDF



Presentaciones PowerPoint

Documentos descargados de la red

Test de autoevaluación

Gabinete de Tele-Educación

QUESTIONAIRE I - Attempt 1

Time Remaining: 0:10:38

Preview QUESTIONAIRE I

1/4 The "idea" phase of the Project cycle appears as a consequence of:

Choose one answer.

- a. The identification of a problem, the need of satisfying a constraint or seizing an opportunity.
- b. Searching for a problem, satisfying a constraint or seizing an opportunity.
- c. The identification of a problem, the need of satisfying a constraint or seizing a necessity.
- d. None of the above statements are correct.

2/4 The project agents that form the human dimension of the project are:

Choose one answer.

- a. Promoter, Design Team, Contractor, Beneficiaries and Evaluator
- b. Organization, Beneficiaries, Designer, Contractor and Promoter
- c. Promoter, Designer, Site Manager and Contractor

3/4 The project social agent who is in charge of planning the change is:

Choose one answer.

- a. The designer
- b. The contractor and the promoter
- c. The beneficiaries

4/4 The Project terms of reference are defined by:

Choose one answer.

- a. The design team
- b. The contractor together with the designer.
- c. The promoter

RESULTADOS OBTENIDOS

Diseño de un espacio formativo para la impartición on-line de una asignatura conjunta entre la Universidad Politécnica de Madrid y otra universidad extranjera. (OBJETIVO 3)



UNIVERSIDAD POLITÉCNICA DE MADRID
Gabinete de Tele-Educación

You are logged in as FUENTES PARDO JOSE MARIA (Logout)

UPM > TPBE

Switch role to: Turn editing on

People

- Participants

Activities

- Assignments
- Forums
- Quizzes
- Resources

Search Forums

Advanced search

Administration

- Turn editing on
- Settings
- Assign roles
- Grades
- Outcomes
- Groups
- Backup
- Restore
- Import
- Reset
- Reports
- Questions
- Files
- Profile

My courses

- Technical Projects in Biosystems

Topic outline

1 OBJECTIVES & COMPETENCES:

- To know the dimension of an Engineering Project
- To know the phases of the life cycle of an Engineering Project
- To know and identify the agents involved in the life cycle of a project.
- To identify problems, necessities and opportunities in the Biosystems Engineering field.
- To identify, assess and consider the human, social and environmental factors which affect the project or are affected by the project.
- To understand the elements which take part of a Project and the need of an integrated approach.
- To understand the roles involved in the project agents
- To understand the temporal dimension of an Engineering Project
- To apply the project design, project assessment, project management and project monitoring methodologies
- To know and apply the multicriteria decision techniques for the analysis of an Engineering Project
- To be able to represent the solutions adopted using technical plans
- To be able to propose strategic action plans.
- To be able to assess projects from the economic, social and environmental points of view.
- To be able to organize and plan the teamwork
- To develop skills for the written transmission of ideas and to promote the capacity to synthesize
- To develop skills for the literature research
- To develop skills for using computer media and new technologies.

2 INTRODUCTION

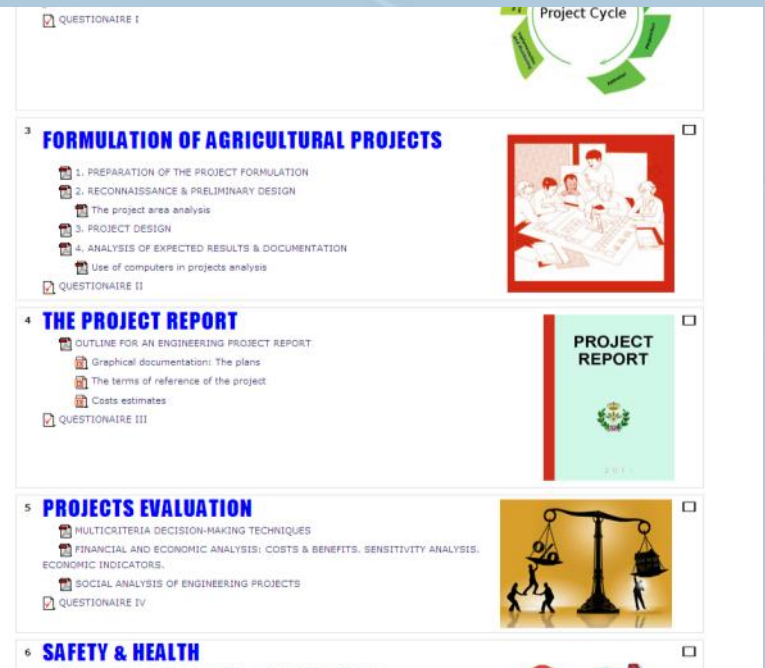
3 FORMULATION OF AGRICULTURAL PROJECTS

4 THE PROJECT REPORT

5 PROJECTS EVALUATION

6 SAFETY & HEALTH

<https://moodle.upm.es/formacion/login/login.php>



QUESTIONAIRE I

Project Cycle

3 FORMULATION OF AGRICULTURAL PROJECTS

- 1. PREPARATION OF THE PROJECT FORMULATION
- 2. RECONNAISSANCE & PRELIMINARY DESIGN
- 3. PROJECT DESIGN
- 4. ANALYSIS OF EXPECTED RESULTS & DOCUMENTATION

QUESTIONAIRE II

4 THE PROJECT REPORT

- 1. OUTLINE FOR AN ENGINEERING PROJECT REPORT
- 2. Graphical documentation: The plans
- 3. The terms of reference of the project
- 4. Costs estimates

QUESTIONAIRE III

5 PROJECTS EVALUATION

- 1. MULTICRITERIA DECISION-MAKING TECHNIQUES
- 2. FINANCIAL AND ECONOMIC ANALYSIS: COSTS & BENEFITS, SENSITIVITY ANALYSIS, ECONOMIC INDICATORS.
- 3. SOCIAL ANALYSIS OF ENGINEERING PROJECTS

QUESTIONAIRE IV

6 SAFETY & HEALTH

DIFICULTADES ENCONTRADAS

- Durante el curso 2010/2011 no se convocan las ayudas de la UPM para la para la presentación de ponencias y comunicaciones en congresos y reuniones científico-técnicas → Se requiere dedicar una parte importante del presupuesto concedido para difundir los resultados en un Congreso Internacional celebrado en EEUU.
- La información que las Universidades ofrecen en sus páginas web sobre los planes de estudio no siempre es completa y/o accesible.
- A fecha actual no se he podido evaluar el espacio formativo desarrollado.