

## [GAH106] DATA ACQUISITION AND MONITORING SYSTEMS

### GENERAL INFORMATION

<b>Studies</b>	DEGREE IN ENERGY ENGINEERING		<b>Subject</b>	INSTRUMENTATION, AUTOMATION AND CONTROL	
<b>Semester</b>	2	<b>Course</b>	3	<b>Mention / Field of specialisation</b>	
<b>Character</b>	COMPULSORY		<b>Language</b>	EUSKARA	
<b>Plan</b>	2017	<b>Modality</b>	Adapted Face-to-face		<b>Total hours</b>
<b>Credits</b>	6	<b>Hours/week</b>	2.78	50 class hours + 100 non-class hours = <b>150 total hours</b>	

### PROFESSORS

URKIZU AROCENA, JUNE

### REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	(No previous knowledge required)

### SKILLS

#### VERIFICA SKILLS

##### SPECIFIC

**GAES02** - Applied knowledge of electronic instrumentation.

##### GENERAL

**GACG1** - To have the knowledge, understanding and ability to apply the law pertaining to energy engineering; to be able to comply with the specifications, standards and regulations in force.

**GACG3** - To take the initiative in problem solving, decision making and creativity, and to communicate and share knowledge and skills, understanding the ethical and professional responsibilities of the business activity in the field of Energy Engineering.

**GACG4** - To know how to perform measurements, calculations, valuations, studies, reports, task planning schemes, and other activities pertaining to the field of Energy.

**G\_CB6** - To be able to respond adequately in complex situations or situations that call for innovative solutions in both the academic field and work environments within their field of study;

##### CROSS

**GACTR2** - To be able to do their job in cooperative, participatory environments, with awareness of social responsibility.

##### BASIC

**G\_CB3** - To be capable of gathering and interpreting relevant data (normally within their field of study) in order to make judgements, reflecting on relevant matters of a social, scientific or ethical nature

### LEARNING RESULTS

**RG301** Assumes responsibilities in the work team, organizing and planning the tasks to be developed, facing the contingencies and encouraging the participation of its members.

#### LEARNING ACTIVITIES

	CH	NCH	TH
Development, writing and presentation of memorandums, reports, audiovisual material, etc. Relating to projects/POPBLs carried out individually or in teams		6 h.	6 h.

#### EVALUATION SYSTEM

	W
Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence	100%

#### MAKE-UP MECHANISMS

(No mechanisms)

**CH - Class hours:** 0 h.

**NCH - Non-class hours:** 6 h.

**TH - Total hours:** 6 h.

**RG302** Analyze the intervening variables in the problem and propose actions for a stable situation.

#### LEARNING ACTIVITIES

	CH	NCH	TH
Development, writing and presentation of memorandums, reports, audiovisual material, etc.		5 h.	5 h.

Relating to projects/POPBLs carried out individually or in teams

**EVALUATION SYSTEM**

*W*

Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence

100%

**MAKE-UP MECHANISMS**

*(No mechanisms)*

**CH - Class hours:** 0 h.

**NCH - Non-class hours:** 5 h.

**TH - Total hours:** 5 h.

**RG304** Define the problem, develop the solution and present the conclusions in a efficient manner, arguing and justifying each one of them in writing.

**LEARNING ACTIVITIES**

*CH*

*NCH*

*TH*

Development, writing and presentation of memorandums, reports, audiovisual material, etc.  
Relating to projects/POPBLs carried out individually or in teams

6 h.

6 h.

**EVALUATION SYSTEM**

*W*

Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence

100%

**MAKE-UP MECHANISMS**

*(No mechanisms)*

**CH - Class hours:** 0 h.

**NCH - Non-class hours:** 6 h.

**TH - Total hours:** 6 h.

**RG305** Define the problem, develop the solution and present the conclusions in a efficient manner, arguing and justifying each one of them in spoken form.

**LEARNING ACTIVITIES**

*CH*

*NCH*

*TH*

Development, writing and presentation of memorandums, reports, audiovisual material, etc.  
Relating to projects/POPBLs carried out individually or in teams

6 h.

6 h.

**EVALUATION SYSTEM**

*W*

Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence

100%

**MAKE-UP MECHANISMS**

*(No mechanisms)*

**CH - Class hours:** 0 h.

**NCH - Non-class hours:** 6 h.

**TH - Total hours:** 6 h.

**RG306** [!] *Analiza los procesos energéticos y selecciona las variables más relevantes a medir.*

**LEARNING ACTIVITIES**

*CH*

*NCH*

*TH*

Individual study and work, tests and evaluations and check points  
Practices of problem solving and real or simulated context projects  
Presentation of the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects

4 h.

13 h.

13 h.

6 h.

10 h.

16 h.

16 h.

**EVALUATION SYSTEM**

*W*

Individual written and oral tests to assess technical skills of the subject

100%

**MAKE-UP MECHANISMS**

Individual written and oral tests to assess technical skills of the subject

**CH - Class hours:** 20 h.  
**NCH - Non-class hours:** 19 h.  
**TH - Total hours:** 39 h.

**RG307** [!] *Adquiere, procesa estadística y computacionalmente, y monitoriza las variables, previamente seleccionadas (utilizando coms industriales)*

**LEARNING ACTIVITIES**

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
Development, writing and presentation of memorandums, reports, audiovisual material, etc. Relating to projects/POPBLs carried out individually or in teams		34 h.	34 h.
Individual study and work, tests and evaluations and check points	5 h.	10 h.	15 h.
Practices of problem solving and real or simulated context projects	3 h.	3 h.	6 h.
Presentation of the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	22 h.		22 h.
Individual and team exercises		11 h.	11 h.

**EVALUATION SYSTEM**

*W*

Individual written and oral tests to assess technical skills of the subject	62%
Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence	38%

**MAKE-UP MECHANISMS**

Individual written and oral tests to assess technical skills of the subject

**CH - Class hours:** 30 h.  
**NCH - Non-class hours:** 58 h.  
**TH - Total hours:** 88 h.

**CONTENTS**

**LEARNING RESOURCES AND BIBLIOGRAPHY**

**Learning resources**

Subject notes  
 Labs  
 Class presentations  
 Lab practical training

**Bibliography**

[http://katalogoa.mondragon.edu/janium-bin/janium\\_login\\_opac\\_re\\_Ink.pl?grupo=ENERGIA32&ejecuta=10](http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_Ink.pl?grupo=ENERGIA32&ejecuta=10)