



## IDENTIFYING DATA

### Methodology for the preparation, presentation and management of technical projects

|                     |   |          |      |            |
|---------------------|---|----------|------|------------|
| Subject             | Methodology for the preparation, presentation and management of technical projects  |          |      |            |
| Code                | V12G363V01905   |          |      |            |
| Study programme     | Grado en Ingeniería en Tecnologías Industriales   |          |      |            |
| Descriptors         | ECTS Credits  | Choose   | Year | Quadmester |
|                     | 6   | Optional | 4th  | 2nd        |
| Teaching language   | Spanish<br>Galician<br>English  |          |      |            |
| Department          |   |          |      |            |
| Coordinator         | Cerqueiro Pequeño, Jorge  |          |      |            |
| Lecturers           | Cerqueiro Pequeño, Jorge<br>Comesaña Campos, Alberto  |          |      |            |
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| General description | The aim of this course is to prepare the students to handle the methods, techniques and tools that are needed for the elaboration and management of technical documents in the industrial field of Engineering. |          |      |            |

It will also be sought to develop skills in the handling of information and communication technologies related to the professional field of the student's degree.

Furthermore, the student skills to communicate properly the knowledge, procedures and results in the Industrial Engineering field will be strengthened.

An essentially practical approach will be used, based in the solution of specific application exercises -with guidance of the subject's lecturer- that will require to apply the theoretical contents of the course.

## Skills

|      |  |
|------|--|
| Code |  |
| B3   | CG3 Knowledge in basic and technological subjects that will enable them to learn new methods and theories, and equip them with versatility to adapt to new situations. |
| C18  | CE18 Knowledge and skills to organize and manage projects. Know the organizational structure and functions of a project office.  |
| D2   | CT2 Problems resolution.   |
| D3   | CT3 Oral and written proficiency in the own language.  |
| D5   | CT5 Information Management.  |
| D6   | CT6 Application of computer science in the field of study.   |
| D7   | CT7 Ability to organize and plan.  |
| D8   | CT8 Decision making.   |
| D9   | CT9 Apply knowledge.   |
| D10  | CT10 Self learning and work.   |
| D11  | CT11 Planning changes to improve overall systems.  |
| D13  | CT13 Adaptability to new situations.   |
| D14  | CT14 Creativity.   |
| D15  | CT15 Objectification, identification and organization.   |
| D17  | CT17 Working as a team.  |
| D18  | CT18 Working in an international context.  |
| D20  | CT20 Ability to communicate with people not expert in the field.   |

## Learning outcomes

| Expected results from this subject   | Training and Learning Results |     |     |
|--|-------------------------------|-----|-----|
|  | B3                            | C18 | D2  |
| Utilization of methodologies, technics and tools for the organization and management of all technical documents other than engineering projects. |                               |     | D7  |
|  |                               |     | D8  |
|  |                               |     | D9  |
|  |                               |     | D10 |
|  |                               |     | D14 |
|  |                               |     | D15 |
|  |                               |     | D17 |
| Skills in the utilization of information systems and in the communications in the industrial scope.  |                               |     | D5  |
|  |                               |     | D6  |
|  |                               |     | D9  |
|  |                               |     | D11 |
|  |                               |     | D17 |
| Skills to communicate properly the knowledge, procedures, results, abilities in the field of Engineering in Industry.                            |                               |     | D3  |
|  |                               |     | D13 |
|  |                               |     | D17 |
|  |                               |     | D18 |
|  |                               |     | D20 |

## Contents

| Topic   |   |
|---|---|
| 1. Types of usual documents in the distinct fields of the professional engineering activities.  | 1.1. Technical documents: Characteristics and components.<br>1.2. Types of technical documents according to their contents.<br>1.3. Types of technical documents according to their recipients and objectives.  |
| 2. Methodology for writing and presenting technical documentation: assessments, valuations, expert reports, studies, reports, dossiers and other similar technical works. | 2.1. General aspects in elaborating and presenting technical documentation.<br>2.2. Elaboration of technical reports.<br>2.3. Elaboration of technical studies.<br>2.4. Elaboration of assessments, expert reports and valuations.<br>2.5. Elaboration of dossiers and other technical works.<br>2.6. Technical work in concurrent and/or collaborative engineering environments. |
| 3. Techniques for research, analysis, evaluation and selection of technological information.  | 3.1. Typology of technological information.<br>3.2. Sources of technological information.<br>3.3. Information and communications systems.<br>3.4. Techniques for information research.<br>3.5. Methods for analyzing information.<br>3.6. Evaluation and selection of information.  |
| 4. Laws and regulations about documentation.  | 4.1. Applicable laws to technical documentation according to its specific field.<br>4.2. Other applicable regulations.  |
| 5. Processing of technical documentation.   | 5.1. Processing at Government Offices of technical documentation.<br>5.2. Legitimization and responsibilities in the processing of documentation before Government's Offices.<br>5.3. Processing of documentation: Concepts, procedures and specifics.  |
| 6. Presentation and verbal defence of technical documents.  | 6.1. Regulations in the elaboration of technical presentations.<br>6.2. Preparation for the verbal defence of technical documents.<br>6.3. Techniques and specific tools for the performance of public presentations.   |

## Planning

|                                 | Class hours | Hours outside the classroom | Total hours |
|---------------------------------|-------------|-----------------------------|-------------|
| Lecturing                       | 29.5        | 44.25                       | 73.75       |
| Laboratory practical            | 29.5        | 44.25                       | 73.75       |
| Laboratory practice             | 1.3         | 0                           | 1.3         |
| Problem and/or exercise solving | 1.2         | 0                           | 1.2         |

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

## Methodologies

Description

|                      |   |
|----------------------|---|
| Lecturing            | Presentation by the lecturer of the contents of the topic to be studied, the theoretical bases and/or guidelines of a specific work, exercise or project to be developed by the student.  |
| Laboratory practical | Activities that require applying theoretical knowledge to specific situations in order to acquire basic and procedural skills related to the topic that is being studied.<br>These activities will be developed in special spaces with specific equipment (laboratories, computer rooms, etc.). |

### Personalized assistance

| Methodologies        | Description   |
|----------------------|---|
| Laboratory practical | Activities oriented to the application of knowledge to specific situations, and to acquire basic and procedural skills related to the field of study. Rooms equipped with specific materials and resources will be used for these classes. An appropriate follow-up will be performed on student's work to verify that the best practices shown in theory classes are applied, and that the procedural recommendations provided by the lecturer are followed. For all the teaching modalities considered in the Contingency Plan, the tutorial sessions can be carried out using IT tools (email, video-call, FAITIC forums, etc.) according to the modality of prior concertation of the virtual place, date and time. |

### Assessment

|                                 | Description   | Qualification | Training and Learning Results |     |    |    |    |    |    |     |     |     |     |     |     |     |     |
|---------------------------------|---|---------------|-------------------------------|-----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Laboratory practical            | Interdisciplinary exercises and problems -as close to real cases as possible- will be solved in groups of students, with lecturer orientation and enforcing active participation by the students. | 55            | B3                            | C18 | D2 | D3 | D5 | D7 | D8 | D9  | D10 | D13 | D14 | D15 | D17 | D18 | D20 |
| Laboratory practice             | Making of practical tests and exercises related to the subject's contents, in the scope of the personalised attention to students.  | 20            | B3                            | C18 | D2 | D3 | D5 | D7 | D8 | D9  | D10 | D13 | D14 | D15 | D17 | D18 | D20 |
| Problem and/or exercise solving | Groups of short answer questions related to the subject's contents, to check that the students have understood and assimilated the theoretical and practical contents.                            | 25            | B3                            | C18 | D2 | D3 | D7 | D8 | D9 | D11 | D14 | D15 |     |     |     |     |     |

### Other comments on the Evaluation

Assessment of student's work - individually and/or in groups, either face-to-face or non-presential - will be carried out by the lecturer by weighting appropriately the different marks obtained in the activities that were proposed along this course.

Students may opt to follow this course either in the 'Continuous Evaluation' or in the 'Non-Continuous Evaluation' modalities. In both cases the grading of the course will be made according to a numerical system, using values from 0,0 to 10,0 points according to the current laws that are applicable (R.D. 1125/2003 of 5th September, BOE Nr. 224 of 18th September). A minimum overall mark of 5,0 is required to pass this course.

For the First Announcement or Edition.

a) 'Continuous Evaluation' modality:

The final mark for the course will be calculated by combining the individual marks awarded in the assessment of the works proposed and elaborated in the practical classes (60% weight) along the term, with the mark awarded for the final test performed in the date stated by the School's Ruling (40% weight).

These marks will assess the behaviour and the implication of the student both in class and in the realisation of the different programmed activities, plus the fulfillment of the deadlines for submitting the works that were proposed, and/or the presentation and defence of those works, etc.

Students not reaching the minimum value of 3,5 points out of 10 that are required for every section, they will either need to perform also the assessment in the Second Announcement date, or to elaborate additional works or practical exercises to achieve the learning goals that were established for the concerned sections.

b) 'Non-Continuous Evaluation' modality:

There is a two weeks time term after the starting date of the course for the concerned students to justify with documents that it is not possible for them to follow the regular process of continuous evaluation.

In order to pass this course, students renouncing to continuous evaluation will be obliged to perform a final test covering the whole contents of the course, both theoretical and practical, including short questions, reasoning questions, problem solving and development of practical cases. The mark awarded to the student assessment will be the final mark for the course.

A minimum mark of 5,0 points out of 10,0 possible will be required to pass the course.

For the Second Announcement or Edition.

Students who did not pass the course in the First Announcement, but that could have passed some specific parts of the theory or practical blocks, will be allowed to be assessed only regarding the failed parts, keeping the marks formerly awarded for the parts already passed, and applying the same assessment criteria to them.

Students wishing to improve their qualification, or students that failed the course on the First Announcement, will need to assist to the Second Announcement, where they will be assessed about the whole contents of the course, both theoretical and practical, including short questions, reasoning questions, problem solving and development of practical cases. Students are required to reach a minimum mark of 5,0 points out of 10,0 possible to pass the course.

**Ethical commitment:**

It is expected an adequate ethical behaviour of the student. In case of detecting unethical behaviour (copying, plagiarism, unauthorized use of electronic devices, etc.) shall be deemed that the student does not meet the requirements for passing the subject. In this case, the overall rating in the current academic year will be Fail (0.0).

The use of any electronic device for the assessment tests is not allowed unless explicitly authorized. The fact of introducing unauthorized electronic device in the examination room will be considered reason for not passing the subject in the current academic year and will hold overall rating (0.0).

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**Sources of information**

**Basic Bibliography**

Aguado, David, **HABILIDADES PARA EL TRABAJO EN EQUIPO: PROGRAMA DE ENTRENAMIENTO**, 1ª, Ediciones Universidad Autónoma de Madrid, 2008

Álvarez Marañón, Gonzalo, **EL ARTE DE PRESENTAR: CÓMO PLANIFICAR, ESTRUCTURAR, DISEÑAR Y EXPONER PRESENTACIONES**, 1ª, Gestión 2000, 2012

Lannon, John M. and Gurak, Laura J., **TECHNICAL COMMUNICATION**, 13th, Pearson, 2013

Pringle, Alan S. and O'Keefe, Sarah S., **TECHNICAL WRITING 101: A REAL-WORLD GUIDE TO PLANNING AND WRITING TECHNICAL CONTENT**, 1st, Scriptorium Publishing Services, 2009

**Complementary Bibliography**

BIBLIOGRAFÍA BÁSICA: -----, -----,

Blair, Lorrie, **WRITING A GRADUATE THESIS OR DISSERTATION**, 1st, Sense Publishers, 2016

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Budinski, Kenneth G., **ENGINEER'S GUIDE TO TECHNICAL WRITING**, 1st, ASM International, 2001

Pease, Allan, **ESCRIBIR BIEN ES FÁCIL: GUÍA PARA LA BUENA REDACCIÓN DE LA CORRESPONDENCIA**, 1ª, Amat, 2007

BIBLIOGRAFÍA COMPLEMENTARIA: -----, -----,

Balzola, Martín, **PREPARACIÓN DE PROYECTOS E INFORMES TÉCNICOS**, 2ª, Balzola, 1996

Boeglin Naumovic, Martha, **LEER Y REDACTAR EN LA UNIVERSIDAD: DEL CAOS DE LAS IDEAS AL TEXTO ESTRUCTURADO**, 1ª, MAD, 2007

Calavera, J., **MANUAL PARA LA REDACCIÓN DE INFORMES TÉCNICOS EN CONSTRUCCIÓN: INFORMES, DICTÁMENES, ARBITRAJES**, 2ª, Intemac, 2009

Córcoles Cubero, Ana Isabel, **CÓMO REALIZAR BUENOS INFORMES: SORPRENDA CON INFORMES CLAROS, DIRECTOS Y CONCISOS**, 1ª, Fundacion Confemetal, 2007

García Carbonell, Roberto, **PRESENTACIONES EFECTIVAS EN PÚBLICO: IDEAS, PROYECTOS, INFORMES, PLANES, OBJETIVOS, PONENCIAS, COMUNICACIONES**, 1ª, Edaf, 2006

Himstreet, William C., **GUÍA PRÁCTICA PARA LA REDACCIÓN DE CARTAS E INFORMES EN LA EMPRESA**, 1ª, Deusto, 2000

Sánchez Pérez, José, **FUNDAMENTOS DE TRABAJO EN EQUIPO PARA EQUIPOS DE TRABAJO**, 1ª, McGraw-Hill, 2006

Williams, Robin, **THE NON-DESIGNER'S PRESENTATION BOOK**, 1st, Peachpit Press, 2009

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## Recommendations

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### Subjects that it is recommended to have taken before

Graphic expression: Fundamentals of engineering graphics/V12G320V01101

Technical Office/V12G320V01704

### Other comments

Previously to the realisation of the final assesments, students should check in the FAITIC platform to know whether it is necessary for them to carry any particular documentation, materials, etc. into the exam room to perform the tests.

It is necessary that the student registered in this course, either has passed all courses of the former years, or is registered in the courses he's not passed yet.

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## Contingency plan

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### Description

In the face of the uncertain and unforeseeable evolution of the health alert caused by COVID-19, University of Vigo has established an exception planning that will be activated at the time the government offices and the own University mandate it. Such decision will be made based on safety, health and responsibility criteria, always guaranteeing the continuity of the teaching processes in a partial or full non-classroom scenario. Those already-planned steps will guarantee, at the moment it is required, the development of the teaching processes in a more streamlined and effective way as both the students and the lecturers will know about them beforehand (or with a broad anticipation), by means of the DOCNET standard institutional tool.

According to the instructions provided by the Vice-Rectorate for Learning Organization and Teaching Staff, the following three scenarios are required to be taken into account with their corresponding contingency level:

SCENARIO 1. Full-classroom modality.

All teaching activities will be carried out at the classroom, both for theory and laboratory classes, according to the typical way for the course in the years before 2020.

SCENARIO 2. Half-classroom modality.

In the case the half-classroom teaching modality is activated by the University government, such event will involve a reduction in the capacity of the usual teaching spaces where the full-classroom modality is developed. Because of that, as a first measure the School will provide the teaching staff of the course with the information regarding the new authorized capacities for such teaching spaces so that the teaching activities can be re-organized for the remaining time of the term. It must be pointed out that the necessary re-organization to implement will depend on the specific moment in the term in which this teaching modality is activated. The following guidelines will be followed in the re-organization or the teaching activities:

a) Communication. All students in the course will be informed through the FAITIC teaching portal on the specific conditions for the development of the teaching and the evaluation activities that remain until the end of the term.

b) Adaptation of the tutorial and personalized attention to students. The tutorial sessions may be carried out by means of IT tools (email, video-call, FAITIC forums, etc.), according to the modality of prior concertation of the date and time for the session in the lecturers' virtual offices.

c) Classroom and non-classroom activities. From the teaching activities that remain until the end of the term, those that could be carried out by all students in class need to be identified (prioritizing laboratory activities when possible), and those other that will be carried out remotely (theory classes are the ones that usually decrease in effectiveness less in this modality), to the effects of the planning of its efficient performance.

d) Teaching contents and learning goals. There will be no changes neither in the contents to be taught nor in the learning goals, as a consequence of this teaching modality.

e) Teaching schedule. The class timetable and the calendar of the different activities in the course will be maintained as initially planned and scheduled.

f) Bibliography or additional materials to facilitate self-learning. The teaching staff for the course will provide the students with the necessary learning materials to attend to the specific help needs of the students with respect to the course, according to the circumstances that turn out at any particular time, through the FAITIC portal.

With regard to the tools used for the teaching activities in the non-classroom modality, the CAMPUS REMOTO and FAITIC portals will be of preferential use, complemented if necessary with other solutions in order to address specific needs arising along the lecturing period.

### SCENARIO 3. Non-classroom modality.

In the case the full non-classroom modality (discontinuation of all on-class learning and evaluation activities) is activated, the tools offered by the platforms currently available at University of Vigo -CAMPUS REMOTO and FAITIC- will be of preferential use. The specific conditions for the re-organization to be carried out will depend of the particular time in the term in which such modality is mobilized. The following guidelines will be followed in the re-organization of the teaching activities:

a) Communication. All students in the course will be informed through the FAITIC teaching portal on the specific conditions for the development of the teaching and the evaluation activities that remain until the end of the term.

b) Adaptation and/or modification of the teaching methodologies. Even if the teaching methodologies for the course were fundamentally conceived towards the full-classroom modality, the teaching staff considers that they keep in essence their effectiveness in the non-classroom modality. That is why it is proposed to keep them as they are, even if special attention will be paid to their right development and results. Therefore, no changes will be made to the teaching methodologies initially defined for the course.

c) Adaptation of the tutorial and personalized attention to students. The tutorial sessions may be carried out by means of IT tools (email, video-call, FAITIC forums, etc.), according to the modality of prior concertation of the date and time for the session in the lecturers' virtual offices.

d) Teaching contents and learning goals. There will be no changes neither in the contents to be taught nor in the learning goals, as a consequence of this teaching modality.

e) Teaching schedule. The class timetable and the calendar of the different activities in the course will be maintained as initially planned and scheduled.

f) Evaluation. No changes will be made neither to the evaluation tests, nor to their corresponding score weights, nor to their set dates.

g) Bibliography or additional materials to facilitate self-learning. The teaching staff for the course will provide the students with the necessary learning materials to attend to the specific help needs of the students with respect to the course, according to the circumstances that turn out at any particular time, through the FAITIC portal.

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