

Academic Year/course: 2021/22

## 28846 - Technical english

### Syllabus Information

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**Academic Year:** 2021/22

**Subject:** 28846 - Technical english

**Faculty / School:** 175 - Escuela Universitaria Politécnica de La Almunia

**Degree:** 424 - Bachelor's Degree in Mechatronic Engineering

**ECTS:** 6.0

**Year:** 4

**Semester:** Second semester

**Subject Type:** Optional

**Module:**

## 1. General information

### 1.1. Aims of the course

The subject and its expected results respond to the following approaches and goals: The subject of Technical English for Mechatronic Engineering lies within the framework of teaching English for Specific Purposes, which integrates the teaching of the English language and the specific contents of the profession with a student-based approach. The course is taught in English and starts from level B1 (European framework). Tasks are practiced in class, most of them in pairs or small groups to encourage collaborative work. The activities are corrected in class or delivered for later correction.

The specific goals of the subject are:

- ? Introducing English through the discursive, rhetorical and linguistic functions of the scientific-technical record.
- ? Getting Familiar with the genres, techniques and academic conventions used by the Engineering scientific-technical community which reflect the future needs of the profession.
- ? Developing linguistic competence in written and oral English in contexts of communication linked to the academic environment.
- ? Improving reading comprehension skills to understand and critically interpret technical texts of medium difficulty.
- ? Writing different types of text, which respond to various needs and are used in professional communication of the discipline.
- ? Promoting the expression of ideas, opinions, agreements and disagreements in formal situations, in professional and academic contexts.
- ? Extending the oral expression of the student to communicate in an academic and professional exchange environment
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- ? Promoting self-learning and continuous training.

These approaches and objectives are in line with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>), in such a way that the acquisition of the course learning outcomes provides training and competence to contribute to their achievement to some degree:

1. End Poverty
4. Quality Education
5. Gender Equality
6. Clean water and Sanitation
7. Available, Non-polluting Energy
11. Self-sufficient communities and cities
13. Climate Change

### 1.2. Context and importance of this course in the degree

Taking into account the role that the English language represents today in the international context, its knowledge and use is essential in the overall formation of the student. Since English is the lingua franca of communication, congresses and publications, the subject offers a tool that will allow students to access academic and technical information about any other subjects of their Degree. This will result in a more complete training that will make them better professionals.

### 1.3. Recommendations to take this course

In order to take this course, students should have a B1 level of English according to the Common Reference European Framework for languages.

## 2. Learning goals

### 2.1. Competences

#### GENERAL COMPETENCES

GI03: Knowledge in basic and technological issues, which enables them to learn new methods and theories, and provides them with versatility to adapt to new situations.

GI10: Ability to work in a multilingual and multidisciplinary environment

GC03: Ability for abstraction and critical thinking.

GC04: Ability to learn in a continuous, self-directed and autonomous way.

GC05: Ability to evaluate alternatives

GC07: Ability to lead a team as well as to be a committed member of it.

GC08: Ability to spot technical information, as well as its understanding and assessment.

GC11: Ability to communicate their ideas and designs clearly to specialized and non-specialized audiences.

GC19: Knowledge and skills to make use of English.

#### SPECIFIC COMPETENCES

Upon completion of the course, the student will be more competent to ...

1: Read and understand different types of English texts needed in their professional activity, for example, reports and technical documentation, specialized articles, instructions.

2: Write different types of English texts that respond to different needs and that are used in the Professional communication in the career: informative texts, texts describing processes and procedures, evaluative texts, argumentative texts.

3: Use communicative strategies to participate in conversations in work situations.

4: Read and understand specialized literature in English related to the career.

5: Maintain business correspondence in English.

6: Recognize the type of language appropriate for different types of technical communication texts in their career.

7: Understand oral presentations of projects in English.

8: Plan, prepare and deliver oral presentations of projects in English.

9: Develop strategies for finding information and reading online texts.

### 2.2. Learning goals

The student, to succeed in this subject, must demonstrate the following results...

1: Consolidating the competences at B1 level according to the Common European Framework of Reference for Languages

2: Using the essential vocabulary necessary for the development of professional activities related to the Professional Training and the planning and management of English Language operations and processes.

3: Understanding and interpreting texts in English with specific content related to the field of Building, Engineering and Management.

4: Writing documents relevant to their professional field, both formal and informal, using lexicon, structures and appropriate rhetorical and textual techniques.

5: Making oral presentations on subjects of their degree (With fluency and grammatical and terminological correctness)

6: Communicating orally in the English language, with special emphasis on the use of the lexicon and procedures In multinational settings and participating in other oral interactions in their professional environment, such as negotiations and telephone conversations, understanding their interlocutors, although sometimes with effort, and expressing themselves clearly and with reasonable accuracy.

### 2.3. Importance of learning goals

The convergence towards a European Higher Education Area and the labor market that future graduates will have to face requires students to be able to use English in various social and professional contexts. They will need access to specialized English material (for example, written information, talks, presentations and conferences); Participate in mobility programs and international projects related to their discipline and participate in academic activities (such as attendance at conferences, publication of articles or preparation of oral presentations) not only during their university studies, but with continuity once completed.

## 3. Assessment (1st and 2nd call)

### 3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

#### Assessment activities

The student must demonstrate that he / she has achieved the expected learning outcomes via the following assessment activities

#### 1: Continuous assessment.

The credits of this subject can be obtained in a double way: on the one hand, via continuous assessment and on the other, via a final exam. To access the continuous assessment, the following points must be taken into account:

- \* Attendance is required for a minimum of 80% of the lectures. If this percentage is not reached, the right to continuous assessment will be lost.
- \* Absences will only be excused for medical reasons with presentation of the corresponding official certificate.
- \* Participation in class is obligatory to access the continuous assessment system.
- \* It will be necessary to hand in some activities
- \* Opportunities for extra credits will be offered on a voluntary basis.
- \* The continuous assessment program will be validated by conducting a series of tests on the four basic language skills (reading, listening, writing and speaking) throughout the course. Students must show their proficiency at B1 level in all previous skills.
- \* Assessment tests will be held every two weeks, during class time.
- \* The listening and speaking marks will be taken from the activities done during the lessons.
- \* The assessment tests can be done in different times or dates in case of absence due to illness or other reasonable reasons
- \* The final grade will be obtained from the marks in the different tests carried out, as well as the activities handed in.
- \* Students will have the right to take the final exam if they have not passed the tests during the course, as well as at the June or September calls.

#### 2: Final assessment.

Students who do not follow the continuous assessment, or the ones who have not passed, or who wish to improve their grades, may take a final test that will take place in the official calls. There will be a final written exam to assess the student in the four skills: listening, speaking, reading and writing. Students must demonstrate their proficiency at B1 level in all previous skills.

## 4. Methodology, learning tasks, syllabus and resources

### 4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. It is based on Project based learning and flipped classroom, which favor the development/acquisition of the intended competences . A wide range of teaching and learning tasks are implemented, such as theory and practice sessions, autonomous work and study, and tutorials.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials, including a discussion forum.

Further information regarding the course will be provided on the first day of class.

*"If classroom teaching were not possible due to health reasons, it would be carried out on-line."*

### 4.2. Learning tasks

This is a 6 ECTS course organized as follows:

- **Theory and practice sessions** (4 ECTS: 40 hours) Theoretical concepts of the course will be explained and practical examples to support the theory developed. **Conversation Practice:** Students will be divided into pairs or small groups and will be supervised by the teacher.
- **Autonomous work and study** (1.5 ECTS: 15 hours) Study and assimilation of the theory presented in the lectures.
  - Organization of seminars, solving suggested problems, etc.
  - Studying written continuous assessment tests and final exams.
  - **Support activities:** Mainly, through a virtual learning portal (Moodle) different activities that reinforce the basic contents of the course will be made. These activities can be customized or not, being monitored through the above mentioned virtual portal.
- **Assessment tasks** (0.5 ECTS: 5 hours)

### 4.3. Syllabus

This course will address the following topics:

**1 Engineering Services.** Water Systems Services. Project Management. Manufacturing Engineering. Applying for a Job in Electrical Engineering. Applying for a Job in Mechanical Engineering. **Writing:** Creating a Resume (Resume). Writing a Cover Letter for a Resume. Guided Writing (Letter). **Oral Practice:** Describing Your Company (Role-Play). Practising Interview Skills (Role-Play)

**2 Defining Objectives.** Feasibility Studies. CAD (Computer-aided Design). Drafting. Comparing Engineering Systems. A Presentation to a Client. **Writing:** Reporting on the Progress of a Project ? Guided Writing (E-mail). Creating a Presentation (Presentation) **Oral Practice:** Choosing an Engineering System (Group Activity) Describing a Site Plan (Pair Work).

**3 Materials and Their Properties.** Ferrous Metals. Non-ferrous Metal. Synthetic Polymers. Concrete. **Writing:** Writing a Meeting Notification? Guided Writing (E-mail). Writing a Meeting Summary (Summary). **Oral Practice:** Choosing a Metal (Pair Work). Choosing Materials for a Project (Group Activity)

**4 Forces.** Lift, Drag, and Torque. Compression, Tension, Load, and Shear. Thrust and Measuring Methods. Turbulence. **Writing:** Suggesting Changes to Engineering Processes (E-mail) Summarizing and Confirming Transactions ? Guided Writing (Letter). **Oral Practice:** Describing Diagrams (Class Activity). Solving Engineering Problems (Group Activity)

**5 Systems and Mechanisms.** Hydraulic Systems. Pneumatic Systems. Mechanical Systems. Robotic Systems. Electrical Systems. Mechanisms: Gears. Mechanisms: Engines. Mechanisms: Cams and Camshafts. **Writing:** Writing A Cover Letter for a Status Report ? Guided Writing (Letter). Taking Notes (Notes). **Oral Practice:** Describing Diagrams (Pair Work). Reporting Project Status and Providing Feedback (Role-Play)

**6 Giving Instructions:** Assembly Instructions. Disassembly Instructions. Maintenance Instructions. Troubleshooting. **Writing:** Writing a Meeting Agenda (Agenda). Writing Instructions (Instructions): **Oral Practice:** Giving Instructions (Pair Work). Defining Words (Pair Work)

**7 Measurements:** Taking Measurements. Calibrating the Equipment. Clean Room Sensors. Industrial Sensors. **Writing:** Informing Clients of a New Service ? Guided Writing (E-mail). Providing Information on Flow Sensors (E-mail). **Oral Practice:** Giving Advice about Sensors (Role-Play). Reporting on Measurements (Role-Play)

**8 Safety:** Discussing Safety Procedures. Hazard Analysis and Management. Tool Usage. Reporting Safety Incidents. First-aid Instructions. **Writing:** Filling out a Safety Incident Report (Repost). Writing a Memo about Safety Issues ? Guided Writing (Memo). **Oral Practice:** Giving Safety Instructions (Role-Play). Performing Hazard Analyses (Role-Play)

**9 Quality Management:** Performance Specifications. Testing. Quality Analysis. Documentation. Quality Audits and Certifications. System Support. Engineering Ethics. **Writing:** Writing to the Engineering Ethics Committee ? Guided Writing (Letter). Refusing to Provide a Product or Service ? Guided Writing (Letter). **Oral Practice:** Explaining the Quality Certification Process (Role-Play). Discussing Performance Specifications (Role-Play)

**10 Green Engineering:** Alternative Fuels in Industry. Energy Efficiency in Production. Industrial Recycling. Waste Management. Winning an Award in Green Engineering. **Writing:** Writing to Potential Clients (Letter). Writing a Presentation (Presentation). **Oral Practice:** Debating Alternative Fuels (Class Activity). Solving Problems on a Living Building Project (Group Activity)

### 4.4. Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the EUPLA website

### 4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=28846>