UAB
Universitat Autònoma de Barcelona

Ethics for Engineering

2026/2027

Code: 103817
Credits: 3

Degree programme	Type	Course
Aeronautical Management	OB	2

Contact lecturer

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Group languages

You can consult this information at the end of the document.

Prerequisites

There are none.

Objectives

In the subject, the guidelines are offered to discover and manage the social implications and the polyvalence of technology. Initially, the basic concepts related to morality, ethics and responsibility are introduced. It shows how professional practice expresses the importance of analysis in decision making in order to recognize complex situations and assess the consequences of possible alternatives. It presents the fundamental ethical frameworks, the deontological codes associated with the professions and the global commitments for a fair, peaceful and sustainable human development.

Learning outcomes

- CM10 (Work on the social, ethical and professional responsibility of professional practice in the field of aeronautical management.) Work on the social, ethical and professional responsibility of professional practice in the field of aeronautical management.
- CM11 (Exercise roles in a work team, without sex/gender-based differentiation.) Exercise roles in a work team, without sex/gender-based differentiation.
- KM16 (Describe the fundamental concepts of the ethics, professional responsibility and deontological framework in this field.) Describe the fundamental concepts of the ethics, professional responsibility and deontological framework in this field.
- KM18 (Identify basic processes for carrying out a project, including knowledge of the tools and techniques necessary managing the work, focused on the optimisation of operational processes and management systems in the aviation sector.) Identify basic processes for carrying out a project,

including knowledge of the tools and techniques necessary managing the work, focused on the optimisation of operational processes and management systems in the aviation sector.
- SM17 (Resolve ethical conflicts present in the management of air transport activities.) Resolve ethical conflicts present in the management of air transport activities.

Contents

The subject introduces what are the main points of view about technology and what responsibility professionals have regarding the exercise of their profession. The main ethical frameworks that can help us in the analysis of situations where ethical conflicts appear are presented. It describes how ethics is focused on technical studies and how deontological codes have been established in different professions related to engineering. Cases of conflicting areas are studied to identify the consequences of possible courses of action. The topics are structured as follows:

1 FUNDAMENTAL ELEMENTS OF ETHICS

1.1 Importance of Ethics and critical thinking in the professional world

1.2 Some studies that support the importance of Ethics and critical thinking.

1.3 Concept, origins and elements that make it up

1.4 Foundations and relations with other disciplines

1.5 Moral relativism

1.6 Ethical theories,

1.7 Areas of ethics. Applied ethics

2 ETHICS APPLIED TO SCIENCE AND TECHNOLOGY

2.1 Exploring Neutrality in Science and Technology

2.2 Instrumentalrationality

2.3 Technology Assessment

2.4 Moral responsibility in science and technology

2.5 Duties derived from science and technology

3 PROFESSIONAL ETHICS

3.1 Features and dimensions of the professions. Professional liability.

3.2 Codes of ethics and professional ethics

3.3 Conflicts between standards

3.4 Conflicts of interest

3.5 Ethics in research

4 GLOBAL DIMENSION OF DEVELOPMENT

4.1 Ecological and social crisis

4.2 Sustainable development

4.3 Globalization

4.4 Economy and sustainability

4.5 2030 Agenda: opportunities and limits

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Study	14	0.56	CM10, KM16, SM17
Study for the final exam	4	0.16	CM10, KM16, KM18, SM17
Practices	18	0.72	CM10, CM11, KM16, KM18, SM17
Lectures	13	0.52	CM10, CM11, KM16, KM18, SM17
Seminars	6	0.24	CM10, SM17
Practices	6	0.24	CM10, CM11, SM17

Case of study presentation	8	0.32	CM10

The subject consists of a theoretical part, a practical part, and a personal work part of the student.

A total of 25 face-to-face hours are taught for the student, which are distributed as shown in the table of training activities. The total dedication of the student is 75 hours, therefore, there is a non-face-to-face dedication of 50 hours.

TRAINING ACTIVITIES

Theory sessions

Lectures where the group develops the basic contents that the student must need to introduce himself to the topics that make up the program. At the same time, possible ways to complete or deepen the information received in these sessions may be indicated. During these classes, group learning activities can be carried out in which the participation of all students will be requested.

Practice sessions

Team activities where cases of conflicts or ethical challenges are studied using the concepts seen in theory. Based on the dialogue in the group, the different courses of action that the case allows and the foreseeable consequences are proposed. The teams prepare a presentation in which the case is presented to the rest of the students, the actions considered and the conclusions reached are described. At the beginning of the presentation, a written report is given summarizing the presentation.

Seminar sessions/debates/problems

In these sessions, an academic paper or a topic that everyone has had the opportunity to read and analyze beforehand is reviewed together. The objective is to induce active participation through the proposal, criticism, or reasoned defense, of options to be followed or measures to be adopted. Dialogue groups may be formed that will have to present the analyzed text from an ethical perspective.

Annotation: within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Final exam	0,4	1	0.04	CM10, KM16, KM18, SM17
Classroom activities	0,3	4	0.16	CM10, CM11, KM16, KM18, SM17
Practices	0,3	1	0.04	CM10, CM11, KM16, SM17

Evaluation

Both the knowledge acquired in relation to the objectives set in the subject and the degree to which the skills and competences to be developed have been achieved will be taken into account.

a) Scheduled evaluation process and activities

The subject consists of the following assessment activities:

- Activity A (practice 1), Presentation of a practical case, worth 25% of the final grade.

This activity will involve an oral presentation and the presentation of a report. You will have to make groups of between 3 and 6 people during the first week of the course. The limit of students per group will depend on the number of students enrolled. It is very important to form groups during the first week. In the third week everyone will have to submit the report and the presentations will begin. The details of the assigned topics will be given on the first day of class and on the Virtual Campus.

- Activity B, (practice 2), Tests on readings, worth 25% of the final grade.

During week 8, 9, 10 or 11 if the calendar allows it, we will do a test, about a reading about an article or book that talks about Ethics. The reading will be specified on the Virtual Campus.

- Activity C, Final synthesis test, worth 50% of the final grade.

It is an exam that will cover the four topics of the course and the practices presented by the students.

- Activity D, Class participation, worth 10% on the final grade.

To qualify for this grade, you cannot miss more than 20% of all class hours. Receipts for illness or other personal reasons are not exempt from this requirement. Active participation in debates, attendance, etc. will be valued. If you get a 0 you can perfectly get a 10 in the subject, but it can help to pass the subject or get Honors.

The final grade that will appear in the transcript will be calculated according to the following formula:

Final grade (maximum 10) = A·25 % + B·25 % + C·50 % + D·10 %

In order to pass the subject through continuous assessment, it will be necessary to obtain a grade equal to or greater than 50% in activities A (practice 1) and B (practice 2), a grade equal to or greater than 40% in activity C and a final grade equal to or greater than 5.

In the event of not meeting any of these requirements, the grade that will appear in the academic record will be the lowest of all.

Activities A (practice 1) and B (practice 2) are non-recoverable, so obtaining a grade of less than 50%, means not passing the subject through continuous assessment and you cannot take the C test, but you can still pass the subject in the retake.

The grade of participation in class D can be previously added to grades A, B and C to achieve these requirements.

Example 1: Reading Grade: 1 (out of 2.5) Submission mark: 1 (out of 2.5) Participation mark: 0.5 (out of 1)

→ You can apply because you can add 0.5 for participation, 0.25 to the first grade and 0.25 to the second to pass the requirements.

Example 2: Reading Grade: 1 (out of 2.5) Submission mark: 1 (out of 2.5) Participation mark: 0.25 (out of 1)

→ You cannot apply because you can only add 0.25 to one of the two grades, and it is not enough to pass the other requirement.

b) Programming of evaluation activities

The calendar of evaluation activities will be given on the first day of the subject, whenever possible and will be made public through the Virtual Campus. The following calendar is planned:

- Activity A:

Week 1: Create groups.

week 2-3: Group work; Make a report.

Week 4 to 16: Presentations of each group (1 day); Go to classmates' presentations (every day)

- Activity B:

week 8, 9, 10 or 11: Control.

- Activity C:

At the end of the course during the evaluation calendar.

At the end of the evaluations, during the recovery calendar.

c) Recovery process

The student has the right to a retake of the final exam, if he has not passed the subject in the continuous assessment. The grades obtained in the continuous assessment of activities A, B and D will be maintained. Only activity C, the Final Synthesis Test, will be recovered. The grade will be calculated with the same percentages as the continuous assessment. However, it will no longer be necessary to obtain a grade equal to or greater than 50% in activities A (practice 1) and B (practice 2). In test C, a grade equal to or greater than 40% must still be obtained. In any case, in the reassessment the grade in the transcript will be a maximum of 7.

Example: A student who has 0 in activities A, B and D can pass the subject with a final grade of 5 if he obtains a 10 in the recovery of the C.

d) Procedure for reviewing grades

For each evaluation activity, a place, date and time of revision will be indicated in which students can review the activity with the teacher. In this context, claims may be made about the grade of the activity, which will be evaluated by the teaching staff responsible for the subject. If the student does not appear for this review, this activity will not be reviewed later

e) Qualifications

- Honors enrolments. With regard to honours, the UAB regulations will be followed. Specifically:

"6. The honours mention may be awarded to the student who has a grade equal to or greater than 9.0. The number of honours awarded may not exceed 5% of the number of people enrolled in a subject or module in the corresponding academic period, except if the total number of people enrolled is less than 20. In this case, only

one honors degree may be awarded. An additional honors may be granted by rounding up the fraction resulting from the application of the 5% of students enrolled in the subject." Apart from the grade obtained, regular attendance at the sessions will be especially valued, as well as the active and enriching participation carried out in the activities.

- A student will be considered a no-show if they have not submitted activity A, B or C.

f) Consequences of irregularities committed by students: copying, plagiarism, etc.

Without prejudice to other disciplinary measures deemed appropriate, and in accordance with the regulations

current academic system, irregularities committed by a student that may lead to a change in grade will be graded with a zero. For example, plagiarism, deception, presenting group work not entirely done by group members (applied to all members, not just those who have not worked), unauthorized use of AI (e.g., Copilot, ChatGPT or equivalents), copying or letting copy an assessment activity, etc., will result in failing the subject with a zero. In this case, the subject will not be recoverable.

g) Evaluation of repeating students

Students with second enrollment will be evaluated in the same way as students enrolling for the first time.

h) Single assessment

This subject does not provide for the single assessment system.

i) Use of AI

For this subject, the use of Artificial Intelligence (AI) technologies is allowed exclusively in support tasks, such as bibliographic or information search, correction of texts or translations, and for the graphic and audiovisual part of the presentations. The student will have to clearly identify which parts have been generated with this technology, specify the tools used and include a critical reflection on how they have influenced the process and the final result of the activity. The non-transparency of the use of AI in this assessable activity will be considered a lack of academic honesty and may lead to a partial or total penalty in the grade of the activity, or greater sanctions in cases of severity.

Bibliography

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Xercavins, Josep; Cayuela, Diana; Cervantes, Gemma i Sabater Assumpta (2005). Desarrollo sostenible. Edicions UPC (access online UPCommons).
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Software

No software is required.

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this link. To access the information, you will need to enter the course CODE

Type of teaching	Group	Language	Semester	Shift
(TE) Theory	11	Catalan	first semester	afternoon
(PAUL) Classroom practices	11	Spanish	first semester	afternoon
(TE) Theory	12	Catalan	first semester	afternoon
(PAUL) Classroom practices	12	Spanish	first semester	afternoon