

Degree programme	Type	Course
Telecommunication Systems Engineering	OP	4
Electronic Engineering for Telecommunication	OP	4

Contact lecturer

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Teaching staff

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Group languages

You can consult this information at the [end](#) of the document.

Prerequisites

None is required for the students of the students of the degree

Objectives

The objectives are that the student acquires the competences related to the management of the quality and the reliability, within the context of the optional matter of Quality and Production. The subject is specifically oriented towards the field of electronic engineering and telecommunication systems. The student must be able to design quality plans and specify and differentiate levels of quality in production processes. In addition, the student can analyze the reliability of systems, design reliability tests and contrast them with specifications of reliability through international standards.

Learning outcomes

1. Specify and apply standard procedures for quality control and design of acceptance plans.
2. Specify, using coloured Petri net formalism, both mandatory standards and all those
3. Manage available time and resources.
4. Prevent and solve problems.
5. Make one's own decisions.
6. Work in complex or uncertain surroundings and with limited resources.
7. Work cooperatively.
8. Develop curiosity and creativity.
9. Generate innovative and competitive proposals in professional activity.
10. Identify and manage the aspects of ethical and professional responsibility in accordance with the

- planning of quality and reliability in electronic or telecommunications systems.
11. Manage, organise and plan standard procedures in specifications and reliability tests in the field of electronics and communications.
 12. Manage available time and resources. Work in an organised manner.
 13. Prevent and solve problems.
 14. Specifying and implementing the standard for quality control and design plans acceptance procedures.
 15. "Specify under the formalism of Colored Petri Nets both mandatory rules, like all those ""recipes"" of production and / or distribution."
 16. Manage, organize and plan standardized specifications and reliability testing procedures in the field of electronics and communications.
 17. Identify those aspects that require decision-making process due among others to the flexibility with which they have been endowed current manufacturing systems.

Contents

Brief description of the contents:

- Quality management in the field of Electronics and Telecommunications
- Statistical process control.
- Design of quality acceptance plans.
- Reliability of simple and complex systems.
- Reliability test design.

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Tutorials	12	0.48	1, 10, 11, 12, 13
Study, problem solving and reporting	74	2.96	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
Practical sessions	9	0.36	1, 10, 11, 12, 13
Exercises	11	0.44	1, 10, 11, 12, 13
Theoretical classes and follow-up in the classroom	22	0.88	1, 10, 11, 12, 15

Classroom teaching along with work to be performed by the student, classroom and home work and practical sessions. The virtual campus and electronic repositories will be used as tools for communication and documentary support.

The use of AI tools is allowed in this course.

For the practical sessions and to do exercises in class, a personal computer is required. In case that a student does not have its own computer, it will be possible to share that of a classmate.

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

Attendance to class and participation. Resolution of exercises at home and in class.	25%	10	0.4	1, 5, 7, 11, 14, 15, 16
1st partial exam	25%	2	0.08	1, 2, 3, 4, 5, 6, 10, 11, 12, 13, 14, 15, 16, 17
Recovery exam	75%	4	0.16	1, 3, 4, 5, 6, 8, 10, 11, 12, 13, 14, 15, 16, 17
Realization and reports of the practical sessions	25%	4	0.16	1, 7, 10, 11, 12, 13
2nd partial exam	25%	2	0.08	1, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 16, 17

a) Scheduled evaluation process and activities

The evaluation of the acquisition of competences by students is done with continuous evaluation, according to these criteria:

- A. First partial exam, half of the semester aprox. (25%)
- B. Second partial exam, towards the end of the semester. (25%)
- C. Realization and reports of the practical sessions. (25%). This is a team activity both for the practical realization and for the report.
- D. Attendance and participation in class as well as resolution of exercises in class and at home (25%)

To pass the course through continuous evaluation, a minimum of 3,5/10 punts en les activitats A i B and global mark of 5/10 punts are required. Activity C is compulsory (impossible to pass the course without it) and not recoverable.

For academic needs, and according to the development of the course, the evaluation procedures may be adjusted by the professor.

b) Programming evaluation activities

The programming of evaluation activities A and B will be made public through the Virtual Campus.

c) Recovery process

The student can apply for the recovery exam provided that he/she has participated in at least 50% of the considered activities (A-C). Activity C is not recoverable.

d) Procedure for review of qualifications

For activities A and B a place, date and time of review will be indicated. Claims may be made on the activity grade, which will be evaluated by the faculty responsible for the subject. If the student does not show up in this programmed review session, no possibility of review will be allowed.

e) Qualifications

The regulations of the UAB indicate that MH can only be granted to students who have obtained a final grade equal to or greater than 9.00. You can grant up to 5% of MH of the total number of students enrolled.

Not Evaluable: A student will be considered not evaluable (NA) if he has not presented in a set of activities the weight of which equals a minimum of two thirds of the total grade of the subject.

Final mark for the evaluable students. To pass it is necessary that the evaluation of each of the parties exceeds the minimum grade required and that the total evaluation, taking into account the weights of each activity, have a grade equal to or greater than 5. In case of not passing the subject, the numerical note of the file will be the lowest value between 4.5 and the weighted average of the notes.

f) Irregularities by the student, copy and plagiarism

Without prejudice to other disciplinary measures deemed appropriate, the irregularities committed by the student that may lead to a variation of the grade of an evaluation act will be scored with a zero. Therefore, copying, plagiarism, cheating, letting copy, etc. in any of the evaluation activities will involve suspending with a zero. The evaluation activities qualified in this way and by this procedure will not be recoverable. If it is necessary to pass any of these evaluation activities to pass the subject, this subject will be suspended directly, without the opportunity to recover it in the same course. The final grade will be that which results from the corresponding weights of each part, but at most a final grade of the subject of 3 points.

h) Evaluation of repeating students

From the second enrollment, the evaluation of the subject will consist of a synthesis test, plus the mark corresponding activity C (with the corresponding weight) obtained the first time the student has enrolled in the subject will be considered. To be eligible for this differentiated evaluation, the repeating student must ask the teacher by email no later than 4 weeks after the beginning of the classes.

This course cannot be evaluated with the system \"avaluació única\".

The proposed teaching and evaluation methodologies may be subjected to modification, depending on possible restrictions imposed by the health authorities on face-to-face attendance.

Bibliography

The Assurance sciences : an introduction to quality control and reliability / Siegmund Halpern	Halpern, Siegmund
Handbook of reliability engineering / Hoang Pham (editor)	--
Handbook of reliability engineering [Recurs electrònic] / Hoang Pham (editor)	--
Infraestructuras comunes de telecomunicaciones para el acceso a los servicios de telecomunicación en el interior de las edificaciones [Recurs electrònic] : Normas UNE y legislación / AENOR	Asociación Española de Normalización y Certificación
Introduction to statistical quality control / Douglas C. Montgomery	Montgomery, Douglas C.
Operations and supply chain management / Roberta S. Russell, Bernard W. Taylor III	Russell, Roberta, autor
Principles of quality control / Jerry Banks	Banks, Jerry G.
Quality engineering handbook / Thomas Pyzdek ; edited by Paul A. Keller	Pyzdek, Thomas
Reliability, quality, and safety for engineers / B. S. Dhillon	Dhillon, B. S.
Statistical process control [Recurs electrònic] / John S. Oakland	Oakland, John S.
UNE-ISO 2859-1 : procedimientos de muestreo para la inspección por atributos / Asociación Española de Normalización y Certificación (AENOR)	--

Software

Matlab and/or advanced MS Excel

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	310	Catalan/Spanish	second semester	morning-mixed
(PAUL) Classroom practices	311	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	331	Catalan/Spanish	second semester	morning-mixed