



INTERNATIONAL
CAMPUS OF
EXCELLENCE

COORDINATION PROCESS OF
LEARNING ACTIVITIES
PR/CL/001



E.T.S. de Ingeniería y Sistemas
de Telecomunicación

ANX-PR/CL/001-01

LEARNING GUIDE

SUBJECT

595040065 - Women In Science And Technology

DEGREE PROGRAMME

59ET - Doble Grado En Ing.Electronica De Comunicaciones Y En Ing.Telematica

ACADEMIC YEAR & SEMESTER

2022/23 - Semester 2



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Learning guide

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1. Description

1.1. Subject details

| | |
|---------------------------------------|---|
| Name of the subject | 595040065 - Women In Science And Technology |
| No of credits | 3 ECTS |
| Type | Optional |
| Academic year of the programme | Third year |
| Semester of tuition | Semester 6 |
| Tuition period | February-June |
| Tuition languages | English |
| Degree programme | 59ET - Doble Grado en Ing.electronica de Comunicaciones y en Ing.telematica |
| Centre | 59 - Escuela Tecnica Superior De Ingenieria Y Sistemas De Telecomunicacion |
| Academic year | 2022-23 |

2. Faculty

2.1. Faculty members with subject teaching role

| Name and surname | Office/Room | Email | Tutoring hours * |
|-------------------------------|--------------------|----------------------------|--|
| Clara Sanchez Perez | A3111 | clara.sanchez.perez@upm.es | Sin horario. Tutoring hours will be published on Moodle |
| Amador Miguel Gonzalez Crespo | A3112 | amador.m.gonzalez@upm.es | Sin horario. Tutoring hours will be published on Moodle |

| | | | |
|--|-------|----------------------|---|
| Marta Sanchez Agudo (Subject coordinator) | A3112 | marta.sanchez@upm.es | Sin horario. Tutoring hours will be published on Moodle. |
| Maria Pilar Ochoa Perez | A3112 | pilar.ochoa@upm.es | Sin horario. Tutoring hours will be published on Moodle. |

* The tutoring schedule is indicative and subject to possible changes. Please check tutoring times with the faculty member in charge.

2.3. External faculty

| Name and surname | Email | Institution |
|---------------------------|------------------------|--|
| Ana Belén García Hernando | anabelen.garcia@upm.es | ETSIST-Departamento de Ingeniería Telemática y Electrónica |

3. Skills and learning outcomes *

3.1. Skills to be learned

CG 02 - Capacidad de búsqueda y selección de información, de razonamiento crítico y de elaboración y defensa de argumentos dentro del área.

CG 03 - Capacidad para expresarse correctamente de forma oral y escrita y transmitir información mediante documentos y exposiciones en público.

CG 05 - Capacidad de trabajo en equipo y en entornos multidisciplinares.

CG 11 - Habilidades para la utilización de las Tecnologías de la Información y las Comunicaciones.

CG 12 - Habilidad para las relaciones interpersonales y el trabajo en un contexto nacional e internacional, con capacidad para expresarse de forma oral y escrita en lengua inglesa.

CG 14 - Actitudes de ética y responsabilidad profesional, respeto a los Derechos Humanos y a la diversidad cultural.

3.2. Learning outcomes

RA747 - RA68 - Se concretarán para cada asignatura optativa o tipo de actividad según las competencias que contribuya a desarrollar.

* The Learning Guides should reflect the Skills and Learning Outcomes in the same way as indicated in the Degree Verification Memory. For this reason, they have not been translated into English and appear in Spanish.

4. Brief description of the subject and syllabus

4.1. Brief description of the subject

This course provides a basic overview of the history of women in science and technology. The specific contributions of women in a variety of disciplines will be studied while attention will also be given to the various scientific and technical concepts necessary to understand these contributions. In this way, we also aim to increase the scientific and technical background of the students. The class will also address how both historical and modern biases within science and technology, as well as in the portrayals of women and girls in the media and popular culture, can affect outcomes in these areas.

The development of the course syllabus described below will not be done in a rigid way. The different topics will be covered in the form of talks and debate that may cover different aspects of the course at the same time.

Students from all fields and levels of preparation are encouraged to join the course.

4.2. Syllabus

1. Introduction.
 - 1.1. What do we understand by science and gender?
 - 1.2. Motivation of this subject in the current sociocultural context.
2. History of women in science and technology
 - 2.1. Women scientists in the ancient world and Middle Ages
 - 2.2. From the Enlightenment to the 19th century
 - 2.3. The 19th and early 20th centuries
 - 2.4. World War II and social changes
3. Revolutionary scientists, but not recognized.
 - 3.1. The Matilda effect and its consequences.
 - 3.2. The rarity of female Nobel laureates.
4. Current role of women in science.
5. How sexism and stereotyping in vocational education promote and reinforce gendered occupations
6. Neurosexism: the myth that men and women have different brains

5. Schedule

5.1. Subject schedule*

| Week | Face-to-face classroom activities | Face-to-face laboratory activities | Distant / On-line | Assessment activities |
|------|--|------------------------------------|-------------------|---|
| 1 | <p>Course introduction, instructor introduction, student introductions.</p> <p>Presentation of a topic and in-class discussion.</p> <p>Duration: 02:00</p> | | | <p>Class attendance is compulsory and represents 10% of the total grade for the course.</p> <p>Continuous assessment Presential Duration: 00:00</p> <p>Short quiz on the topic of the day's lesson. Several tests will be held throughout the course. The definitive dates are still to be determined.</p> <p>Continuous assessment Presential Duration: 00:00</p> <p>Active participation of students during lectures, contributing to debates will be taken into account in their assessment.</p> <p>Continuous assessment Presential Duration: 00:00</p> |
| 2 | <p>Presentation of a topic and in-class discussion: What do we understand by science and gender?</p> <p>Duration: 02:00</p> | | | |
| 3 | <p>Presentation of a topic and in-class discussion: Motivation of this subject in the current sociocultural context.</p> <p>Duration: 02:00</p> | | | |
| 4 | <p>Presentation of a topic and in-class discussion: History of women in science and technology</p> <p>Duration: 02:00</p> | | | |
| 5 | <p>Presentation of a topic and in-class discussion: History of women in science and technology</p> <p>Duration: 02:00</p> | | | |

| | | | | |
|----|--|--|--|--|
| 6 | <p>Presentation of a topic and in-class discussion: History of women in science and technology Duration: 02:00</p> | | | |
| 7 | <p>Presentation of a topic and in-class discussion: History of women in science and technology Duration: 02:00</p> | | | |
| 8 | <p>Presentation of a topic and in-class discussion: Revolutionary scientists, but not recognized. Duration: 02:00</p> | | | |
| 9 | | | | |
| 10 | <p>Presentation of a topic and in-class discussion: Current role of women in science. Duration: 02:00</p> | | | |
| 11 | <p>Presentation of a topic and in-class discussion: How sexism and stereotyping in vocational education promote and reinforce gendered occupations. Duration: 02:00</p> | | | |
| 12 | <p>Presentation of a topic and in-class discussion: Neurosexism: the myth that men and women have different brains Duration: 02:00</p> | | | |
| 13 | <p>Presentation of a topic and in-class discussion: students class presentations. Duration: 02:00</p> | | | <p>Final paper (it will be your class presentation topic) Continuous assessment Not Presential Duration: 00:00</p> |
| 14 | <p>Presentation of a topic and in-class discussion: students class presentations. Duration: 02:00</p> | | | <p>Class presentation. Continuous assessment Presential Duration: 02:00</p> |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | <p>Global Written Exam and Oral Presentation (1-06-2023) Final examination Presential Duration: 02:00</p> |

Depending on the programme study plan, total values will be calculated according to the ECTS credit unit as 26/27 hours of student face-to-face contact and independent study time.

* The schedule is based on an a priori planning of the subject; it might be modified during the academic year, especially considering the COVID19 evolution.

6. Activities and assessment criteria

6.1. Assessment activities

6.1.1. Continuous assessment

| Week | Description | Modality | Type | Duration | Weight | Minimum grade | Evaluated skills |
|------|--|----------|---------------|----------|--------|---------------|--|
| 1 | Class attendance is compulsory and represents 10% of the total grade for the course. | | Face-to-face | 00:00 | 10% | .5 / 10 | CG 02 CG 05 CG 14 CG 11 CG 03 CG 12 |
| 1 | Short quiz on the topic of the day's lesson. Several tests will be held throughout the course. The definitive dates are still to be determined. | | Face-to-face | 00:00 | 10% | 3 / 10 | CG 05 CG 14 CG 11 CG 03 CG 02 CG 12 |
| 1 | Active participation of students during lectures, contributing to debates will be taken into account in their assessment. | | Face-to-face | 00:00 | 10% | 0 / 10 | CG 02 CG 05 CG 14 CG 11 CG 03 CG 12 |
| 13 | Final paper (it will be your class presentation topic) | | No Presential | 00:00 | 35% | 3 / 10 | CG 05 CG 14 CG 11 CG 03 CG 12 CG 02 |
| 14 | Class presentation. | | Face-to-face | 02:00 | 35% | 3 / 10 | CG 02 CG 05 CG 14 CG 11 CG 03 CG 12 |

6.1.2. Final examination

| Week | Description | Modality | Type | Duration | Weight | Minimum grade | Evaluated skills |
|------|-------------|----------|------|----------|--------|---------------|------------------|
|------|-------------|----------|------|----------|--------|---------------|------------------|

| | | | | | | | |
|----|---|--|--------------|-------|------|--------|--|
| 17 | Global Written Exam and Oral Presentation (1-06-2023) | | Face-to-face | 02:00 | 100% | 5 / 10 | CG 14 CG 02 CG 11 CG 03 CG 12 CG 05 |
|----|---|--|--------------|-------|------|--------|--|

6.1.3. Referred (re-sit) examination

| Description | Modality | Type | Duration | Weight | Minimum grade | Evaluated skills |
|--|----------|--------------|----------|--------|---------------|--|
| Global Written Exam and Oral Presentation (21-06-2023) | | Face-to-face | 02:00 | 100% | 5 / 10 | CG 02 CG 05 CG 14 CG 11 CG 03 CG 12 |

6.2. Assessment criteria

The specific dates of the Global Exams (June/July) depend on the organization of the School's exam schedule, coordinated by the SOA, and are published in the Annual Teaching Plan (Plan Anual Docente). In case of discrepancy between the information published in this guide and that published in the Annual Teaching Plan, the information published in the Annual Teaching Plan should be taken into account, as it contains the appropriate updates.

Progressive Assessment

* Class attendance is mandatory and represents 10% of the total grade for the subject. Students must attend at least 80% of the lessons to pass the subject. Otherwise a global exam must be taken. Those students attending 100% or at least 80% of the lessons will get 1 and 0.5 points (from a 10-point total grade), respectively.

* Short quiz on the topic of the day's lesson. Several tests will be held throughout the course. The specific dates will be scheduled depending on the development of the course. The average mark obtained in the quiz accounts for 10 % of the total grade. Students must obtain at least a grade of 3 points (out of 10).

* Active participation of students during lectures, contributing to debates will be taken into account in their assessment. Student contributions to the class account for 10% of the total grade.

* In addition, students will work in groups to submit a written paper (written essay or other format proposed by the teachers). Each essay will be presented in class by all members of each corresponding group. Written paper accounts for 35% of the total grade. Oral presentation accounts for 35% of the total grade. A grade of 3 points (out of 10) must be obtained at least in both, the oral presentation and the written work, in order to pass the course.

* An average grade of 5 points (out of 10) is required to pass the course.

* Students who do not obtain the minimum grade in any of the assessment activities will not be able to obtain a grade higher than 4.0 points (out of 10) in the course.

Global examination (June)

* Only those students who have not passed the progressive assessment will have to take the Global Examination.

* Students will be evaluated based on an oral presentation and a written exam.

* An average grade of 5 points (out of 10) is required to pass the course.

* A grade of 3 points (out of 10) must be obtained at least in both, the oral presentation and the written work, in order to pass the course.

* Students who do not obtain the minimum grade in any of the assessment activities will not be able to obtain a grade higher than 4.0 points (out of 10) in the course.

Referred examination (July)

* Students will be evaluated based on an oral presentation and a written exam.

* An average grade of 5 points (out of 10) is required to pass the course.

* A grade of 3 points (out of 10) must be obtained at least in both, the oral presentation and the written work, in order to pass the course.

* Students who do not obtain the minimum grade in any of the assessment activities not be able to obtain a grade

higher than 4.0 points (out of 10) in the course.

7. Teaching resources

7.1. Teaching resources for the subject

| Name | Type | Notes |
|--|--------------|-------|
| Has feminism changed science?. Londa Schiebinger. Harvard University Press, 1999 | Bibliography | |
| Women in Science: a Social and Cultural History. Ruth Watts. Routledge, 2007 | Bibliography | |
| Notable Women in the Physical Sciences. A Biographical Dictionary. Barbara Smith Shearer and Benjamin F. Shearer. ABC-CLIO, 1997. | Bibliography | |
| Women in science. European Commision. Publications Office of the European Union, 2010 | Bibliography | |
| Madame Curie: A Biography. Eve Curie. Da Capo Press, 2001. | Bibliography | |
| The biographical dictionary of women in science: pioneering lives from ancient times to the mid-20th century. Marilyn Ogilvie and Joy Harvey. Routledge, 2000. | Bibliography | |
| Inferior: How science got women wrong -and the new research that?s rewriting the story. A. Saini. Beacon Press. | Bibliography | |

| | | |
|---|--------------|--|
| Delusions of Gender. Cordelia Fine. London icon books, 2011. | Bibliography | |
| The Gendered Brain: The new neuroscience that shatters the myth of the female brain. Gina Rippon. Bodley Head, 2019. | Bibliography | |
| Moodle | Web resource | |
| Classroom equipment | Equipment | Personal computer. Video projector. Blackboard and Digital Blackboard |

8. Other information

8.1. Other information about the subject

>Sustainable Development Goals

The course aims to contribute, mainly, to the development of the following SDGs:

* SDG 4: Quality Education

It goes without saying that our teaching activity, like that of the entire University, is focused on guaranteeing a Quality Education to our students. To this end, we pay close attention to the content of each class as well as its distribution and development, we prepare the necessary material in each case and we provide the students with all the information and support necessary to ensure the quality of their education. We consider it interesting to point out the following SDG 4 targets (<https://www.un.org/sustainabledevelopment/education/>), which are particularly relevant to this specific course:

4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous people and children in vulnerable situations

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

* **SDG 5: Gender Equality**

Given the content of this course, it is beyond doubt that there is a strong link to the SDG 5. More specifically, we can point out the following targets (<https://www.un.org/sustainabledevelopment/gender-equality/>):

5.1 End all forms of discrimination against all women and girls everywhere

5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decisionmaking in political, economic and public life

5.B Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women

>Learning Skills:

CG 02 - Ability to search and select information, critical reasoning and elaboration and defense of arguments within the area.

CG 03 - Ability to express oneself correctly orally and in writing form to communicate information through documents and public presentations.

CG 05 - Ability to work in a team and in multidisciplinary environments.

CG 11 - Skills for the use of the Information and Communication Technologies.

CG 12 - Ability for interpersonal relations and work in a national and international context, with the capacity to express oneself orally and in writing form in the English language.

>Communication with the teachers:

The student must request the tutorship by appointment from the teacher of the group in which he or she is enrolled. This can be done in person (when possible) or by email. The tutoring schedule for each teacher will be posted in Moodle at the beginning of the semester.

The information contained in this guide is indicative and therefore subject to change due to errors, omissions, unforeseen incidents that occur during the academic year or if the correct development of the topic so advises.