



POLITÉCNICA

INTERNATIONAL
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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

59TL - Grado En Ingeniería Telemática

ACADEMIC YEAR & SEMESTER

2022/23 - Semester 2

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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	59TL - Grado en Ingeniería Telemática
Centre	59 - Escuela Técnica Superior De Ingeniería Y Sistemas De Telecomunicación
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

RA232 - Se concretarán para cada asignatura optativa o para la realización de prácticas en empresas.

* 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>Lecture</p>			<p>Class attendance is compulsory and represents 10% of the total grade for the course.</p> <p>Other assessment</p> <p>Continuous assessment</p> <p>Presential</p> <p>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>Written test</p> <p>Continuous assessment</p> <p>Presential</p> <p>Duration: 00:00</p> <p>Active participation of students during lectures, contributing to debates will be taken into account in their assessment.</p> <p>Other assessment</p> <p>Continuous assessment</p> <p>Presential</p> <p>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> <p>Additional activities</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> <p>Additional activities</p>			
4	<p>Presentation of a topic and in-class discussion: History of women in science and technology</p> <p>Duration: 02:00</p> <p>Additional activities</p>			
5	<p>Presentation of a topic and in-class discussion: History of women in science and technology</p> <p>Duration: 02:00</p> <p>Additional activities</p>			

6	<p>Presentation of a topic and in-class discussion: History of women in science and technology Duration: 02:00 Additional activities</p>			
7	<p>Presentation of a topic and in-class discussion: History of women in science and technology Duration: 02:00 Additional activities</p>			
8	<p>Presentation of a topic and in-class discussion: Revolutionary scientists, but not recognized. Duration: 02:00 Additional activities</p>			
9				
10	<p>Presentation of a topic and in-class discussion: Current role of women in science. Duration: 02:00 Additional activities</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 Additional activities</p>			
12	<p>Presentation of a topic and in-class discussion: Neurosexism: the myth that men and women have different brains Duration: 02:00 Additional activities</p>			
13	<p>Presentation of a topic and in-class discussion: students class presentations. Duration: 02:00 Additional activities</p>			<p>Final paper (it will be your class presentation topic) Group work Continuous assessment Not Presential Duration: 00:00</p>
14	<p>Presentation of a topic and in-class discussion: students class presentations. Duration: 02:00 Additional activities</p>			<p>Class presentation. Group presentation Continuous assessment Presential Duration: 02:00</p>
15				
16				
17				<p>Global Written Exam and Oral Presentation (1-06-2023) Other assessment 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.	Other assessment	Face-to-face	00:00	10%	.5 / 10	CG 05 CG 02 CG 03 CG 11 CG 12 CG 14
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.	Written test	Face-to-face	00:00	10%	3 / 10	CG 05 CG 02 CG 03 CG 11 CG 12 CG 14
1	Active participation of students during lectures, contributing to debates will be taken into account in their assessment.	Other assessment	Face-to-face	00:00	10%	0 / 10	CG 05 CG 02 CG 03 CG 11 CG 12 CG 14
13	Final paper (it will be your class presentation topic)	Group work	No Presential	00:00	35%	3 / 10	CG 05 CG 02 CG 03 CG 11 CG 12 CG 14
14	Class presentation.	Group presentation	Face-to-face	02:00	35%	3 / 10	CG 05 CG 02 CG 03 CG 11 CG 12 CG 14

6.1.2. Final examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
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17	Global Written Exam and Oral Presentation (1-06-2023)	Other assessment	Face-to-face	02:00	100%	5 / 10	CG 05 CG 02 CG 03 CG 11 CG 12 CG 14
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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)	Other assessment	Face-to-face	02:00	100%	5 / 10	CG 05 CG 02 CG 03 CG 11 CG 12 CG 14

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.