

Computers

Course Presentation

Grau en Ciència i Enginyeria de Dades

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Outline

- Goals
- Lecturers
- Course Description
- Competencies (Technical and Transversal)
- Lectures Description
- Grading
- Scheduling
- Others

Goals

- Introductory understanding about wide range of computer related topics
 - Hardware and software components of a system
 - Operating Systems support
 - Fundamentals of programming
 - Basic software optimization techniques
 - Basic performance analysis
- Course Previous Requirements
 - None
- Previous capacities
 - Basic programming skills

Lecturers

- Teachers
 - Xavier Martorell
 - Office: C6-121
 - E-mail: xavim@ac.upc.edu
 - E-mail **Gsuite**: xavier.martorell@upc.edu
 - Xavi Verdú (coordinator)
 - Office: D6-109
 - E-mail: jverdu@ac.upc.edu
 - E-mail **Gsuite**: javier.verdu@upc.edu

Course and Lectures Description

- **~13h/week Total work**
- 3h/week theory lectures
 - 1 hour lectures
- 2h/week lab sessions
 - Individual work
- 8h/week on your own, on average

Competences

- Technical
 - **CE4** - Use **current computer systems**, including high performance systems, for the process of large volumes of data from the knowledge of its structure, operation and particularities.
 - Other Generic Competencies: **CG1, CG2, CG4**
- Transversal
 - **CT5** - **Effective use of information resources (Assessed Competency)**
 - **CT6** - Autonomous Learning
 - **CT7** - Third Language (English)
- Other Basic Competences
 - **CB1 (basic to advanced knowledge), CB2 (professionalism, problem solving), CB5 (high degree of autonomy)**

Theory Lectures

- 1h lectures
 - 3 sessions per week
 - Hybrid sessions just in case there are students cannot physically be in the classroom, due to covid
 - Gmeet link: <https://meet.google.com/wvc-cjqg-woa>
 - Use your UPC account to login
- Based on slides
- Cooperative learning
 - Questions & exercises related to current topics
 - **Promote engaging discussions!!!!**
- Autonomous learning
 - Homework and fulfill the lab exercises

Lab Sessions

- Complement theory lectures
 - Get experience dealing with the concepts explained in theory lectures
 - Synchronized with theory lectures
 - Delayed 1 or 2 weeks for better assimilate new knowledge
- 2h sessions with teacher support
 - In theory classrooms (A5-202 & A5-102) due to healthy protocol
 - Bring your own laptop
 - There is a laptop lending service
 - Deliverables to fulfill lab sessions
 - Started Tuesday, delivery on Friday afternoon
 - Hybrid sessions just in case there are students cannot physically be in the classroom, due to covid
 - Gmeet link: <https://meet.google.com/wvc-cjqq-woa>
 - Use your UPC account to login
- Attendance: not mandatory, but **strongly recommended**

Conditions to Physically Attend Lectures (UPC)

- It is mandatory to use masks and keep security social distance
- Ventilated classrooms (open windows and doors during lectures)
- Arranged access to classrooms
- Students will use RACO (i.e. “sóc aquí” tool) to register the classroom distribution of every session (strongly suggested to keep same distribution among sessions)
- It is not allowed access to the classroom once the lecture is started
- The teacher has to be the last one to access and the first one to leave
- The teacher has to prevent the movement in the classroom and keep the social distance of at least 2 meters with the first row of students
- Telematics consultation (videocalls, emails, chats, forums, ...)
- You have to sign a document of responsibility statement

What if quarantine or lockdown... (I)

- Adendum in the syllabus
 - <https://www.fib.upc.edu/ca/estudis/graus/grau-en-enginyeria-informatica/pla-destudis/assignatures/COM-GCED>
- Streaming of theory lectures for students cannot attend due to COVID-19
 - Even though we will record the sessions and share them among the students of the course, in any case as long as there is no issue to do the recording from anyone
- Behavior of Lab sessions under quarantine or lockdown
 - If it is a particular student, it has to notify to its respective lecturer. The student can join the session through the Gmeet link. during the session to answer doubt during the lab session
 - The deliverables done during the quarantine/lockdown period will not be taken into account, but it is strongly suggestable to do them as soon as possible (the deadline will be delayed as well).
- If there is any assessment event, such as an exam, the event will be delayed for the particular people under quarantine to be done as soon as they can go to the classroom

What if quarantine or lockdown... (II)

- If the lectures of a particular group (or all of them) have to be under no-presence mode, it will be notified through RACO
- In case of Alarm State of global lockdown
 - Additional support material will be provided
 - Additional sessions to solve doubts
 - Lectures and Lab sessions will be synchronally performed
 - Assessment methodology will be exactly the same, but remotely

Grading

- Theory Mark= $\text{MAX}(15\% \text{ PT} + 60\% \text{ FT}; 75\% \text{ FT})$
 - PT: Theory mid-term (April 16th, 2021)
 - FT: Final Theory Exam (June 4th, 2021)
- Regular Technical Mark = Theory Mark + 15% LS + 5% Homework + 5% Labwork
 - LS: Lab Session (Last week)
 - Homework: about a topic to be defined during the course
 - Labwork: Lab deliverables
- If fail → Reassessment (July 29th, 2021)
 - Reassessment mark substitutes the global theory mark (that is, 75% of the course mark)
 - If the regular assessment mark was 4 or higher and the new mark (including the Reassessment mark) is lower, then we keep the regular mark
- Transversal Competence Mark (CT5): Based on Homework deliverable

Scheduling

	Dilluns	Dimarts	Dimecres	Dijous	Divendres	
15/02/2021	T0	S1			T1	19/02/2021
22/02/2021	T1	S2			T1/T2	26/02/2021
01/03/2021	T2	S3			T2	05/03/2021
08/03/2021	T3	S4			T3	12/03/2021
15/03/2021	T3	S5			T4	19/03/2021
22/03/2021	T4	S6			T4	26/03/2021
29/03/2021						02/04/2021
05/04/2021		S7			T4	09/04/2021
12/04/2021	T4	S8			Parcial Teoria	16/04/2021
19/04/2021					T5	23/04/2021
26/04/2021	T6	S9			T6	30/04/2021
03/05/2021	T6	S10				07/05/2021
10/05/2021	T7	S11			T7	14/05/2021
17/05/2021	T8	Simu Prova			T8	21/05/2021
24/05/2021		Prova Lab			T9	28/05/2021
31/05/2021	T9				Ex. Final Teoria	04/06/2021
28/06/2021		Ex. Recuperació				02/07/2021

Color	Significat
	Sense classe per dies d'avaluació
	Sense classe per dies no lectius
	Proves d'avaluació de Teoria
	Prova d'avaluació de Lab
	Simulacre Prova Lab

Scheduling – Theoretical sessions

- Presentació de l'assignatura
- T1: Representació de les dades
- T2: El computador i els seus elements
- T3: Llibreries i compilació
- T4: Sistemes operatius
- T5: Fonaments de la programació
- T6: Introducció al paral·lelisme
- T7: Anàlisi de rendiment
- T8: Entrada/sortida
- T9: Sistemes de fitxers i emmagatzematge

Scheduling – Lab sessions

- S1: Familiarització Màquines Virtuals
- S2: Familiarització entorn Linux
- S3: Representació de dades
- S4: El computador i els seus elements
- S5 i S6: Llibreries i entorn de compilació (I) i (II)
- S7 i S8: Sistemes operatius (I) i (II)
- S9: Fonaments de la programació
- S10: Paral·lelisme
- S11: Anàlisi de rendiment
- **Simulacre de Prova de Lab**
- **Prova de Lab**

Others

- Web Site:
 - <http://docencia.ac.upc.edu/FIB/GCED/COM>
- Bibliography
 - Basic + complementary (according to lessons needs)
- Other resources
 - RACO + Atenea
 - Appointments (don't forget sending a previous email: *name@ac.upc.edu*)
 - Xavier Martorell (*xavim*) and Xavi Verdú (*jverdu*)
- Select a Students Representative