



Universitat de Lleida

DEGREE CURRICULUM
**APPLICATIONS FOR MOBILE
DEVICES**

Coordination: SENDÍN VELOSO, MONTSERRAT

Academic year 2016-17

Subject's general information

Subject name	APPLICATIONS FOR MOBILE DEVICES			
Code	102025			
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Typology	Modality
	Bachelor's Degree in Computer Engineering	3	COMPULSORY	Attendance-based
ECTS credits	6			
Groups	1GG			
Theoretical credits	3			
Practical credits	3			
Coordination	SENDÍN VELOSO, MONTSERRAT			
Department	INFORMATICA I ENGINYERIA INDUSTRIAL			
Teaching load distribution between lectures and independent student work	30% Presential (equivalent to 45h) 70% Autonomous work (equivalent to 105h)			
Important information on data processing	Consult this link for more information.			
Language	Preferably Catalan (Spanish if any student shows difficulties with Catalan).			
Office and hour of attention	Wednesday de 17 to 19 H.			

Professor/a (s/es)	Adreça electrònica professor/a (s/es)	Crèdits	Horari de tutoria/lloc
SENDÍN VELOSO, MONTSERRAT	msendin@diei.udl.cat	6	

Subject's extra information

This subject belongs to a optional specialization module called 'Information Technologies'.

To follow this subject properly some previous knowledge in Java programming is recommended.

Learning objectives

- Knowing the Android platform and the elements that integrate it
- Knowing the most recommended IDE
- Develop applications for the Android operating system
- Get familiar in the User Interface design
- Knowing and managing some used API for Android
- Lay the foundations for the implementation of additional functionalities (data base access, location utility, resources and functionalities from the device, etc.)
- Knowing the step of publication for Android apps

Competences

University of Lleida strategic competences

CT2. Mastering a foreign language, especially English.

CT3. Training Experience in the use of the new technologies and the information and communication technologies.

Degree-specific competences

GII-T13. Capacity to use methodologies based in the user and the organisation in order to develop, evaluate and manage applications and systems based in the information technologies that ensure the accessibility, ergonomics and usability of the systems.

GII-T16. Capacity to conceive systems, applications and services based on network technologies, which include the internet, web pages, electronic commerce, multimedia, interactive services and mobile computing.

GII-T17. Capacity to comprise, apply and manage the computer systems guarantee and security.

Cross-disciplinary competences

EPS11. Capacidad de comprender las necesidades del usuario expresadas en un lenguaje no técnico.

Subject contents

Laying the foundations

Block I - *Getting started*

- Theme 1 - Introduction to the Android platform
- Theme 2 - First steps: Android Studio development environment
- Theme 3 - Basics of Android applications

Block II – Basic questions on User Interfaces

- Theme 4 - Widgets: basic controls and selection controls
- Theme 5 - Organizing the screen: *Layouts*

Block III – Advanced questions on User Interfaces

- Theme 6 – Menus and Navigation design
- Theme 7 – Flexible User Interfaces with *fragments*

Exploring functionalities

Block IV – Additional aspects

- Theme 8 - Data persistence. Managing databases
- Theme 9 - Publication and distribution of an Android app

Methodology

Big-size Groups: Laboratory sessions addressed to the assimilation and put into practice of concrete concepts (6 credits)

- **Problem Based Learning:** Guided classes addressed to solve little projects, counting with the personalized monitoring of the professor.
 - **Theoretical part:** A short introduction to each specific topic, supported by snapshots and/or specific notes. The rest of the class is addressed to an active learning by the student, culminating in a little practical application.
 - **Practical application part:** based on examples and little projects (*mini-activities*), which are proposed and solved weekly.

Autonomous work (non presential):

- The practical work (*mini-activities* and course practice) will be completed in non presential hours.

The **avaluation system** (detailed in el corresponding section) is composed of: 1) written tests (2 midterm exams); and 2) practices (to develop in groups).

Development plan

Week	Laboratory addressed session - Theoretical part (BsG)	Laboratory addressed session - Practical part (BsG)	Autonomous work
1	Subject presentation T1: Introduction to the Android platform (session 1) T2: First steps: Android Studio development environment (session 2)		Study

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2	T2: First steps: Android Studio development environment (session 1) T3: Basics of Android applications (session 2)	<i>MiniActiv-1</i> : Good practices in resources management	Development environment configuration and <i>MiniActiv-1</i> completion
3	T3: Basics of Android applications	<i>MiniActiv-2</i> : Endowing Helloworld of Interactivity and Navigation	Study and <i>MiniActiv-2</i> completion
4	T3: Basics of Android applications.	<i>MiniActiv-3</i> : Knowing thoroughly the EPS	Study and <i>MiniActiv-3</i> completion
5	T3: Basics of Android applications	<i>MiniActiv-4</i> : Player to demand with broadcastreceiver	Study and <i>MiniActiv-4</i> completion
6	T4: Widgets: basic controls and selection controls	<i>MiniActiv-5</i> : Buttons and other widgets clickables	Study and <i>MiniActiv-5</i> completion
7	T4: Widgets: basic controls and selection controls (session 1) T5: Organizing the screen: <i>Layouts</i> (session 2)	<i>MiniActiv-6</i> : <i>AdapterView</i> selection controls	Study, <i>MiniActiv-6</i> completion and <i>Prac1</i> starting
8	T5: Organizing the screen: <i>Layouts</i>	<i>MiniActiv-7</i> : Experiencing with <i>layouts</i>	Study, <i>MiniActiv-7</i> completion and <i>Prac1</i> development
9	1rst midterm		<i>Prac1</i> completion
10	T6: Menus and Navigation design	<i>MiniActiv-8</i> : <i>Helloworld</i> with menus	Study, <i>MiniActiv-8</i> completion and <i>Prac1</i> delivey
11	T6: Menus and Navigation design	<i>MiniActiv-9</i> : Anchoring menus to the <i>ActionBar</i>	Study, <i>MiniActiv-9</i> completion
12	T7: Flexible User Interfaces with <i>fragments</i>	<i>MiniActiv-10</i> : Making <i>HelloFragments</i> flexible	Study, <i>MiniActiv-10</i> completion and <i>Prac2</i> starting
13	T7: Flexible User Interfaces with <i>fragments</i> (session 1) T8: Persistència de dades (session 2)	<i>MiniActiv-11</i> : Decoupling <i>fragments</i>	Study, <i>MiniActiv-11</i> completion and <i>Prac2</i> development
14	T8: Data persistence. Managing databases	<i>MiniActiv-12</i> : Operating with BBDD	Study, <i>MiniActiv-12</i> completion and <i>Prac2</i> development
15	T9: Publication and distribution of an Android app		Study, <i>Prac2</i> completion and <i>Prac2</i> development
16	2nd midterm week		Study and <i>Prac2</i> completion
17	2nd midterm week		Study
18	Tutories		<i>Prac2</i> delivey
19	Recovery		
20	Personalized interview (if <i>Prac2</i> is below the minimum mark required)		

Evaluation

Activt.	Description	Weight	Minimum Grade	In group	Presential	Mandatory	Recoverable
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Part1	First midterm Concepts and problem solving	15%	3,0	No	Yes	Yes	Yes
Part2	Second midterm Concepts and problem solving	15%	3,0	No	Yes	Yes	Yes
MiniActivs	Pack of Mini-activities	20%	No	Yes	Yes (50%)	Yes	No
Prac	Course practice	50%	4,0	Yes	No	Yes	Yes

Final grade = 0,15 * Part1 + 0,15 * Part2 + 0,20 * MiniActivs + 0,50 * Prac

- Subject is passed if **final grade** is greater or equal than **5,0** and all midterms are above the minimum required.

Other considerations:

- Type of exams: concept fixation and problems solving
- Pack of mini-activities (MiniActivs):
 - Continuous work during class sessions
 - *Objective*: put into practice *in-situ* each new concept introduced in class.
 - *Delivery*:
 - Weekly from the 2nd week (*recommendable*)
 - Unique:
 - 9th week (mini-activities solved in the 1r midterm)
 - 16th week (mini-activities solved in the 2nd midterm)
- Course practice (Prac):
 - Articulated in 2 deliveries
 - *Weight and calendar of each delivery*:
 - *Delivery 1 (Prac1)*: 10^a Week. (25% of the grade)
 - *Delivery 2 (Prac2)*: 18^a Week. (25% of the grade)
 - *Avaluation and recovery system*: continuous avaluation
 - Students receive feedback according to established mark criteria.
 - *Prac1*: Possibility of improvement through the 2nd delivery.
 - The mark of the re-delivered part is modified applying a *corrective factor* of 0,85.
 - *Prac2*: in case the mark is above the minimum required: *personalized interview* during the 20th week (recovery), aiming to bring improvements.
- For all activities: programmed deliveries, unmovable dates

Bibliography

Books

- F. Ableson, C. Collins, R. Sen
"Android, guía para desarrolladores"
Anaya Multimedia, 2011
- S. Komatineni , D. MacLean , S. Hashimi
"Pro Android 3"
Apress, 2011
- D. Smith , J. Friesen
"Android recipes: a Problem-solution approach"

Apress, 2011