

SYLLABUS / FIȘA DISCIPLINEI
1. Information on the study programme / Date despre programul de studii

1.1. Institution / Instituția de învățământ superior	Universitatea de Vest din Timișoara
1.2. Faculty / Facultatea	Matematică și Informatică
1.3. Department / Departamentul	Computer Science (Informatică)
1.4. Study program field	Computer Science (Informatică în engleza)
1.5. Study cycle/ Ciclul de studii	Bachelor / licență
1.6. Study programme / Programul de studii / calificarea*	Computer Science / Informatică în limba engleză / Database administration / <i>Administrator baze de date - 252101; Computer network administration / Administrator de rețea de calculatoare - 252301; Analyst / Analist - 251201; Research assistant in computer science / Asistent de cercetare în informatică - 214918; Teacher in secondary schools / Profesor în învățământul gimnazial - 233002; Programmer / Programator - 251202; Software systems designers / Proiectant sisteme informatice - 251101</i>

2. Information on the course / Date despre disciplină

2.1. Title of the course / Denumirea disciplinei	Programming for Mobile Devices						
2.2. Teacher in charge of the course / Titularul activităților de curs	Mafteiu-Scai Liviu Octavian						
2.3. Teacher in charge of the seminar / Titularul activităților de seminar	Mafteiu-Scai Liviu Octavian						
2.4. Study year / Anul de studii	2	2.5. Semester / Semestrul	2	2.6. Examination type / Tipul de evaluare: E(xam)/C(olloquim)	C	2.7. Course type / Regimul disciplinei: M(andatory)/ E(lective)/ F(acultative)	DO

3. Estimated study time (number of hours per semester) /Timpul total estimat (ore pe semestru al activităților didactice)

3.1. Attendance hours per week / Număr de ore pe săptămână	3	out of which din care: 3.2 lecture/ curs	2	3.3. seminar/laborator	1
3.4. Attendance hours per semester / Total ore din planul de învățământ	42	out of which: 3.5 lecture / curs	28	3.6. seminar/laborator	14
Distribution of the allocated amount of time / Distribuția fondului de timp*					hours/ore
Individual study /Studiu după manual, suport de curs, bibliografie și notițe					20
Supplementary documentation at library or using electronic repositories / Documentare suplimentară în bibliotecă, pe platformele electronice de specialitate					15
Preparing for laboratories, homework, reports etc. /Pregătire seminarii/laboratoare, teme, referate, portofolii și eseuri					15
Exams / Examinări					4

Tutoring / Tutorat		4
3.7. Total number of hours of individual study / Total ore studiu individual	58	
3.8. Total number of hours per semester / Total ore pe semestru	100	
3.9. Number of credits (ECTS) / Număr de credite	4	

4. Prerequisites (if it is the case) / Precondiții (acolo unde e cazul)

4.1. curriculum / de curriculum	-
4.2. skills / de competențe	OOP(Java, C++), HTML

5. Requirements (if it is the case) / Condiții (acolo unde e cazul)

5.1. for the lecture / de desfășurare a cursului	Classroom with blackboard and video-projector
5.2. for the seminar, laboratory / de desfășurare a seminarului/laboratorului	Laboratory properly equipped (computers with Corona SDK and Android Studio installed)

6. Acquired skills / Competențe specifice acumulate

Professional skills / Competențe profesionale	<ol style="list-style-type: none"> Understanding mobile device hardware, operating platforms and programming platforms ; The ability to design and develop mobile apps using Corona SDK and Android Studio;
Transversal skills / Competențe transversale	<ol style="list-style-type: none"> An awareness of professional and ethical issues, especially those related to security and privacy of user data; Demonstrating the spirit of initiative and action to update professional knowledge

7. Objectives of the course / Obiectivele disciplinei (reieșind din grila competențelor specifice acumulate)

7.1. General objective / Obiectivul general al disciplinei	Familiarization with design, implementation and testing of software applications for mobile devices.
7.2. Specific objectives / Obiectivele specifice	<p>-Knowledge Ob. (OC): (1) provide methods to implement the functions for mobile applications; (2) describe the methods for checking the correctness of implementation;</p> <p>-Empowerment Ob. (OAB): (1) identify appropriate libraries and functions to solve the problem / implemented; (2) implement algorithms in a high level programming languages (Lua and Java); (4) test implementations.</p> <p>-Attitude Ob. (OAT): (1) to argue the importance of mobile devices and software applications appropriate for a specialist in IT</p>

8. Content / Conținuturi*

8.1. Lecture / Curs	Teaching strategies / Metode de predare	Remarks, details / Observații
<p>C1. (2h) <i>Basic Notions in mobile devices programming.</i> History: from the telegraph to the smartphone.</p> <p>The general structure of a smartphone hardware.</p> <p>Operating platforms.</p> <p>Software Platforms</p>	<p>Lecture, conversation, exemplification</p>	<p>1. Slides</p>
<p>C2. (2h) <i>Rules in designing and implementing mobile applications</i></p>	<p>Lecture, conversation, exemplification</p>	<p>1. Slides</p>
<p>C3. (2h) <i>Android applications development.</i> Android applications architecture. The life cycle of an activity</p> <p>The Anatomy of an Android Application</p>	<p>Lecture, conversation, exemplification</p>	<p>1. Slides</p> <p>2. J. Annuzzi et. All, “Introduction to App. Development in Android”, Addison Wesley 2013</p> <p>3. Chris Haseman, Android Essentials, apress</p>
<p>C4. (2h) <i>Android Studio.</i></p> <p>User Interface</p> <p>User Experience</p> <p>Defining the UI Layout files. Basic user interfaces and using common controls.</p>	<p>Lecture, conversation, exemplification</p>	<p>1. Slides</p> <p>2. Adam Gerber, Clifton Craig, Learn Android Studio-Build Android Apps Quickly, Springer 2015</p> <p>3. Onur Cinar, Android Quick APIs Reference, ISBN13: 978-1-484205-24-2, 2015</p>
<p>C5. (2h) <i>Android Studio.</i> Multiple Activities and intents. Fragments. Adapters and control lists. Menus and action bars. Styles and themes.</p>	<p>Lecture, conversation, exemplification</p>	<p>1. Slides</p> <p>2. Adam Gerber, Clifton Craig, Learn Android Studio-Build Android Apps Quickly, Springer 2015</p> <p>3. D. Maclean, Android Fragments, apress</p>
<p>C6. (2h) <i>Android Studio.</i> Working with Dialogs and</p>	<p>Lecture, conversation, exemplification</p>	<p>1. Slides</p> <p>2. Adam Gerber, Clifton Craig, Learn Android</p>

Touch Screens. Using Google Cloud Messaging with Android		Studio-Build Android Apps Quickly, Springer 2015
C7. (2h) <i>Android Studio</i> . Using databases in Android: SQLite	Lecture, conversation, exemplification	<ol style="list-style-type: none"> 1. Slides 2. Adam Gerber, Clifton Craig, Learn Android Studio-Build Android Apps Quickly, Springer 2015
C8. (2h) Mobile web application development. Choosing between web and native experience. Defining Web experience mobile applications. Choice devices and levels of support. Options for building mobile web experiences. Styles, bookmarks.	Lecture, conversation, exemplification	<ol style="list-style-type: none"> 1. Slides 2. Adam Gerber, Clifton Craig, Learn Android Studio-Build Android Apps Quickly, Springer 2015
C9. (2h) <i>Android Studio</i> . Game development in Android.	Lecture, conversation, exemplification	<ol style="list-style-type: none"> 1. Slides 2. John Horton, Android Game Programming by Example, 2015 Packt Publishing
C10 Video Playback, Video Recording and Image Capture on Android Android Audio Recording and Playback Handling Different Android Devices and Displays	Lecture, conversation, exemplification	<ol style="list-style-type: none"> 1. Slides 2. Adam Gerber, Clifton Craig, Learn Android Studio-Build Android Apps Quickly, Springer 2015
C11 Android Printing Framework. An Android HTML and Web Content Printing Example Android Custom Document Printing	Lecture, conversation, exemplification	<ol style="list-style-type: none"> 1. Slides 2. Adam Gerber, Clifton Craig, Learn Android Studio-Build Android Apps Quickly, Springer 2015
C12 Gradle in Android Studio	Lecture, conversation, exemplification	<ol style="list-style-type: none"> 1. Slides 2. Adam Gerber, Clifton Craig, Learn Android Studio-Build Android Apps Quickly, Springer 2015
C13 Security in Android apps	Lecture, conversation, exemplification	
C14 Theoretical evaluation	Written test	

Recommended bibliography / Bibliografie		
- http://developer.android.com/guide/index.html - https://coronalabs.com/resources/tutorials/getting-started-with-corona/ - Daniel Williams, Corona SDK Application Design, ISBN 978-1-84969-736-1, 2013 - Adam Gerber, Clifton Craig, Learn Android Studio-Build Android Apps Quickly, Springer 2015 - Onur Cinar, Android Quick APIs Reference, ISBN13: 978-1-484205-24-2, 2015 - John Horton, Android Game Programming by Example, 2015 Packt Publishing - Onur Cinar, Android Quick APIs Reference, ISBN13: 978-1-484205-24-2, 2015		
8.2. Seminar, lab / Seminar, laborator	Teaching/learning strategies / Metode de predare/ învățare	Remarks, details / Observații
L1. (2h) Download. Installation. Description programming environment Hello simple application type. <i>Student's projects proposal</i>	Problem solving, dialogue, collaborative learning	The teacher shows the problem, provide details and answer questions, check / assess how students solved problems
L2. (2h) Android Studio. Calculator Application. Math app using text files	Problem solving, dialogue, collaborative learning	The teacher shows the problem, provide details and answer questions, check / assess how students solved problems
L3. (2h) Android Studio. Hello simple application type. Calculator Application. Math app using text files	Problem solving, dialogue, collaborative learning	The teacher shows the problem, provide details and answer questions, check / assess how students solved problems
L4 (2h) Android Studio. Activity app. List activity app	Problem solving, dialogue, collaborative learning	The teacher shows the problem, provide details and answer questions, check / assess how students solved problems
L6. (2h) Android Studio. Many Activity application. Fragment Activity.app	Problem solving, dialogue, collaborative learning	The teacher shows the problem, provide details and answer questions, check / assess how students solved problems
L6. (2h) Android Studio.. SQLite database application	Problem solving, dialogue, collaborative learning	The teacher shows the problem, provide details and answer questions, check / assess how students solved problems
L7 (2h) Evaluation the individual projects		
Recommended bibliography / Bibliografie		
- http://developer.android.com/guide/index.html - https://coronalabs.com/resources/tutorials/getting-started-with-corona/ - Daniel Williams, Corona SDK Application Design, ISBN 978-1-84969-736-1, 2013 - Adam Gerber, Clifton Craig, Learn Android Studio-Build Android Apps Quickly, Springer 2015 - Onur Cinar, Android Quick APIs Reference, ISBN13: 978-1-484205-24-2, 2015 - John Horton, Android Game Programming by Example, 2015 Packt Publishing - Onur Cinar, Android Quick APIs Reference, ISBN13: 978-1-484205-24-2, 2015		

9. Correlations between the content of the course and the requirements of the IT field / Coroborarea conținuturilor disciplinei cu așteptările reprezentanților comunității epistemice, asociațiilor profesionale și angajatorilor reprezentativi din domeniul aferent programului

The content is consistent with structure similar courses from other universities and covers the necessary fundamental issue of familiarity with the design and implementation of applications for mobile devices using Android Studio.

10. Evaluation / Evaluare*

Activity / Tip de activitate	10.1. Evaluation criteria / Criterii de evaluare**	10.2. Evaluation methods / Metode de evaluare***	10.3. Weight in the averaged mark / Pondere din nota finală
10.4. Lecture / Curs	Knowledge of basic concepts of programming mobile devices	Evaluation	20%
10.5. Seminar/ lab	The ability to implement the proposed problems at labs	individual evaluation	30%
	The ability to implement a complex project	individual evaluation	50%
10.6. Minimal knowledge for passing / Standard minim de performanță			
-Understanding the terminology and concept specific to mobile devices (hardware, operating systems, programming platforms, AndroidStudio classes). -Ability to write a simple project in AndroidStudio (2-3 related options in menu), to compile and run it successfully(labs) -Design, development, test and <u>explain</u> a sample mobile applications project for smartphones (minimum 2x3 menu options) using Android Studio, Unity, Xamarin etc (homework/individual project)			
The final grade is computed as a weighted average of grades obtained for components described in 10.4 and 10.5. The exam is passed if each individual grade obtained at components 10.4 and 10.5 (i.e. both lecture and lab evaluations) are greater or equal to 5. This rule is enforced for all exam periods. The student need to retake only the failed component (course or lab, respectively), unless the student wishes to re-take both			
Failure to meet the minimum standards regarding to physical presence at courses and labs (UVT rules), leads to recontracting discipline.			

Date/ Data completării

01.09.2020

Signature (lecture) /
Semnătura titularului de curs

Signature (seminar)
Semnătura titularului de seminar

Signature (director of the department)
Semnătura directorului de departament