

Mobile Applications Development

1. **Course number and name:** 020DMOES4 Mobile Applications Development
2. **Credits and contact hours:** 4 ECTS credits, 2x1:15 contact hours
3. **Instructor's or course coordinator's name:** Dany Mezher
4. **Text book:**
 - a. **Other supplemental materials:**
Official documentation from Apple and Android developer sites
5. **Specific course information**
 - a. **Catalog description:**
Mobile applications: Opportunities and challenges – iOS programming: Application structure, Swift programming language, MVC design pattern, application lifecycle, Visual components, protocols and extensions, gesture recognizers, TableViews and CollectionViews, Core Services (Core Data, Core Location, Core Motion, MapKit, iCloud) – Android Programming: Application Structure, Activity, lifecycle and callbacks, InstanceState, Ressources and Assets, visual components, actions and listeners, Fragments and navigation, data persistence, Services, Content Providers, System services.
 - b. **Prerequisites or co-requisites:** 020MCJES3 Design Patterns in Java
 - c. **Required:** Elective for CCE students
6. **Specific goals for the course**
 - a. **Specific outcomes of instruction:**
 - The student will be able to design a complex mobile application
 - The student will be able to implement a full functioning application on iOS and/or on Android

b. KPI:

KPI	c1	c3	i2	j1	k1	k2	k3
Covered	x	x	x	x		x	x
Assessed	x	x			x	x	x

7. Brief list of topics to be covered

Lectures	Description
1	Mobile applications: opportunities and challenges
Part 1. Programming for iOS	

1	Application structure
4	Swift programming language
2	MVC, navigation and application lifecycle
2	Visual components
1	Protocols and extensions
1	Gesture recognizers
1	TableViews and CollectionViews
1	CoreLocation, MapKit
1	Persistence and CoreData
1	Animations, CoreMotion
1	iCloud
Part 2. Programming for Android	
1	Application structure
2	Activity, InstanceState, lifecycles and callbacks
1	Visual components
1	Actions and callbacks
1	Resources and assets
1	Fragments and navigation
1	Data persistence
1	Interacting with other applications
1	Services
1	Content providers