

<b>Course title: iOS Programming</b>
Course code: 63053
ECTS credits: 6
Requirements: None
<b>Basic information</b>
Level of studies: Undergraduate applied studies
Year of study: 3
Trimester: 8
Goal: The student should learn the basic principles of mobile applications development for the hardware platforms associated with the iOS operating system. In this course, the student should get familiar with the Xcode IDE and Cocoa Touch development environments, and learn how to use the object-oriented programming language SWIFT for IOS application development.
Outcome: The student has learned the concept of object-oriented programming in SWIFT programming language and is able to create more secure applications for the iOS operating system, by creating more reliable code. The student is able to use various advanced tools that can enrich the functionality of created applications.
<b>Contents of the course</b>
Theoretical instruction
1. Introduction to Swift object-oriented concept : variable and function, scope and namespace, object type and instance.
2. Swift embedded types: numbers, strings, ranges, tuples, Optionals, arrays, dictionaries, and set.
3. Declaration, Instantiation and adopting of Swift object types: enums, structs, and class
4. Advanced Swift functionalities: protocol and generic.
5. Swift version innovations: revised APIs, new Foundation bridged types, and more
6. Xcode project life-cycle from beginning to the debugging and App Store—upload.
7. Application interface construction with nib editor and Interface Builder.
8. Cocoa event-driven model implementation with main design patterns and features
9. Communication between Swift, Cocoa C and Objective-C API-a.

Practical instruction (Problem solving sessions/Lab work/Practical training)
1. iOS Developer Project - Table View and Features
2. iOS Developer Project - UI Collection View
3. iOS Developer Project - View Controllers
4. iOS Developer Project - App with CoreData
<b>Textbooks and References</b>
1. M. Neuburgi, "OS 10 Programming Fundamentals with Swift, Xcode, and Cocoa Basics", 3rd Edition, Published by O'Reilly Media, Inc.,2016.
2. A. Hillegass,"Objective C Programming The Big Nerd Ranch Guide", 2nd Edition, Published by Big Nerd Ranch Guides, 2013.
<b>Number of active classes (weekly)</b>
Lectures: 4
Practical classes: 3
Other types of classes: 0
<b>Grading (maximum number of points: 100)</b>
<b>Pre-exam obligations: Points</b>
Activities during lectures:
Activities on practical exercises: 40
Seminary work:
Colloquium: 10
<b>Final exam: Points</b>
Written exam: 50
Oral exam:
<b>Lecturer</b>
Goran Zajić, PhD
<b>Associate</b>