<table>
<tr><td>Subject code:
P.5(3)</td><td colspan="3">Subject name: Mobile Application Software Engineering</td></tr>
<tr><td>Study load:
5 ECTS</td><td>Load of contact hours: 68</td><td>Study semester:
Autumn</td><td>Assessment:
Credit / No credit</td></tr>
<tr><td>Objectives:</td><td colspan="3">The goal of this course is to gain knowledge of creating mobile app prototypes. Creating MVPs. Market research. Collaboration instruments. And get understanding how to prepare App Store listing and publish the app.</td></tr>
<tr><td>Course outline:</td><td colspan="3">Topics covered:

1. Type of Mobile apps
2. B2B, B2C and SaaS.
3. Modern development practices
4. Work with Git
5. Blue oceans strategy and market research
6. Market shares between different Markets, Countries etc
7. Basics of product management
8. MVP
9. Prototyping and Customer Journey Maps
10. Fail Fast
11. Freelance platforms
12. Native Frameworks
13. 3rd party frameworks
14. App architecture
15. Analytics
16. Server without server and client-server apps.
17. Task management
18. UX Best practices
19. UI Best practices
20. Localization
21. First session
22. App metadata
23. Publication of apps and how to pass app store review. Common pitfalls.
24. Certificates and code-sign
25. Developer programs

Contact lessons will be divided into two parts: lectures and workshops with individual and team tasks.</td></tr>
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Learning Outcomes:	In the end of the course students will achieve following skills: 1. Find prospective markets and categories. 2. Basic understanding of product economy and metrics like ARPU, ROI, COGS, etc. 3. Understand the mobile app development process. 4. Prototyping and MVP creating. 5. Know how to build first sessions 6. Know how to publish the app on App Store. 7. Be able to build small standalone apps which fit market needs.
Assessment Methods:	Assessment is split into two parts: tests, individual tasks, team tasks during course (60% of points) and group project in the end of the course (40% of points).
Teacher(s):	Vladislav Polyanskiy
Prerequisite subject(s):	Objective-C, Java
Compulsory Literature:	“Clean Code: A Handbook of Agile Software Craftsmanship” by Robert C. Martin “Head First Design Patterns: A Brain-Friendly Guide” by Eric Freeman, Bert Bates, Kathy Sierra, and Elisabeth Robso The Pragmatic Programmer by David Thomas
Replacement Literature:	Refactoring: Improving the Design of Existing Code, 2nd Edition by Martin Fowler “Cracking the Code Interview: 189 Programming Questions & Solutions”by Gayle Laakmann McDowell.
Participation requirements:	Lower limit of lectures attendance is 80%, each test and individual project must be presented by end of the course.

Independent work:	1. Market research. 2. Git basics. 3. Create app prototypes and CJM with Figma 4. Create basic app economy model 5. Group task: develop and present the app concept 6. Group task: develop presented app and publish it on app store
Grading criteria scale or the minimal level necessary for passing the subject:	Failed < 50 points Passed >= 50 points **Points distribution:** Tests: 20 points Individual Tasks: 10 points Homework reports: 20 points Pitch sessions: 10 points App concept presentation (group task): 20 points Publication of the app on App Store (group task): 20 points
1) Date 1	**Lecture 1** Classroom presentation: Mobile development basics. Classroom presentation: Mobile Apps (MA) types.
2) Date 2	**Practical class 1** Group classroom task: Teams creation and basic discussion
3) Date 3	**Lecture 2** Classroom presentation: The cost of hypothesis & Basic prioritization model
4) Date 4	**Practical class 2** Business game: Generating and prioritization of hypothesis Homework: Additional hypothesis generation
5) Date 5	**Practical class 3** Business game: Unit-economy building for uber-like services and growth hacks. Homework: Growth hypothesis generation
6) Date 6	**Lecture 3** Classroom presentation: A/B testing basics Homework: Build A/B test prototypes
7) Date 7	**Lecture 4**

	Classroom presentation: Customer Development basics. CJM.
8) Date 8	**Practical class 4** Classroom task: Corridor testing. User testing.
9) Date 9	**Lecture 5** Classroom presentation: B2B, B2C and SAAS models
10) Date 10	**Lecture 6** Classroom presentation: Monetization models.
11) Date 11	**Practical class 5** Business game: Marketplaces and monetization models prioritization.
12) Date 12	**Lecture 7** Classroom presentation: Modern development practices Homework: Kanban, scrum methodologies.
13) Date 13	**Practical class 6** Classroom task: Work with modern tools from trello to atlassian.
14) Date 14	**Lecture 8** Classroom presentation: Work with Git
15) Date 15	**Practical class 7** Git commands discussion and samples of use.
16) Date 16	**Lecture 9** Classroom presentation: Blue oceans strategy and market research.
17) Date 17	**Lecture 10** Classroom presentation: Market shares between different Markets, Countries
18) Date 18	**Practical class 8** Team work. Research for estimation of apps and games revenue..
19) Date 19	**Lecture 11** Classroom presentation: Prototyping and Customer Journey Maps.
20) Date 20	**Practical class 9** Team work. MVP.
21) Date 21	**Practical class 10** Basics of freelance resources. How to start?
22) Date 22	**Practical class 11** Understanding of basic iOS frameworks
23) Date 23	**Lecture 12** Classroom presentation: App architecture. Common pitfalls.
24) Date 24	**Practical class 12**

	Work with Dependency Managers and 3rd party frameworks.
25) Date 25	**Practical class 13** Work with specific dev tools like leaks finder and others.
26) Date 26	**Practical class 14.** Work with proxy servers to sniff traffic to reverse engineer outcome and income requests
27) Date 27	**Lecture 13** Classroom presentation: task management.
28) Date 28	**Practical class 15** First session design.
29) Date 29	**Practical class 16** Work with team projects. Search for the correct monetization model. UX and UI talks.
30) Date 30	**Practical class 17** Certificates generation and codesigning.
31) Date 31	**Lecture 14** Classroom presentation: Publication of apps and how to pass app store review. App metadata preparation. .
32) Date 32	**Practical class 18** Students presentations: Pitch sessions, projects demonstration and discussion
33) Date 33	**Practical class 19** Work with a group project and its publication.
34) Date 34	**Practical class 20** Final class. Summarizing and QA session.