Title (Units):	**ITEC2015 iMakeApps (3,3,0)**

Course Aims: This course aims to offer an experience at the intersection between design, software development and mobile technologies. iMakeApps leverages successful mobile application examples to motivate students to design and create their own mobile apps/games. This course adopts studio-based learning approach which offers high degree of interaction, collaboration and constant feedbacks to students.

Technically, students learn about lightweight rapid prototyping of mobile apps and games. A variety of mobile technologies will also be introduced through a series of hands-on exercises.

Prerequisite: General Education - Quantitative Reasoning (GFQR)

Course Intended Learning Outcomes (CILOs):
Upon successful completion of this course, students should be able to:

No.	Course Intended Learning Outcomes (CILOs)
	Knowledge
1	Discuss and analyze mobile technology trends.
2	Explain how some popular mobile apps work and describe the underlying mobile technologies.
3	Describe the basic building blocks of mobile apps and games.
	Skill
4	Propose, design, develop and publish a simple mobile application.

Calendar Description: This course aims to offer an experience at the intersection between design, software development and mobile technologies. iMakeApps leverages successful mobile application examples to motivate students to design and create their own mobile apps/games. This course adopts studio-based learning approach which offers high degree of interaction, collaboration and constant feedbacks to students.

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Teaching and Learning Activities (TLAs):

CILOs	Type of TLA
1-2	Students will attend lectures to learn the concepts of various mobile technologies.
1-4	Students will work on a group project, and each project will be discussed in the design crits on three progressive stages: the pitch, the studio and the presentation, under studio-based pedagogy.
2-4	Students will attend programming sessions to gain practical skills on mobile application development.

Assessment:

No.	Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
1	Mobile app design and development projects	50%	1-4	Group projects to evaluate students' creativity and practical skill of mobile application development.

2	Written test	25%	2-4	An individual assessment will be conducted to evaluate the student's understanding in mobile application development.
3	Programming assignments	15%	3-4	Basic hands-on programming assignments.
4	Report	10%	1-2	Students will write a report on a mobile application of their choosing.

Assessment Rubrics:

Excellent (A)	• Able to design and construct an innovative app with original features. • Demonstrate an excellent self-learning capability. • Fully engaged in the design crit sessions.
Good (B)	• Able to design and construct a new app by combining and extending examples. • Demonstrate a good understanding of mobile technologies. • Full mastery of all basic mobile app development skills.
Average (C)	• Able to create a new app with substantial help and guidance. • Adequate knowledge on mobile app development and technologies.
Satisfactory (D)	• Produce a less than workable mobile application. • Able to explain the correct use of the basic components of mobile applications. • Demonstrate a satisfactory understanding of mobile technologies.
Unsatisfactory (F)	• Unable to identify and explain the basic components of mobile applications. • Unable to create his/her own app.

Course Content and CILOs Mapping:

	Content	CILO No.
I	Mobile applications and enabling technologies	1-2
II	Essential software development knowledge.	2-3
III	Invent and build your own app.	2-4

References:
- Khuloud Ahmad and Paul Gestwicki. Studio-based learning and App inventor for android in an introductory CS course for non-majors. In ACM SIGCSE ' 13, PP 287−292, 2013
- N. J. Anderson, *Getting started with NativeScript*. Birmingham, England: Packt Publishing, 2016.
- M. Branstein and N. Branstein, *Nativescript in Action*. Manning Publications, 2017.
- David Hillyard, Craig Sargent, Andrew Fenn, *Documenting Defold Programming Projects*, 2020.

Course Content:

Topic

I. Mobile applications and enabling technologies
   A. Examples from successful apps.
      a. Functionality and user experience
      b. Mobile marketing
   B. Mobile technologies
      a. Digital communication technologies
      b. Location based services
      c. Mobile platforms and operating systems

II. Essential software development knowledge.
   A. Mobile app development
      a. UI components
      b. Business Logic

   c. Data storage and network communications
  B. Mobile game development
   a. User interaction
   b. Physics and collision detection
   c. Multimedia and animation

III. Invent and build your own app.
  A. Software prototyping
  B. Iterative design methodology
  C. Design crits