

Course Title and Code	IT 342 Mobile and Cloud Computing
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I. Course Identification and General Information:

Course Title	Graduation Project II	Course Code	IT 342	Pre-requisite	IT 214
Department	Information Technology	Course Level	8	Credit Hours	3(3+0)

II. Course Description/Topics: The following course topics will be covered.

The course will introduce students to two major technologies: Mobile and Cloud Computing. The first part of the class will introduce the mobile computing and its applications, mobile technologies for developing regions, smart mobile devices, database and web client-server systems for achieving the goal of computing in wireless mobile environment anytime and anywhere, data management in mobile computing environment, and in particular in distributed mobile applications and virtualization. The second part of the course will introduce the benefits of cloud computing as well as the challenges associated with it. The course will introduce different models of services that are common in cloud computing, namely: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). The class will discuss the types of clouds and benefits of each one as well as its cost model. The course includes studying current commercial offerings from major providers of cloud computing solutions like Amazon, Google, Microsoft and others.

III. Course Outcomes: Summary of the main learning outcomes for students enrolled in the course.

1. After a lesson on Introduction, students will be able to understand the fundamental of Mobile Computing and mobile application development.
2. Students will be able to categorize types of Mobile Platforms & Architectures.
3. Students will be able to describe accurately their observations in an Android Operating System (Architecture & Programming) and diagram the life cycle.
4. Based on their knowledge of Database students will be able to create, design and implement it in their application.
5. Students will be able to understand the basic elements of Wireless Networks & Security.
6. After learning about the Mobile Multimedia, the Students will be able to name and explain the Multimedia Services.
7. Students will be able to compare and contrast the Multi-tasking in mobile apps.
8. After learning about HCI, the Students will be able to evaluate the usability of Mobile Apps.
9. By working in collaborative literature groups, students will be able to form one mobile application development framework (Android) and use it to implement their assignments and course project.
10. By the end of the course the students will be able to understand the concepts of cloud computing.

IV. Required Text:

- Application Programming - Mobile Computing, Marek Piasecki, Wroclaw, 2011, ISBN: 978-83-62098-25-5.
- Programming With Mobile Applications: Android (TM), IOS, And Windows Phone 7, Thomas J. Duffy, Course Technology, 2013, ISBN: 9781133628132.
- Cloud Computing: Concepts, Technology & Architecture, Thomas E, Prentice Hall, 2016, ISBN: 0133387526.

V. References:

- Mobile Computing Handbook, Mohammad Ilyas, Imad Mahgoub, CRC Press, 2004, ISBN: 0-8493-1971-4.
- Mobile Phone Programming and its Application to Wireless Networking, F. Fitzek, F. Reichert, Springer, 2007, ISBN: 978-1402059681.
- S60 Programming: A Tutorial Guide, P. Coulton, R. Edwards, H. Clemson, Wiley, 2007, ISBN: 978-0-470-02765-3.
- Microsoft Mobile Development Handbook, A. Wigley, D. Moth, P. Foot, Microsoft Press, 2007, ISBN: 978-0735623583.
- Programming Mobile Devices: An Introduction for Practitioners, T. Mikkonen Wiley, 2007, ISBN: 978-0470057384.
- Next generation wireless applications: creating mobile applications in a Web 2.0 and Mobile 2.0 world, P. Golding, Wiley, 2008, ISBN: 978-0-470-72506-1.