Pervasive and Mobile Computing
(Mobil Teknolojiler için Veri İşleme Teknikleri)
BLM5134

Assist. Prof. M. Amaç GÜVENSAN

Lecture Hours*: Monday, 09:00-12:00
Classroom: D-011

For further questions, please send an e-mail to amac@yildiz.edu.tr

Textbook:

1. Book - by Frank Adelstein (Author), Sandeep KS Gupta (Author), Golden Richard III (Author), Loren Schwiebert (Author), Fundamentals of Mobile and Pervasive Computing, 2004
2. Book, Micheal Saylor, The Mobile Wave: How Mobile Intelligence Will Change Everything, 2012
3. Book, Reza B'Far (Author), Mobile Computing Principles: Design and Developing Mobile Applications with UML and XML, 2004
4. Book, Robert Scoble (Author), Shel Israel (Author), Age of Context: Mobile, Sensor, Data and the Future of Privacy, 2013
5. Book, Dan Chalmers, Sensing and Systems in Pervasive Computing: Engineering Context Aware Systems, 2011
6. Book, Stefan Poslad, Ubiquitous Computing: Smart Devices, Environments and Interactions, 2009
7. Book, John Krumm, Ubiquitous Computing Fundamentals, 2009

Supplementary Text: Journal and Conference Papers

SOME SELECTED JOURNALS and CONFERENCES

Journals

- **IEEE, Transactions on Mobile Computing**
- **Elsevier, Pervasive and Mobile Computing**
- **Springer, Mobile Networks and Applications**
- **IEEE, Internet of Things**

Conferences

- **ACM, MobiHoc – Mobile Ad Hoc Networking and Computing**
- **IEEE, PerCom – Pervasive Computing and Communications**
- **ACM, MobiCom – Mobile Computing and Networking**
- **IEEE, MASS – Mobile Ad Hoc and Sensor Systems**
- **IEEE, ISSNIP – Intelligent Sensors, Sensor Systems and Information Processing**

COURSE OBJECTIVES	• **To provide guidelines, design principles and experience in developing applications for small, mobile devices, including an appreciation of context and location aware services** • **To introduce wireless communication and networking principles, that support connectivity to cellular networks, wireless internet and sensor devices.** • **To understand the use of transaction and e-commerce principles over such devices to support mobile business concepts** • **To appreciate the social and ethical issues of mobile computing, including privacy.**
COURSE OUTCOMES	• **To learn mobile computing principles and concepts** • **To explore both of theoretical and practical issues of mobile computing** • **To obtain the ability of designing and implementing mobile applications via using mobile technologies.**
COURSE CONTENT	• **Mobile Systems and Technologies** • **Mobile Operating Systems** • **Wireless Communication** • **Sensor Networks/Applications and Their Interaction with Mobile Technologies** • **Mobile Computing** • **Mobile Applications using the Sensor Data on Mobile Devices**

Tentative Schedule:

1. Introduction to Pervasive/Ubiquitous and Mobile Computing (26.09.2018)
2. Ambient Intelligence and Context Aware Systems (03.10.2018)
3. Sensor Networks (10.10.2018)
4. Mobile Devices, Operating Systems, Development Platforms (17.10.2018)
5. Sensors on Mobile Devices and Data Collection (24.10.2018)
6. Data Management and In-Situ Processing on Mobile Devices (31.10.2018)
7. How to Apply Machine Learning Techniques on Mobile Platforms(07.11.2018)
8. Sensors on Smartphones and Sensor Data Collection (14.11.2018)
9. **Midterm (21.11.2018)**
10. Crowdsourcing and Open Data (28.11.2018)
11. Wireless Communication (05.12.2018)
12. Security and Privacy in Mobile Computing (12.12.2018)
13. Location-based Services and Applications (19.12.2018)
14. Internet of Things (IoT) (26.12.2018)

GRADING (could be revised)				
	Midterm	**Homework**	**Semester Project**	**Final**
Number	1	2-3	1	1
Impact	20%	%25	%25	30%