



### Course description:

This course covers concepts of mobile computing and current technologies including mobile communication, the 2G and 3G communication systems, mobile IP, and mobile TCP. Will also include coverage of databases in mobile systems, methods of data caching, dissemination and synchronization, Bluetooth, IrDA and ZigBee protocols, data security, mobile ad hoc and wireless sensor networks, and languages and operating systems for mobile devices.

### Aims of the course:

This course introduces the concepts of mobile computing and current technologies including mobile communication, the 2G and 3G communication systems, mobile IP, and mobile TCP. Will also include coverage of databases in mobile systems, methods of data caching, dissemination and synchronization, Bluetooth, IrDA and ZigBee protocols, data security, mobile ad hoc and wireless sensor networks, and languages.

### Intended Learning Outcomes: (ILOs)

- A. Students will be able to explain major concepts and techniques in the field of mobile computing.
- B. Students will be able to explain 2G and 3G communication systems,
- C. Students will be able to explain mobile IP, and mobile TCP.
- D. Students will be able to explain the role of databases in mobile systems and methods of data caching, dissemination and synchronization.
- E. Students will be able to explain Bluetooth, IrDA and ZigBee protocols
- F. Students will be able to explain mobile device data security, mobile ad hoc and wireless sensor networks.
- G. Students will demonstrate the use of languages and operating systems for mobile devices in a small development exercises.

### Course structures:

Week	Credit Hours	ILOs	Topics	Teaching Procedure	Assessment methods
1	3	A	Introduction to Distributed Systems,	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file



2	3	A	Introduction to Mobile Computing	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
3, 4	6	A	Mobile Computing Models	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
5, 6	6	B	Location Based Services	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
7, 8	6	C	Mobile Networking	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
9, 10	6	C	Introduction to Pervasive Computing	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
11, 12	6	D	The Gator Tech Smart House	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
13, 14	6	E	Vehicular Ad Hoc Networks (VANET)	Presentation methods and techniques, Sources of information and Instructional	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam

				Aids	d) Activity file
15	3	F,G	WiFi, LiFi	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
16	3	F,G	Bluetooth and Zigbee	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file

## References:

### A. Main Textbook:

Mobile Computing, by Raj Kamal, Oxford University Press, 2008.

## Assessment Methods:

Methods	Grade	Date
First Exam	20%	
Second Exam	20%	
Assignments (Reports /Quizzes/ Seminar / Tutorials ....)	10%	
Final Examination	50%	