

## Mobile Computing



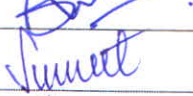
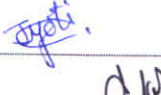


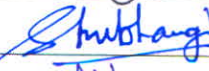

Semester III	Subject Code: MS31902	Lectures: 60
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### Objectives:

The syllabus aims in equipping students with,

- familiarity of buzz words and technology of mobile communication
- understanding of GSM architecture
- understanding the issues relating to Wireless applications
- new technology Android operating system and programming

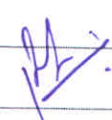

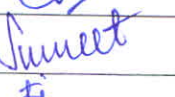
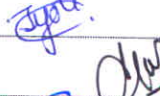
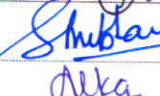
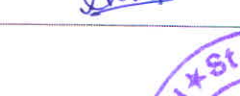


<b>Unit 1: Android Operating System</b>	22
<b>Chapter 1 : Introduction to Android Operating System</b> <ul style="list-style-type: none"> <li>• Overview and evolution of Android</li> <li>• Features of Android</li> <li>• Android architecture</li> <li>• Components of an Android Application, Manifest file</li> </ul>	10
<b>Chapter 2 : Android Programming</b> <ul style="list-style-type: none"> <li>• Android Activity and Service Lifecycle</li> <li>• UI Designing (layout designing)</li> <li>• All components (e.g Button , Slider, Image view, Toast etc.)</li> <li>• Event Handling</li> <li>• Database Handling</li> </ul>	12

Sr. No.	BOS member		Sign
1	Dr. Razak Sayyed	Subject Expert	
2	Prof. Abhijit Sathe	Subject Expert	
3	Prof. Sonali Deshmukh	Subject Expert	
4	Mr. Sumeet Kakroo	Industry Expert	
5	Ms. Jyoti Sharma	Alumni	
6	Prof. Ashwini Kulkarni	Chairman	
7	Prof. Shubhangi Jagtap	Internal Faculty	
8	Prof. Alka Kalhapure	Internal Faculty	



<b>Unit 2: Mobile computing</b>	7
<b>Chapter 3 : Introduction to Mobile Computing</b> <ul style="list-style-type: none"> <li>• Introduction and need for Mobile computing</li> <li>• Mobility and portability</li> <li>• Mobile and Wireless devices</li> <li>• Cellular Systems in wireless transmission</li> </ul>	3
<b>Chapter 4 : Medium Access Control Layer</b> <ul style="list-style-type: none"> <li>• Why specialized MAC? <ul style="list-style-type: none"> <li>a. hidden and exposed terminals</li> <li>b. near and far terminals</li> </ul> </li> <li>• General Concepts and comparison of SDMA, FDMA, TDMA , CDMA</li> </ul>	4

<b>Unit 3: Mobile computing protocols</b>	13
<b>Chapter 5 : Mobile IP</b> <ul style="list-style-type: none"> <li>• Goals, assumptions and requirements</li> <li>• Entities and terminologies</li> <li>• Agent Discovery</li> <li>• Registration</li> <li>• Tunneling and encapsulation</li> <li>• Optimization</li> <li>• Reverse Tunneling</li> <li>• IPv6</li> <li>• IP micro-mobility support – Cellular IP, Hawaii, Hierarchical, mobile IPv6</li> <li>• Mobile Routing : <ul style="list-style-type: none"> <li>- Destination sequence distance Vector, Dynamic Source Routing,</li> <li>- Alternative Metrics, Adhoc Routing Protocols -Flat, Hierarchical,</li> <li>- Geographic-position-assisted</li> </ul> </li> </ul>	8

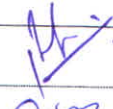
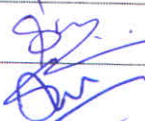

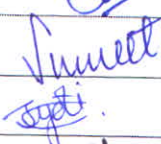

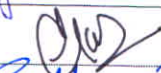
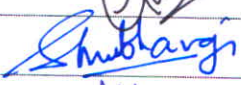
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<p><b>Chapter 6 : Mobile TCP</b></p> <ul style="list-style-type: none"> <li>• Traditional TCP             <ul style="list-style-type: none"> <li>- Congestion Control, Slow start, Fast retransmit / Fast recovery</li> <li>o Implications on mobility</li> </ul> </li> <li>• Classical TCP improvements             <ul style="list-style-type: none"> <li>Indirect TCP, Snooping TCP, Mobile TCP, Fast retransmit / Fast recovery, Transmission / Timeout freezing, Selective Retransmission, Transaction oriented TCP</li> </ul> </li> <li>• TCP over 2.5/3G wireless networks</li> </ul>	5
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<p><b>Unit 4: Mobile Services</b></p>	8
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<p><b>Chapter 7 : GSM</b></p> <ul style="list-style-type: none"> <li>• Mobile Services (Bearer, Tele-and-supplementary services)</li> <li>• System Architecture             <ul style="list-style-type: none"> <li>- Radio subsystem</li> <li>- Network and switching subsystem</li> <li>- Operation subsystem</li> </ul> </li> <li>• Protocols</li> <li>• Localization and calling</li> <li>• Handover</li> <li>• GPRS</li> <li>• 3G mobile networks             <ul style="list-style-type: none"> <li>- UMTS</li> <li>- UTRAN</li> </ul> </li> </ul>	6
<p><b>Chapter 8 : Wireless Application Protocol Architecture</b></p>	2

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