<table>
<tr><td colspan="2">Devi Ahilya University, Indore, India
Institute of Engineering & Technology</td><td colspan="6">BE IV Year Information Technology</td></tr>
<tr><td>Subject Code & Name
4IT454 Wireless Protocols & Mobile Computing</td><td rowspan="2">Periods Hours/ Week
Lectures- 4
Tutorials-0
Practical- 2</td><td>Marks</td><td>Th</td><td>CW</td><td>SW</td><td>Pr</td><td>Total</td></tr>
<tr><td>Duration of Theory Paper:
3 Hours</td><td>Max</td><td>100</td><td>50</td><td>50</td><td>50</td><td>250</td></tr>
<tr><td></td><td></td><td>Min</td><td>35</td><td>25</td><td>25</td><td>25</td><td>110</td></tr>
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Objective: To give exposure to the students on wireless communication with emphasis on protocol design and computing on mobile nodes.

Course of Contents

Unit I

Introduction, Wireless Networks, Wireless VS Wired Networks, Mobile Devices, Mobile Applications, Mobile Environment and limitations, Wireless transmission, Multiplexing, Modulation, Spread spectrum-DSSS & FHSS

Unit II

Cellular networks- overview, Cellular Concept, Frequency Reuse, Channel Allocation, Call Setup, Cell Handoffs, Location Management, Medium Access Control-motivation for specialized MAC, SDMA,FDMA,TDMA, Reservation Aloha, PRMA, MACA, DSMA, CDMA, GSM-Basics, GSM-Air Interface, protocols, localization & calling

Unit III

Wireless LANs**,** 802.11 System & Protocol Architecture, MAC layer-DFWMAC-DCF with CSMA/CA, CTS/RTS extension & polling, MAC management, Mobile IP, TCP over wireless, TCP and mobility

Unit IV

Designing mobile applications, Mobile agents transcoding and proxy architecture, wireless web and WAP, J2ME basics, Mobile Application development using J2ME, Data broadcasting, and Location based computing,

Unit V

Information management: data dissemination and broadcast models, mobile database and mobile transaction, location-Independent and location-dependent computing models, Human-computer interactions: reduced user interfaces, wearable and pervasive computing; Use of XML & UML in mobile interfaces

Books Recommended:

[1] J Schiller, Mobile Communications, Pearson Education, 2003
[2] W. Stalling, Wireless Communications & Networks, Pearson Education, 2/e, 2005
[3] A Talukdar, RYavagal, Mobile Computing: Technology, Applications & Service Creation, McGrawHill, 2006
[4] Reza B'Far, Mobile Computing Principles; Designing and Developing Mobile Applications with UML and XML, Cambridge University Press, 2005.
[5] James Keogh, The Complete Reference J2ME, Tata McGraw Hill, 2003