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| **NAME OF DEPARTMENT:** | | | | | | | | | | | | | | | | | | | School of Computing | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Course Name:** | | | | | | | | | Bachelor of Computer Applications (BCA) | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | |  | | | | | | |
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| **Subject Name:** | | | | | | | | | Mobile Computing | | | | | | | | | | | | | | | | | | | | | | | | **Subject Code:** | | | | | | TBC-604(4) | | | | | | |
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| **1** | **Contact Hours:** | | | | | | | | | | 48 | | | | |  | | | | | | | | | | | | | | | | | | **L** | | 3 | | | | **T** | | | 1 | **P** | 0 | | |
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| **2** | **Examination Duration(Hrs):** | | | | | | | | | | | | | | | | | | | | |  | **Theory** | | | | | 0 | 3 |  | **Practical** | | | | 0 | | | 0 | |  | | | | | |
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| **3** | **Relative Weightage:** | | | | | | | | | | | | |  | | | | | **CWE:** | | | | | | | 25 | | **MTE:** | | | 25 | | **ETE:** | | | | 50 | | | | |  | | | | |
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| **4** | **Credits:** | | | | | | 0 | | | 4 |  | | | | | | | | | | | | | |  | | |  | | |  | |  | | | |  | | | | |  | | | | |
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| **5** | **Semester:** | | | | | | |  | | |  | | | | **\*** | | |  | | |  | | |  | | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | | **Autumn** | | | | | | **Spring** | | | | | | | | **Both** | | | | | | |  | | | | | | | | | | | | | | | | | | |
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| **6** | **Pre-Requisite:** | | | | | | | | | | | | Networking Principles | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **7** | **Subject Area:** | | | | | | | | | | | | Mobile Computing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **8** | **Objective:** | | | | | | | | | | | | To familiarize students with the understanding of working of mobile systems and its issues. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **9** | **Course Outcome:** | | | | | | | | | | | | A student who successfully fulfills the course requirements will be able to gain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 1** | | | | A working understanding of the characteristics and limitations of mobile hardware devices including their user-interface modalities. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 2** | | | | The ability to develop applications that are mobile-device specific and demonstrate current practice in mobile computing contexts. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 3** | | | | A comprehension and appreciation of the design and development of context-aware solutions for mobile devices. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 4** | | | | An awareness of professional and ethical issues, in particular those relating to security and privacy of user data and user behavior. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 5** | | | | Understand the Ad-hoc Network and Routing in Ad-hoc Mobile Networks. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **10** | | **Details of the Course:** | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Unit No.** | | | | **CONTENT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **CONTACT HOURS** | | | | | | |
| **1** | | | | Issues in Mobile Computing, Fundamentals of cellular systems, Cellular system infrastructure, Bluetooth Technology, Wireless Multiple Access Protocols, Channel Allocation in Cellular Systems. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 | | | | | | |
| **2** | | | | Data Management Issues: Mobility, Wireless Communication and Portability, Data Replication and Replication Schemes, Basic Concept of Multihopping, Multicluster Architecture. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 10 | | | | | | |
| **3** | | | | Location Management, Location Based Services, Automatically Locating Mobile Uses, Locating and Organizing Services, Issues and Future Directions, Mobile IP, Comparison of TCP and Wireless. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 10 | | | | | | |
| **4** | | | | Transaction Management, Data Dissemination, Cache Consistency, Mobile Transaction Processing, Mobile Database Research Directions, Security Fault Tolerance for Mobile N/W. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 10 | | | | | | |
| **5** | | | | Ad-hoc Network, Routing in Ad-hoc Mobile Networks, Dynamic State Routing (DSR), Route Maintenance and Routing error, Fisheye Routing (FSR), Ad-hoc on Demand Distance Vector (ADDV). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 10 | | | | | | |
|  | | | | **TOTAL** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **48** | | | | | | |
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| **11** | | **Suggested Books:** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | |
| **Sl. NO.** | | | **NAME OF AUTHORS/BOOKS/PUBLISHERS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **YEAR OF PUBLICATION** | | | | | |
| **1** | | | Shambhu Upadhyaya, Abhijeet Chaudhary, Kevin Kwiat, Mark Weises, “Mobile Computing”, Kluwer Academic Publishers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2002 | | | | | |
| **2** | | | UWE Hansmann, Lothar Merk, Martin-S-Nickious, Thomas Stohe, “Principles of Mobile Computing”, Springer International Edition | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2003 | | | | | |