

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPT./CENTRE: **Computer Science and Engineering**

1. Subject Code: **CSN-521** Course Title: **Mobile and Pervasive Computing**

2. Contact Hours: **L: 3 T: 1 P: 0**

3. Examination Duration (Hrs.): **Theory 0 3 Practical 0 0**

4. Relative Weight: **CWS 25 PRS 00 MTE 25 ETE 50 PRE 00**

5. Credits: **0 4** 6. Semester $\sqrt{\hspace{1cm}}$
Autumn Spring Both

7. Pre-requisite: **CS - 221**

8. Subject Area: **PEC**

9. Objective: To familiarize students with the concepts and issues of mobile and pervasive computing technologies.

10. Details of the Course:

Sl. No.	Contents	Contact Hours
1.	Introduction to mobile computing and pervasive/ubiquitous computing, Pervasive computing systems - HP's Cooltown, Microsoft's EasyLiving	5
2.	Enabling technologies for mobile and pervasive computing: sensor technology and wireless sensor networks, RFID technology, smartphones	10
3.	Mobile and pervasive networking: wireless TCP, Mobile IP, ad-hoc routing; data access and management; pervasive computing middleware: AURA, GAIA, ONE.WORLD, service discovery	10
4.	Context-aware computing: location-aware systems-Active Badge, RADAR, Cricket, GPS; location-aware services; issues and challenges in context-awareness	5
5.	Security and privacy in pervasive and mobile computing environment	5
6.	Applications: Internet of Things, smart homes/offices, intelligent traffic systems, social computing, wearable computing	7
Total		42

11. Suggested Books:

Sl. No.	Name of Books/Authors
1.	Jochen Burkhardt, Pervasive Computing : Technology and Architecture of Mobile

	Internet Applications 14th Edition, Pearson Education Singapore Pte Ltd 2002.
2.	Stefan Poslad, Ubiquitous Computing: Smart Devices, Environments And Interactions 1st Edition, 2010, Wiley India Pvt Ltd
3.	Laurence T. Yang, Handbook On Mobile And Ubiquitous Computing Status And Perspective, 2012, CRC Press