SUBJECT DESCRIPTION FORM

Subject Title: Wireless Computing Systems and Applications

Subject Code: COMP5326

Credit Value: 3

Pre-requisite: (Subject title and code no, if any)

Computer Communications Networks (COMP551) or
Internet Infrastructure and Protocols (COMP5311) or equivalent
[waived for students of MSc in Software Technology and MSc in E-Commerce]

Recommended background knowledge:

Knowledge of Java programming

Mutual Exclusions: Nil

Learning Approach:

42 hours of Class activities including - lecture, tutorial, lab, workshop seminar where applicable

Assessment:

Continuous Assessment	45%
Test, and Examination	55%

Objectives:

After completing this subject, the students will learn about:

1. underlying technologies for mobile/wireless computing systems;
2. related wireless networking standards; and
3. various mobile and wireless applications.

The focus is on technologies/standards for supporting wireless networking and mobile data applications.

The Department reserves the right to update the syllabus contents. Please note that the learning approach for the same subject could vary slightly due to different delivery modes.

Learning Outcomes:

After completing this subject, students should be able to:

1. acquire a good knowledge of wireless computing systems and applications;
2. understand the standards/technologies for various wireless computing systems;
3. be aware of trends of wireless computing systems and applications; and
4. participate in team work, presentation and technical writing.

Keyword syllabus:

Systems and standards (particularly for supporting wireless networking and mobile data applications):

Basics and technical overview of mobile/wireless systems. Management issues (e.g., mobility, security).

IEEE 802.11 LANs. Bluetooth. Mobile IP. Wireless Application Protocol (WAP). Cellular data networks. Others (e.g., Ad-hoc networks).

Applications:

Mobile commerce. Mobile payments. Other mobile/wireless data applications. Cases/examples. Development tools (e.g., J2ME).

Indicative reading list and references:

Books:

Deitel, H. M., *et al*., 2002, *Wireless Internet and Mobile Business: How to Program*, Prentice Hall.
Gast, M. S., 2002, *802.11 Wireless Networks: The Definitive Guide*, O'Reilly & Associates.
Jamalipour, A., 2003, *The Wireless Mobile Internet: Architectures, Protocols and Services*, John Wiley and Sons.
Norris, M., 2001, *Mobile IP Technology for M-Business*, Artech House.
Pandya, R., 2000, *Mobile and Personal Communication Systems and Services*, IEEE Press.
Perkins, C. E., 1998, *Mobile IP: Design Principles and Practices*, Addison-Wesley.
Sadeh, N. M., 2002, *M-Commerce: Technologies, Services, and Business Models*, John Wiley and Sons.
Stallings, W., 2005, *Wireless Communications and Networks*, Pearson Prentice Hall.
Thurwachter, C. N., 2002, *Wireless Networking*, Prentice Hall.
Toh, C. K., 2001, *Ad Hoc Mobile Wireless Networks: Protocols and Systems*, Prentice Hall.

Journals:

IEEE Transactions on Mobile Computing
IEEE Pervasive Computing
IEEE Transactions on Wireless Communications
IEEE Journal on Selected Areas in Communications
ACM Wireless Networks
ACM Mobile Networks and Applications