

Dept of Civil and Environmental Engineering, SNU

### Syllabus

- Course Number: 447.538A /
- Course Name : Location-Based Information Systems
- Keywords : coordinates, location determination, LBS, navigation
- Lecturer : Kiyun Yu(35-406, 880-1355, kiyun@snu.ac.kr)
  
- Course Objectives  
This course is to teach several major technological components of LBS and its applications.
  
- Main Study Topics  
1) Various global and local coordinate systems, 2) Wireless communication theory and cellular networks, 3) GPS, 4) Indoor positioning methods, 5) LBS architecture and system developments, 6) Navigation application algorithms.
  
- Credit : 3
  
- Text : Location-Based Services, Axel Kupper, John Wiley & Sons, Ltd.
  
- Prerequisites  
Understanding of SIS (undergraduate course)
  
- Lecture Schedule
  - Session 1 (3wks) : Global and local coordinate systems
  - Session 2 (5wks) : GPS and other positioning techniques  
GPS signal, ephemeris, GPS system components, positioning methods, receiver, DGPS, RTK, time, observation equations, indoor positioning

- Session 3 (5wks) : Location Based Service Systems  
wireless communication, cellular networks, outdoor positioning, indoor positioning, LBS architecture, LBS protocol, middleware
- Session 4 (2wks) : Navigation applications  
system architecture, database, map matching, routings
  
- Evaluations  
Presentations 70% Presence 30%
  
- Miscellaneous  
For notices and handouts, refer to <http://etl.snu.ac.kr> course homepage  
\* Proactive participations in conferences are highly recommended