Western Illinois University
School of Computer Sciences
CS 557 Topics on Computer Networks:
Protocol Supports for the Mobile IP
Spring 2017

Instructor: Kim, Yeongkwun, Ph.D.   **Course Credit**: 3
E-mail: Y-Kim2@ wiu.edu   **Lecture Hour**: Tue/Thu 12:30 PM – 1:45 PM
Office: Stipes 447 F (298-1351)
Office Hours:
    Tue: 10:00 AM – 10:50 AM, 2:30 PM ~ 4:30 PM
    Wed: 2:00 PM – 3:00 PM
    Thursday: 10:00 AM – 10:50 AM
    or Email

Text materials:
- RFC791: IPv4 Protocol Specification
- RFC 2460: IPV6 Protocol Specification
- RFC 3344: IP mobility support for IPv4
- RFC 6275: Mobility support in IPv6
- Mobile Communications (2nd ed.) by Jochen Schiller, Addison Wesley
- Computer Networking: A Top-down approach featuring the Internet by Kurose & Ross, Addison Wesley
- Efficient Reading of Papers in Science and Technology by Michael Hanson & Dylan McNamee

Course Objectives

Provide the student with an overall perspective of Mobile IP by covering the Internet protocol stacks especially, network layer (IP protocol), motivation for mobility, mobility problem in IP networks, mobility solutions, mobile IPv4 and mobile IPv6, and securities issues in mobile IPv4 and mobile IPv6. Provide also applications of mobile IP that students can have right vision for the mobility properties in the Internet. Also improve technical writing and oral discussion skills.

Method of Instruction: Lecture and seminar

Method of Evaluation

- **Homework Assignments:**   **20 points**
- **2 Exams**   **60 points**
- **Research project and presentation:**   **20 points**
  - 1 page proposal   2 points
  - Presentation & participation   8 points
  - Final report: 10 points

    Letter grade :

        ▫ A: ≥ 90
        ▫ B: ≥ 80
        ▫ C: ≥ 70
        ▫ D: ≥ 60
        ▫ F: < 60

Note 1: Point ranges for letter grades will be based on a number of factors, including absolute and relative performance. Instructor reserves the right to lower the scale if performance warrants it.

Note 2: Written Homework should be clearly **TYPED** as much as possible. **Otherwise, it will not be accepted!!!**

Note 3: All assignments are due at the first 5 minutes of class. Late assignments will be given 30 % penalty **BUT WILL NOT** be accepted after 24 hours of the due.

Note 4: No Make-up Exam will be given without **documented proof** of serious hardship. In case, student must be contact instructor immediately.

Note 5: One or two pop quizzes may be administered during the semester.

Note 6: The topic for the research project is **OPEN** but **SHOULD BE** related to the Mobile IP. The page length of the report should be 10 pages in 12 points, single space.

- **1 page proposal due: <u>February 16</u>**
  This proposal must include an overall **description of your topic**

- **5 pages draft due: <u>March 30</u>**

- **Presentation Powerpoint due: <u>April 18</u>**

- 10 pages report due: <u>**final exam schedule**</u>
  This report must include
  > **1) an introductory description of the topic**
  > **2) related works and your finding if applicable**
  > **3) a concluding remark**

Note 7: Class attendance is **FULLY** student responsibility.

- Active class participation is expected
- You may ask a question(s) at anytime during the class
- You are expected to attend all classes

Note 8: regarding e-mail

- I check email throughout the day from Monday through Friday, but please <u>allow 24 hours for a response from me during business days</u>. Between Friday evenings and Sunday nights, I rarely check email. So if you send me an email over the weekend, you will most likely receive a response from me the following Monday morning.

- <u>To ensure that your email reaches me safely, please put **CS557** in the "subject" header at all times</u>. Remember to be polite and respectful, and be careful and attentive to how the email is written; students are expected to use professional language and tone in all communications with the instructor, including e-mail correspondences.

- <u>If you do not receive an e-mail response from me within the specified response times above, take another look at the construction of your e-mail</u>. The tardiness or lack of a response on our part may be the result of an inattention to the prescribed method of professional e-mail correspondence. In that case, please revise with proper attention to e-mail etiquette and resend the e-mail.

Major Topics To Be Discussed
- Basics of the Internet protocol stack
- The need for mobile IP
- Mobile IP overview
- Agent advertisement
- Registration
- Tunneling (Reverse tunneling)
- Roaming
- Security issues
- Applications of mobile IP
- IP and mobile IP related RFCs

Plagiarism:

It is assumed that students will learn from each other and in many cases exchange ideas regarding projects, papers and assignments. It is also required that student complete their assignments as an individual effort. Copying retyping or taking other's work and turning it in as your own will result in a zero for the material and may further be dealt with using the University's established plagiarism policy.

Student Services Rights and Policies:

You should also review http://www.student.services.wiu.edu/ with regard to student rights and responsibilities and http://www.wiu.edu/provost/student/

Remarks:

The contents on this syllabus can be changed with advance notification.