



# HANYANG UNIVERSITY

## Hanyang International Winter School

|                     |                     |                                                                                                                                                                                                                                                                                                                                                                    |               |                   |         |   |
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| Faculty Information | Name                | Youngjoon Won                                                                                                                                                                                                                                                                                                                                                      |               |                   |         |   |
|                     | E-mail              | youngjoon@hanyang.ac.kr                                                                                                                                                                                                                                                                                                                                            |               |                   |         |   |
|                     | Home University     | Hanyang University                                                                                                                                                                                                                                                                                                                                                 |               |                   |         |   |
|                     | Department          | Dept. of Information Systems                                                                                                                                                                                                                                                                                                                                       |               |                   |         |   |
|                     | Homepage            | https://young.hanyang.ac.kr                                                                                                                                                                                                                                                                                                                                        |               |                   |         |   |
| Course Information  | Class No.           | TBA                                                                                                                                                                                                                                                                                                                                                                | Course Code   | Computer Networks | Credits | 3 |
|                     | Course Name         | Computer Networks                                                                                                                                                                                                                                                                                                                                                  |               |                   |         |   |
|                     | Lecture Schedule    | Mon-Fri / 9:00~15:00                                                                                                                                                                                                                                                                                                                                               |               |                   |         |   |
|                     | Course Description  | This course introduces the fundamentals of network (Internet) architectures and methods. Our emphasis is placed on how the Internet works in general.                                                                                                                                                                                                              |               |                   |         |   |
|                     | Course Objective    | Introducing the fundamentals of network (Internet) architectures and methods:<br>- fundamental concepts of networking and how they apply to the Internet<br>- hands on experience with networking protocols and analysis techniques<br>- how the Internet or DC are connected in general<br>- up-to-date research issues (e.g., Data Center, Internet measurement) |               |                   |         |   |
|                     | Prerequisite        | None                                                                                                                                                                                                                                                                                                                                                               |               |                   |         |   |
|                     | Materials/Textbooks | Course materials will be given in class.                                                                                                                                                                                                                                                                                                                           |               |                   |         |   |
| Evaluation          | Attendance          | 10 %                                                                                                                                                                                                                                                                                                                                                               | Quiz          | %                 |         |   |
|                     | Assignment          | 10 %                                                                                                                                                                                                                                                                                                                                                               | Mid-term Exam | 30 %              |         |   |
|                     | Presentation        | %                                                                                                                                                                                                                                                                                                                                                                  | Final Exam    | 40 %              |         |   |
|                     | Group Project       | %                                                                                                                                                                                                                                                                                                                                                                  | Participation | 10 %              |         |   |
|                     | Etc.                | Evaluation Item                                                                                                                                                                                                                                                                                                                                                    |               |                   | Ratio   |   |
|                     |                     | Midterm (Take Home Assignment)                                                                                                                                                                                                                                                                                                                                     |               |                   | 30 %    |   |
|                     |                     | Final Exam                                                                                                                                                                                                                                                                                                                                                         |               |                   | 40 %    |   |
| Daily Lecture Plan  | Day 1               | Introduction to Networks: Protocol, Layering                                                                                                                                                                                                                                                                                                                       |               |                   |         |   |
|                     | Day 2               | Introduction to Networks: ISPs, Internet Architecture                                                                                                                                                                                                                                                                                                              |               |                   |         |   |
|                     | Day 3               | Application Layer: Principles (RTT, Delay, Bandwidth), HTTP, DNS, others                                                                                                                                                                                                                                                                                           |               |                   |         |   |
|                     | Day 4               | Transport Layer: Socket, TCP, UDP, Reliable Data Transfer Design I                                                                                                                                                                                                                                                                                                 |               |                   |         |   |
|                     | Day 5               | Midterm Exams,<br>Transport Layer: Reliable Data Transfer Design II, Congestion Control                                                                                                                                                                                                                                                                            |               |                   |         |   |
|                     | Day 6               | Networking Layer: Internet Protocol, Internet Routing Algorithms                                                                                                                                                                                                                                                                                                   |               |                   |         |   |
|                     | Day 7               | Networking Layer: Internet Routing Algorithms                                                                                                                                                                                                                                                                                                                      |               |                   |         |   |
|                     | Day 8               | Data Link Layer: Multiple Access Protocol, Ethernet                                                                                                                                                                                                                                                                                                                |               |                   |         |   |
|                     | Day 9               | Final Exam                                                                                                                                                                                                                                                                                                                                                         |               |                   |         |   |