

Introduction to Computer Networks

Polly Huang

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Vital Information

- Course : 電腦網路導論
- Taught by : 黃寶儀
- Class No. : EE4020
901 E31110
- Session : 02
- Credit : 3 units

99.99% in English

- All communication in English, including
 - Lectures
 - Homework
 - Exams
 - In/off-class interaction
- One exception
 - You may fall back in Mandarin in class if you are really short of words

Be Aware

- Assignments and exams are accepted **only in English**
- Credits are granted only when the English is **comprehensible**
 - Keep your words/sentences simple
 - The point is to communicate

And to Avoid Confusion...

- Please make sure **your names** are clearly written **in Chinese** for all the write-up submissions.
 - Assignments
 - Exams
- Just for the grading purpose

Alternatives

- Another session in Fall and another session in Spring are fully in Mandarin.

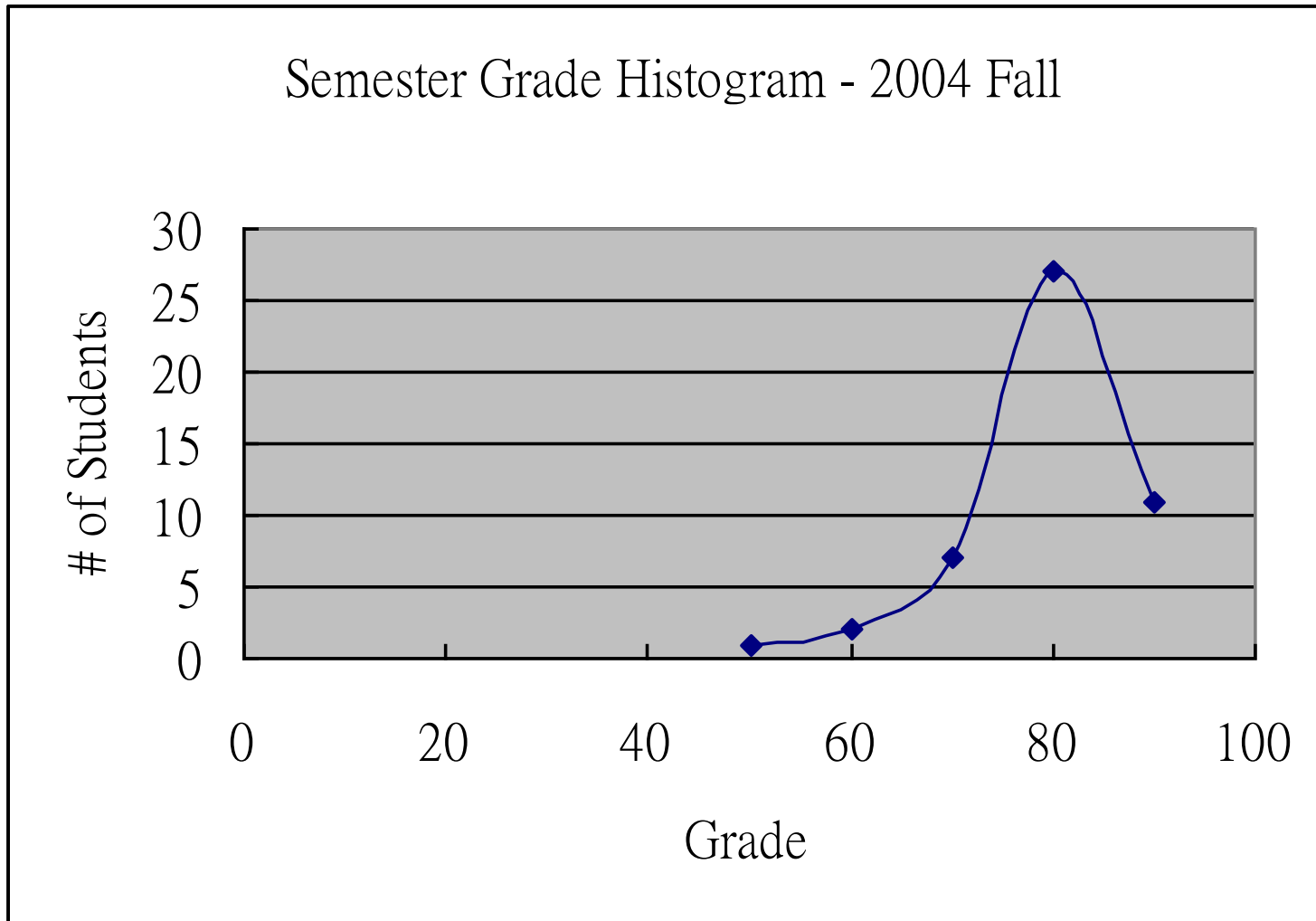
Special Course

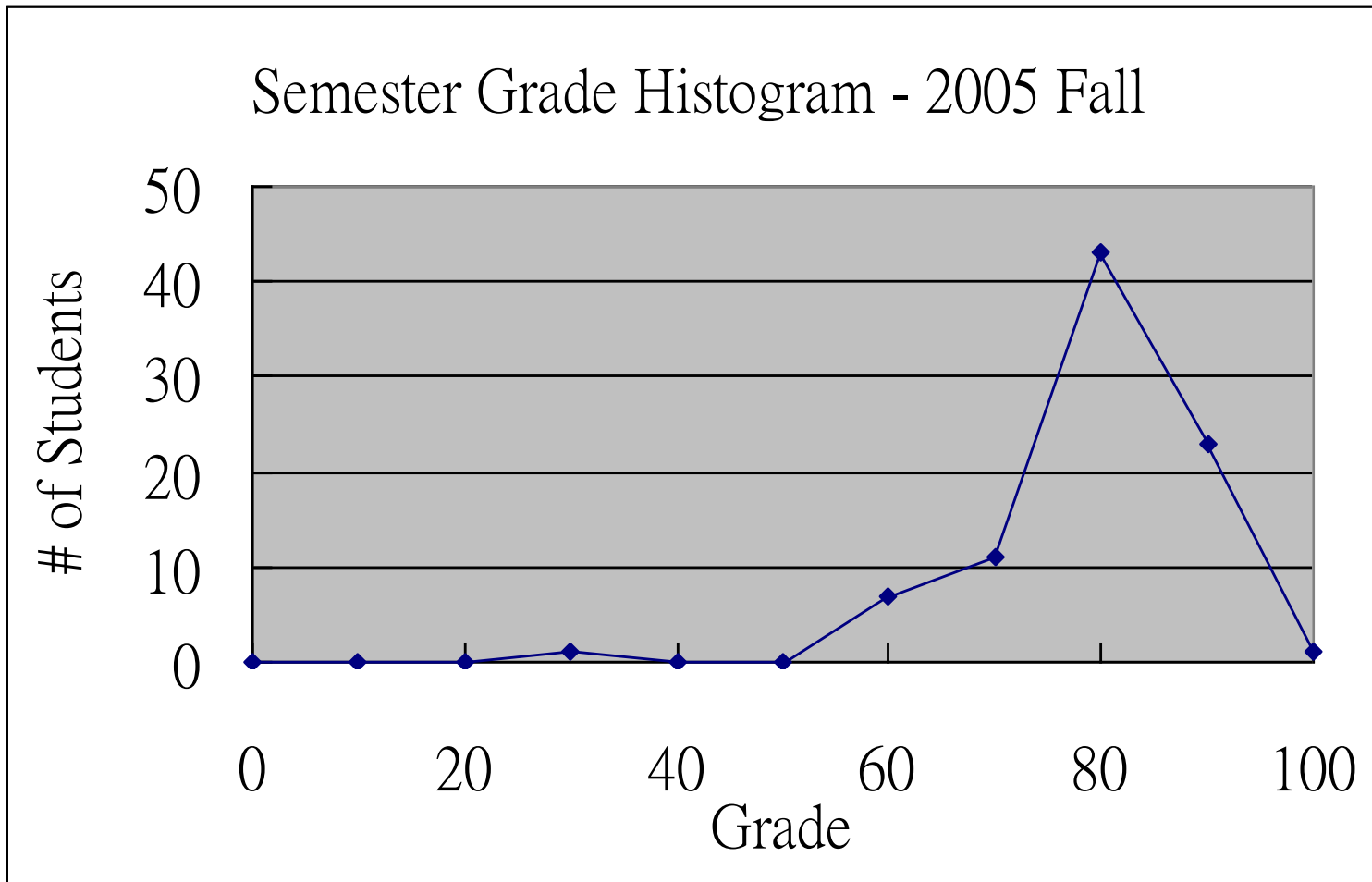
- Sponsored by NTU/MOE
- Space very limited
 - due to fire code and resource constraint
- Designed to promote
 - Interaction (not just student-instructor)
 - Independent/team problem solving
 - Tolerance to different perspectives (justify your own solutions/opinions)

Add Code?

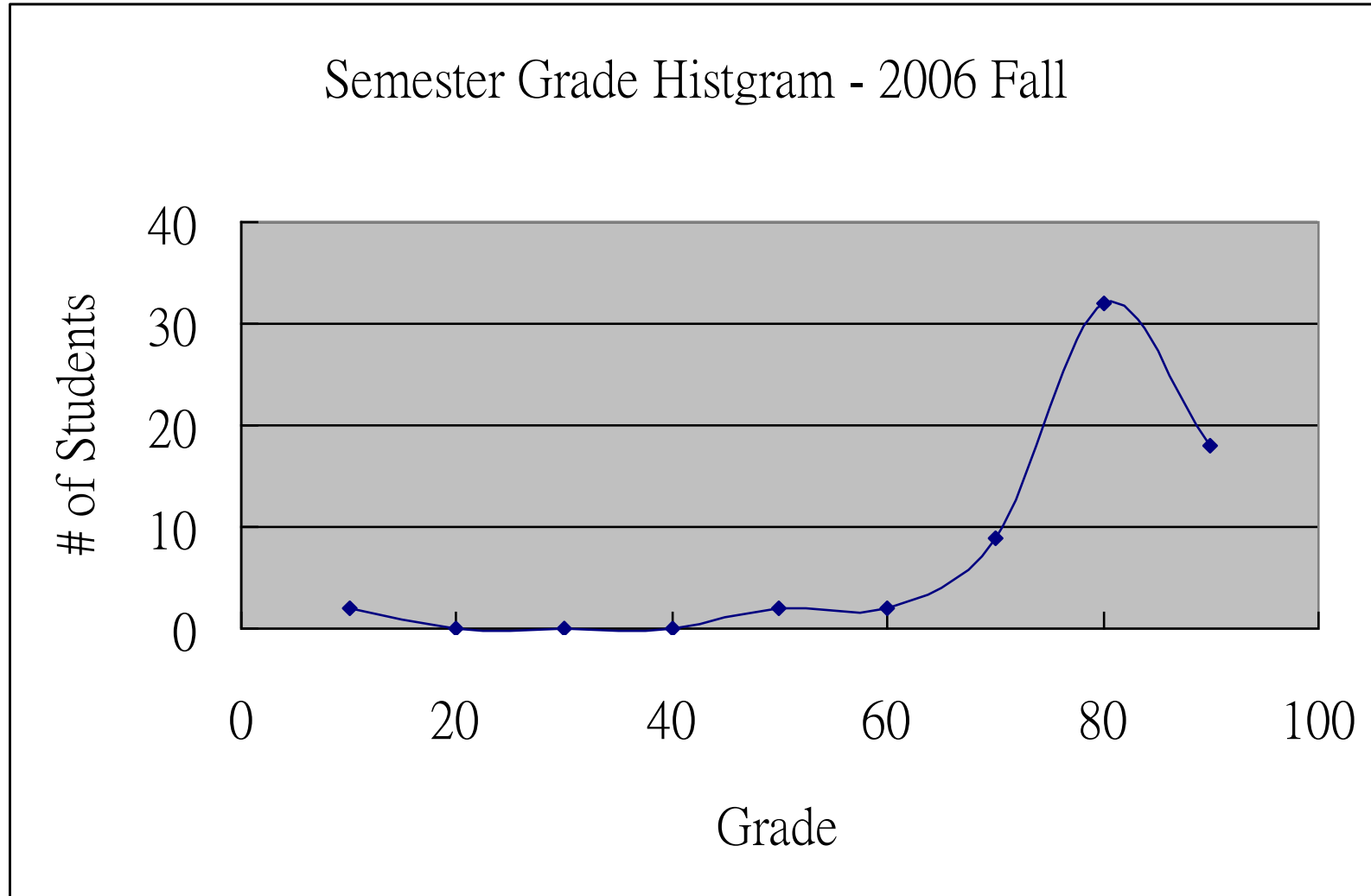
- Follow the course for 2 weeks
- Shop around. Think again.
- Thursday of the 2nd week
 - see better how the class size goes
 - distribute add code selectively provided space

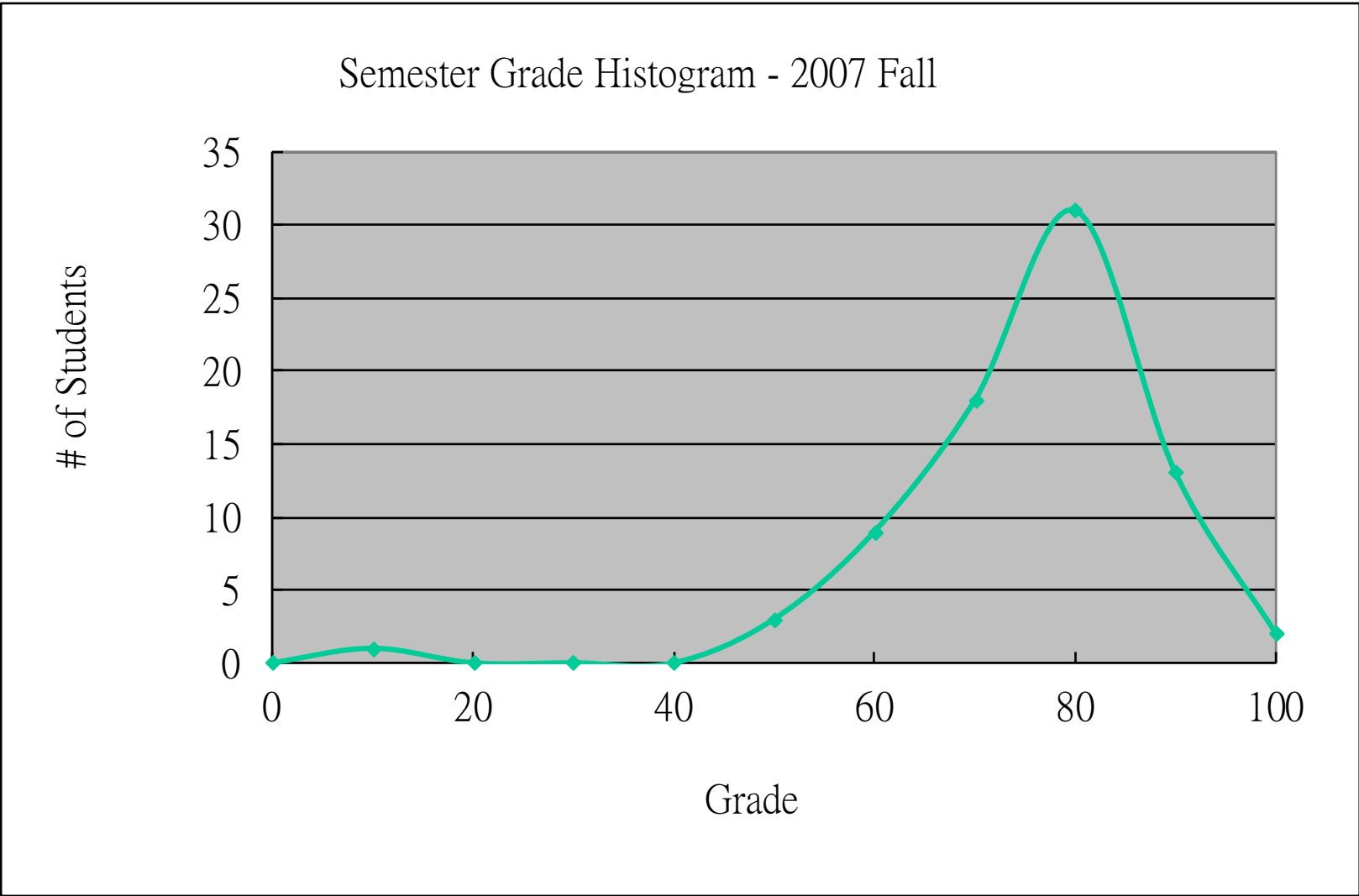
Polly is not nice!



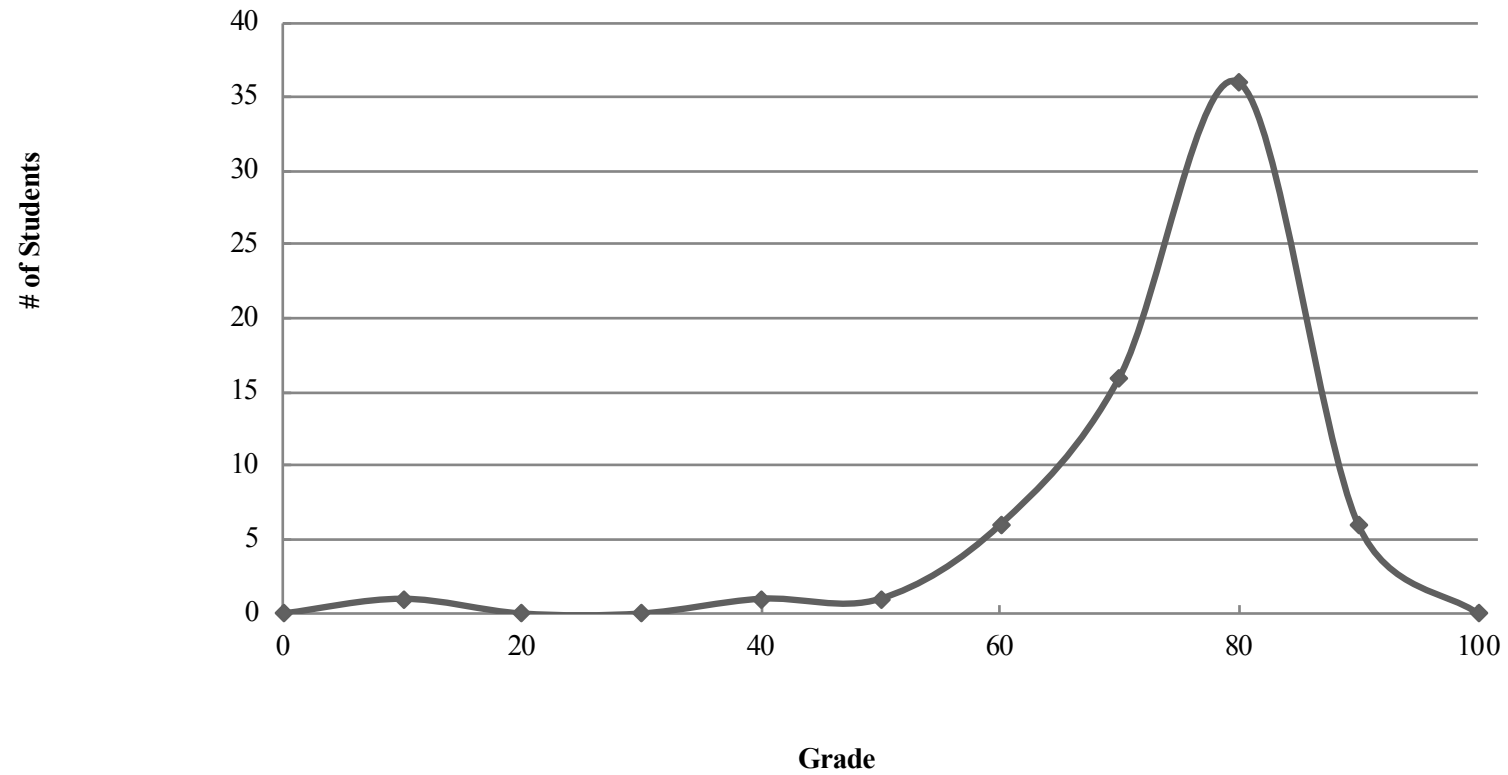


Semester Grade Histogram - 2006 Fall

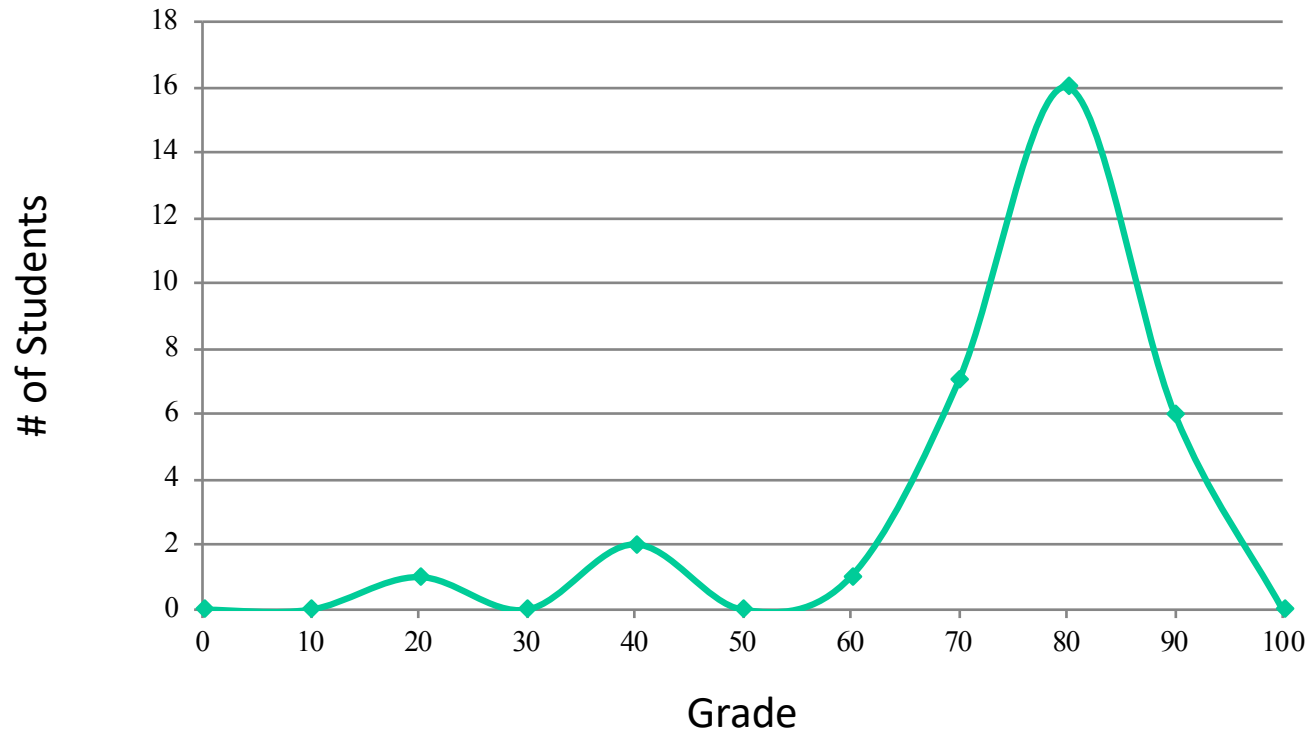




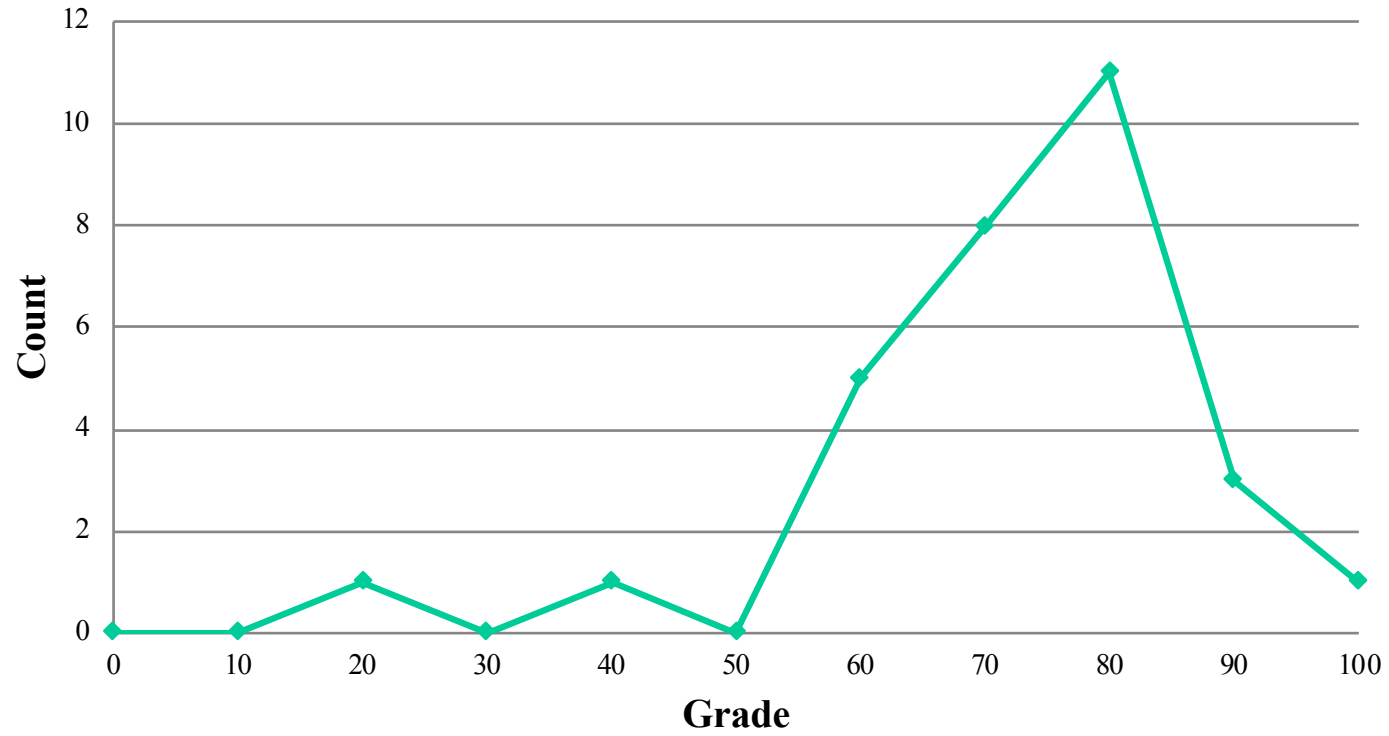
Semester Grade Histogram - 2008 Fall



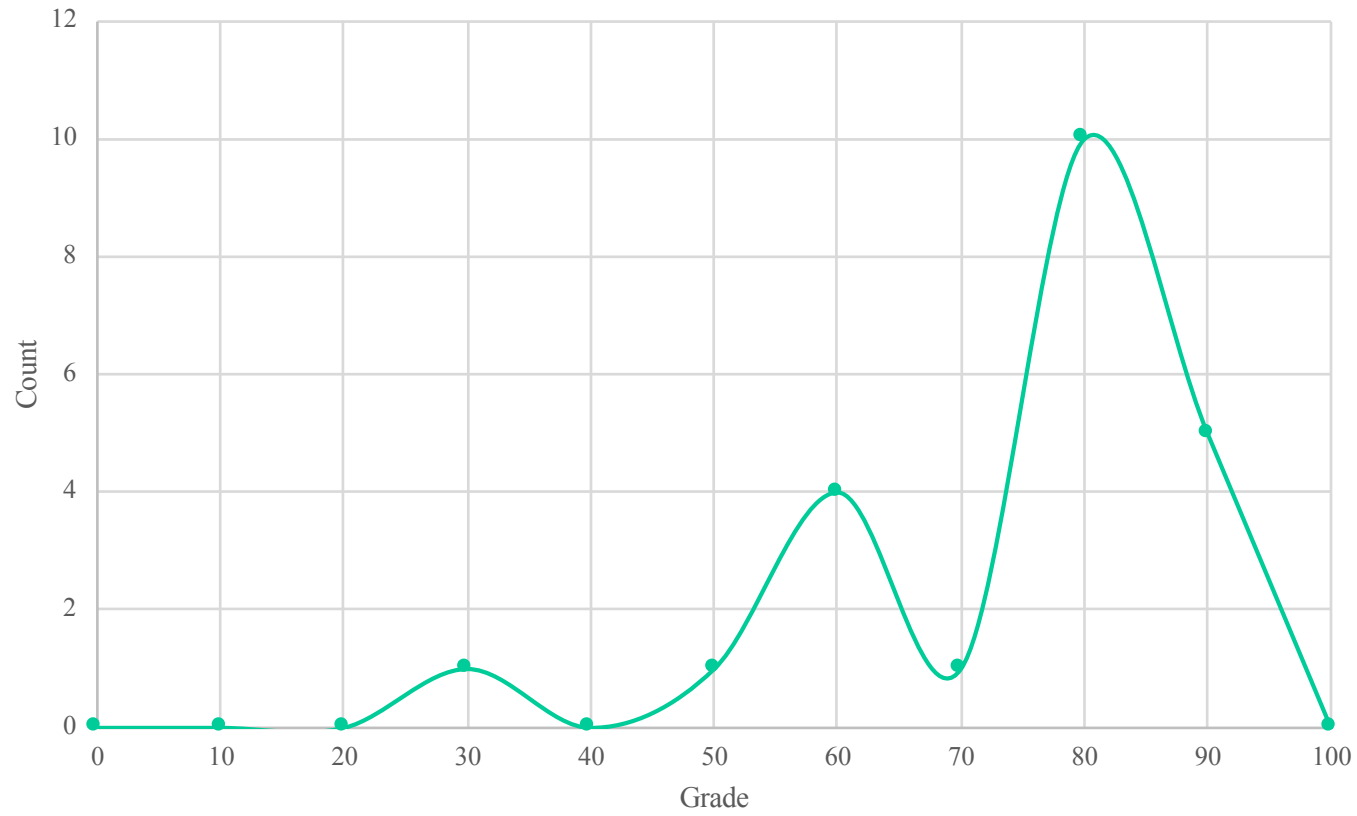
Semester Grade Histogram - 2009 Fall



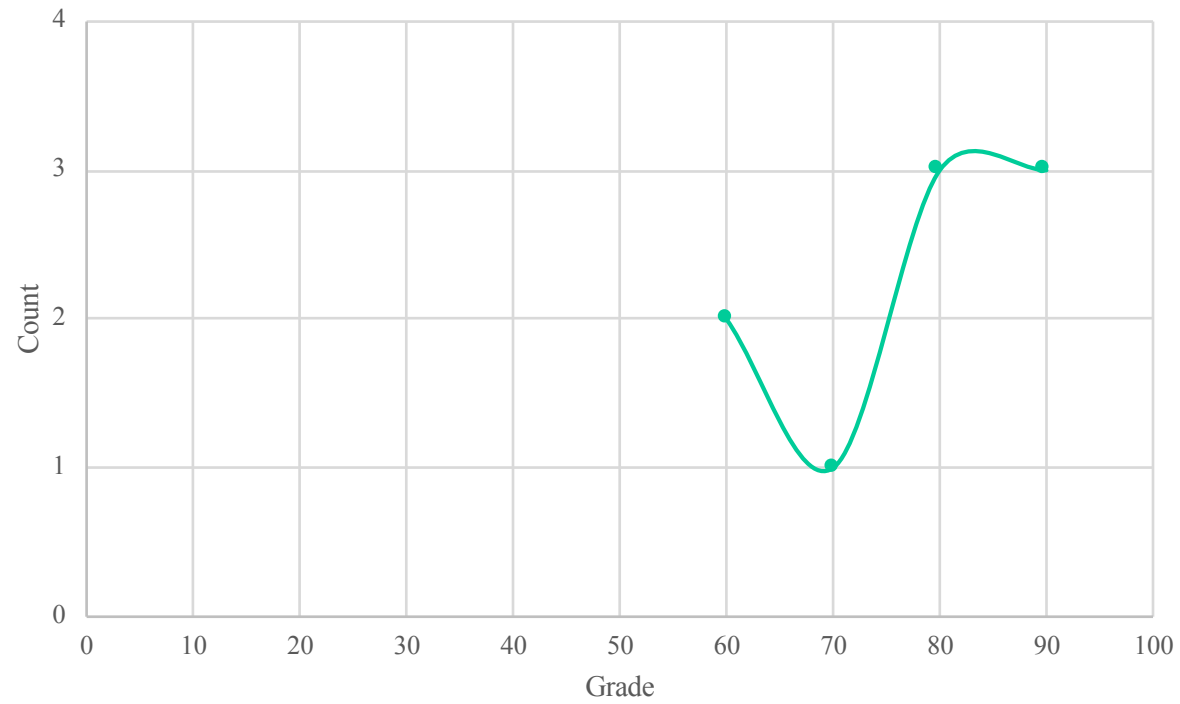
Semester Grade Histogram - 2012 Fall



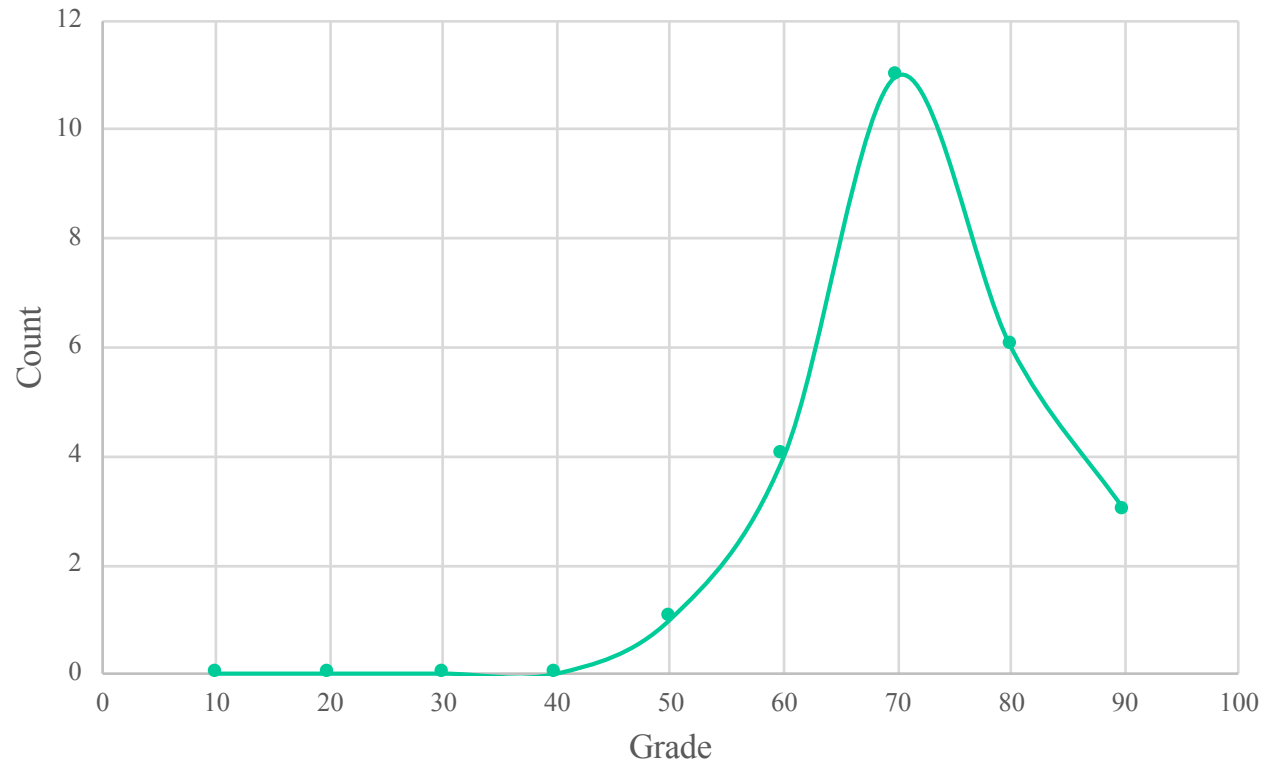
Semester Grade Histogram - 2014 Fall



Semester Grade Histogram - 2015 Fall



Semester Grade Histogram - Fall 2016



Today

The Class Admin

Roadmap

- **The essentials**
- Administrative Information
- Content
 - Course objective and scope
 - Syllabus
- Your responsibility & Grading policy
 - Homework
 - Quiz + Class participation
 - Exams
- Class material

The Essentials

- Course page
 - <http://homepage.ntu.edu.tw/~pollyhuang/teach/intro-cn-fall-18/>
- Polly Huang
 - <http://homepage.ntu.edu.tw/~pollyhuang>
 - Click the 'Teaching' link
 - Then, click the 'Fall 2018, Introduction to Computer Networks' link

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Lecture Info

- Location
 - BL-212
- Time
 - Wednesday, 1:20-2:10;
 - Thursday, 10:20-11:10, 11:20-12:10
 - Please note that during the breaks the priority goes to the calls of nature. Questions will be addressed afterwards

The Instructor

- Polly Huang
 - Office: BL, Room 613
 - Phone: 3366-3599
 - Email: pollyhuang@ntu.edu.tw
 - Homepage:
<http://homepage.ntu.edu.tw/~pollyhuang>

Office Hour

- Thursday 12:10-1:00
- Or by appointment

The TA

- None

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Nature

- A first course on data networks
- Designed for EECS students

Prerequisite

- Introduction to Computer Programming (must)
- Introduction to Computers (must)
- Data Structure and Programming Language (preferred)

Objectives

- Knowing the existence and the components of the Internet (**what**)
- Examining the mechanisms running in various components (**how**)
- Understanding the nature of the problems these mechanisms are trying to solve (**why**)

Scope

- The data network, a.k.a. the Internet
- By the layers
 - Application Layer, Transport Layer, Network Layer, Link Layer
- By the common functions across layers
 - Mobile Wireless Networking, Multimedia Networking

Syllabus+Schedule: 1st Half

- 01 09/12- Class Admin
- 02 09/19- Overview
- 03 09/26- Overview
- 04 10/03- Application Layer: Web/HTTP, FTP (PA#1)
- 05 10/10- Application Layer: SMTP, DNS, P2P (EA#1)
- 06 10/17- Application Layer: Unix Socket Programming
- 07 10/24- Transport Layer: UDP, Reliable transfer (PA#2)
- 08 10/31- Transport Layer: TCP error recovery
- **09 11/07- Midterm Examination**

Syllabus+Schedule: 2nd Half

- 10 11/14- Transport Layer: TCP congestion control
- 11 11/21- Network Layer: Routing Principle (EA#2)
- 12 11/28- Network Layer: IPv4
- 13 12/05- Network Layer: IPv6, Multicast Routing (PA#3)
- 14 12/12- Link Layer: MAC
- 15 12/19- Link Layer: Ethernet (PA#4)
- 16 12/26- Wireless and Mobile
- 17 01/02- Multimedia Networking (EA#3)
- **18 01/09- Final Examination**

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Grading

- Homework
 - Essay assignments (15%)
 - Practical assignments (20%)
- Interaction
 - In-class quiz (15%)
 - Participation (10%)
- Exams
 - Midterm (20%)
 - Final (20%)

Team vs. Individual

- Teamwork
 - Essay assignments (15%)
 - Practical assignments (20%)
 - In-class quiz (15%)
- Individual
 - Participation (10%)
 - Midterm (20%)
 - Final (20%)

Team Up – Loners Allowed

- 1-3 students per team
 - No more
- Same members for
 - Homework
 - In-class quiz

Homework Assignments

- 3 essay assignments
- 4 practical assignments
 - Unix and socket programming exercises
- Submission all in electronic format
- **No late assignments**

Essay Assignments

- Essays
 - Assigned topic
 - Search for additional material (google or else)
 - Read and discuss **as a group**
 - Set your storyline
 - Write a 3-page essay about it
 - Submission all in electronic format
- To fulfill this requirement
 - 3-page write-up (5% each)

Practical Assignments

- PA1: Basic Unix commands (5%)
- PA2: Unix socket web server stage 1 (5%)
 - A Simple Echoer
- PA3: Unix socket web server stage 2 (5%)
 - A Simple HTTP 1.0 Command Interpreter
- PA4: Unix socket web server stage 3 (5%)
 - A Simple HTTP 1.0 Web Server

In-Class Quiz

- Random quiz
 - Problem related to the topics of the week
 - Given time to work on in class
- To fulfill this requirement
 - Submit your solutions in/off class (by the Friday of Week 17)
 - Graded by completion rate (total 15%)
 - Top sharers get special reward

Class Participation

- Any in-class or **off-class** interaction counts
 - Remember to state your **name**
- Off-class interaction includes
 - Coming to the office hour
 - Interacting over FB/email
- Graded by curve (scale to min/max of the class)

Exams

- **1 Midterm (20%)**
- **1 Final (20%)**
- In Q&A form
- Old exams available from the class page
- **No early/makeup exams**
 - **Many sorries to exchange students who need to leave early for the winter quarter at home universities**

Integrity

- Shall there be any cheating behavior involved
 - You receive 0 for the grade
 - The case reported **to the department and the university**

Gentle Reminder:

Polly is not nice!

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Class Material

- Textbook

Computer Networking: A Top-Down Approach, **7/e**

James F. Kurose & Keith W. Ross

- Local carrier

歐亞 Eurasia Book Co.

Tel: 02-8912-1188, FAX: 02-8912-1166

Additional Material

- Lecture slides in pdf format
- Available from the course page

Which is again here:

- Course page
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Questions?

Or join the Facebook group and post!

Quiz Time!