

# Introduction to Computer Networks

Polly Huang

EE NTU

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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

# 99.9% 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...

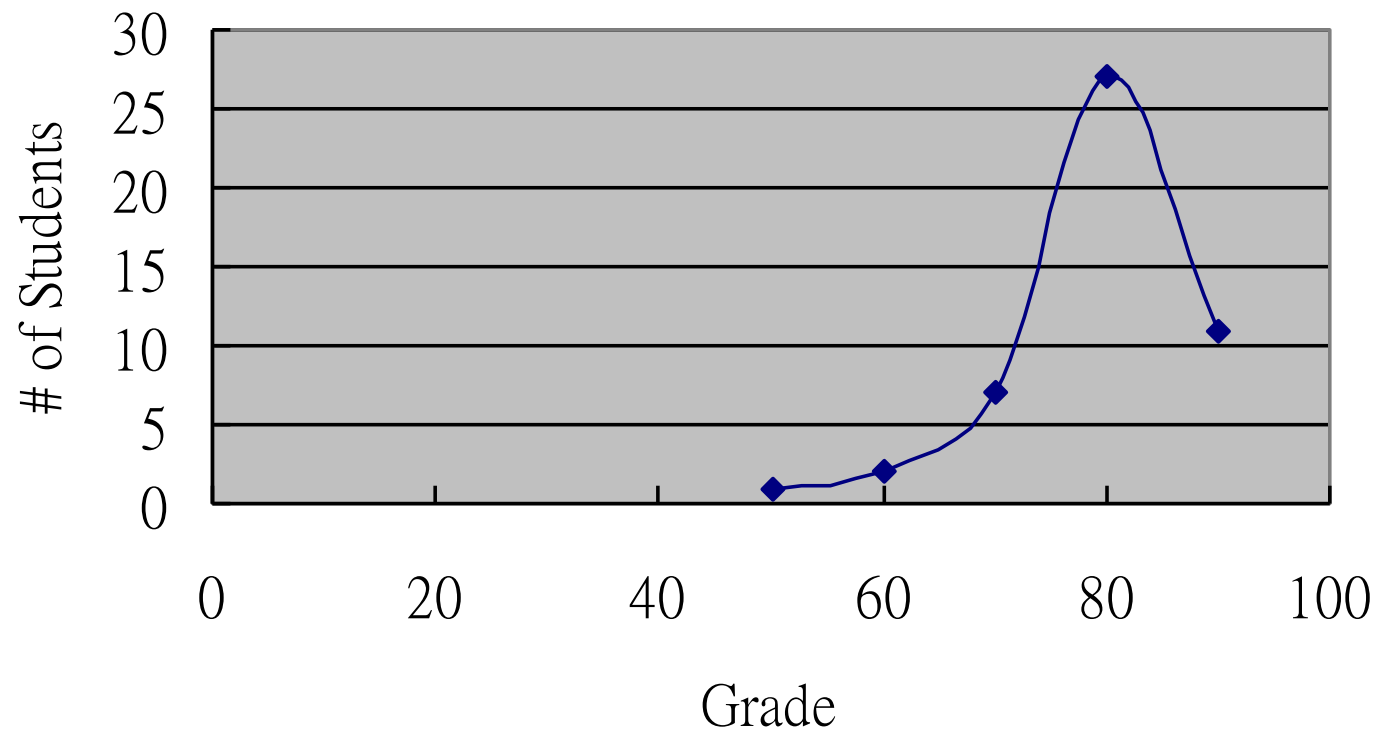
- Please make sure **your names** are clearly written **in Chinese** for all the write-up submissions.
  - Assignments
  - Exams

# Alternatives

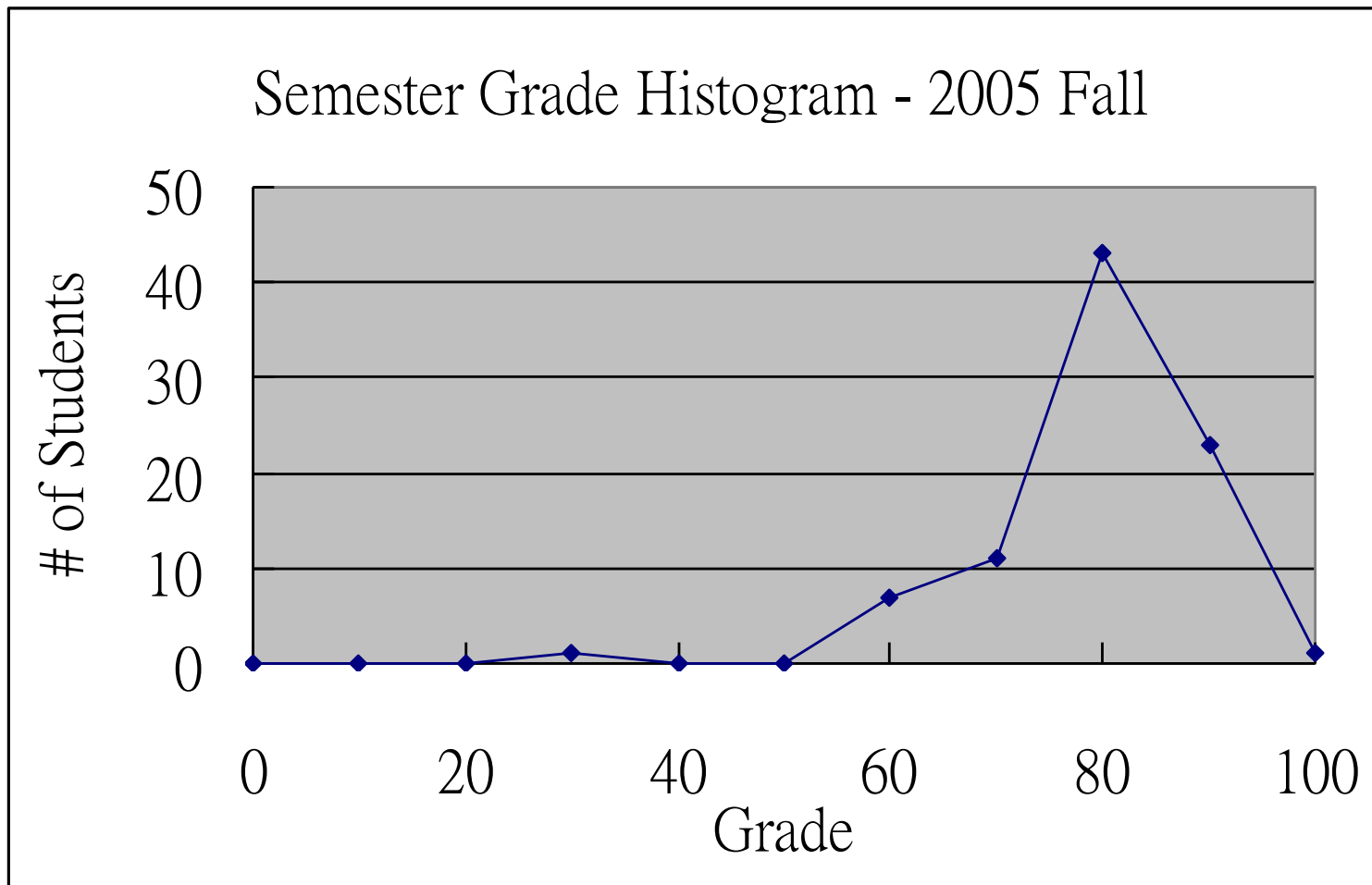
- Another session in Fall and another session in Spring are fully in Mandarin.

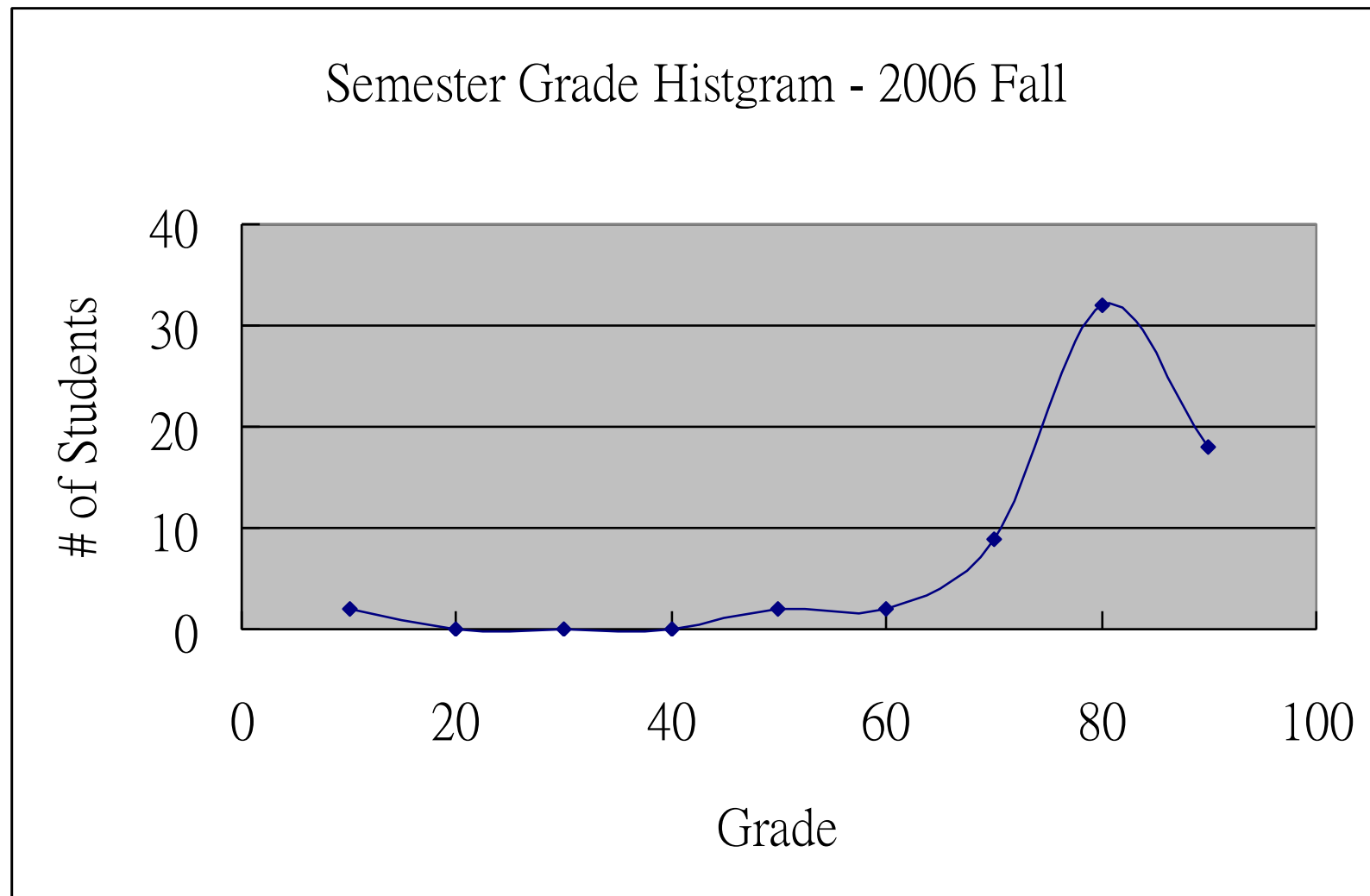
Polly is not nice!

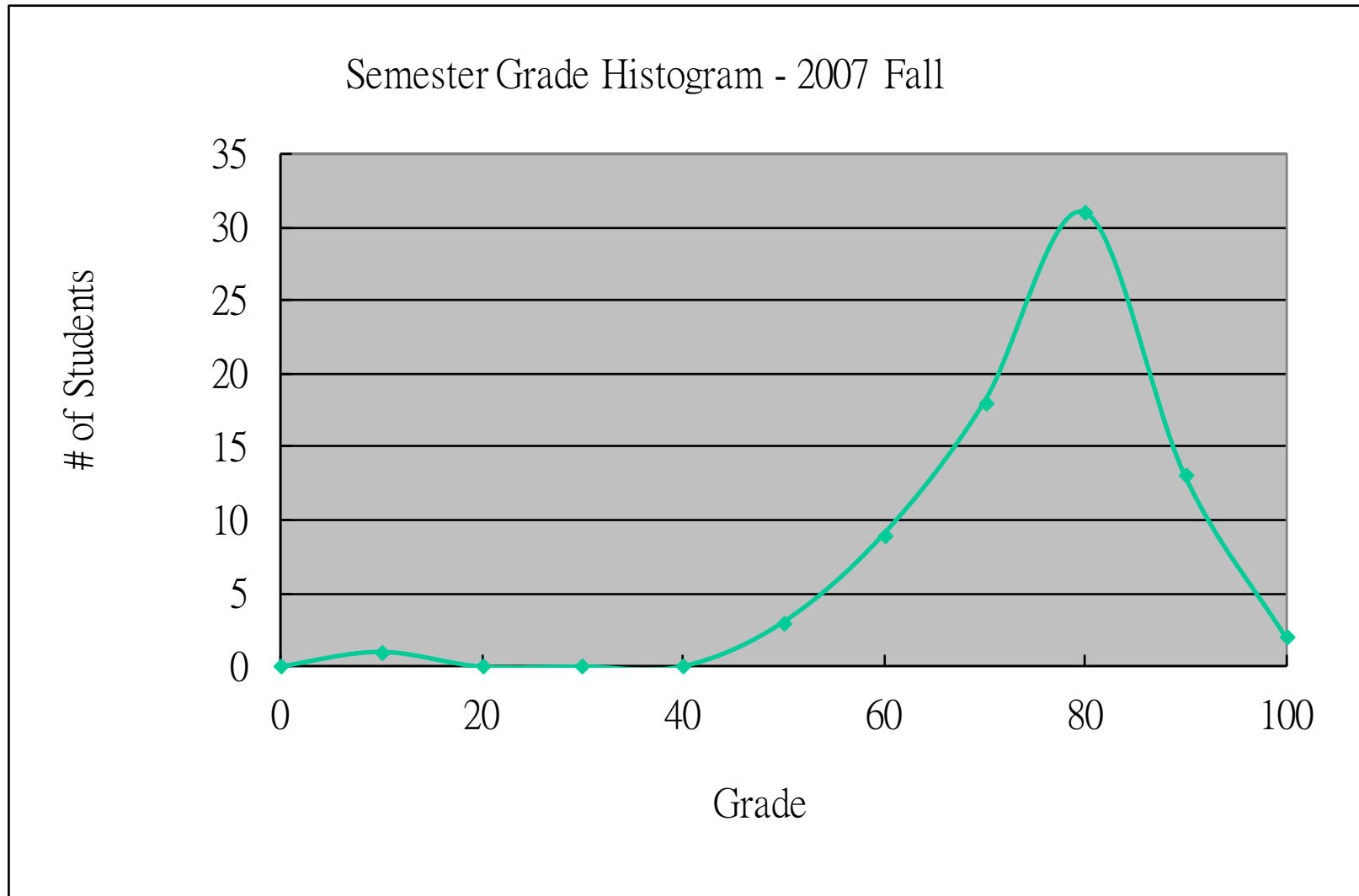
Semester Grade Histogram - 2004 Fall



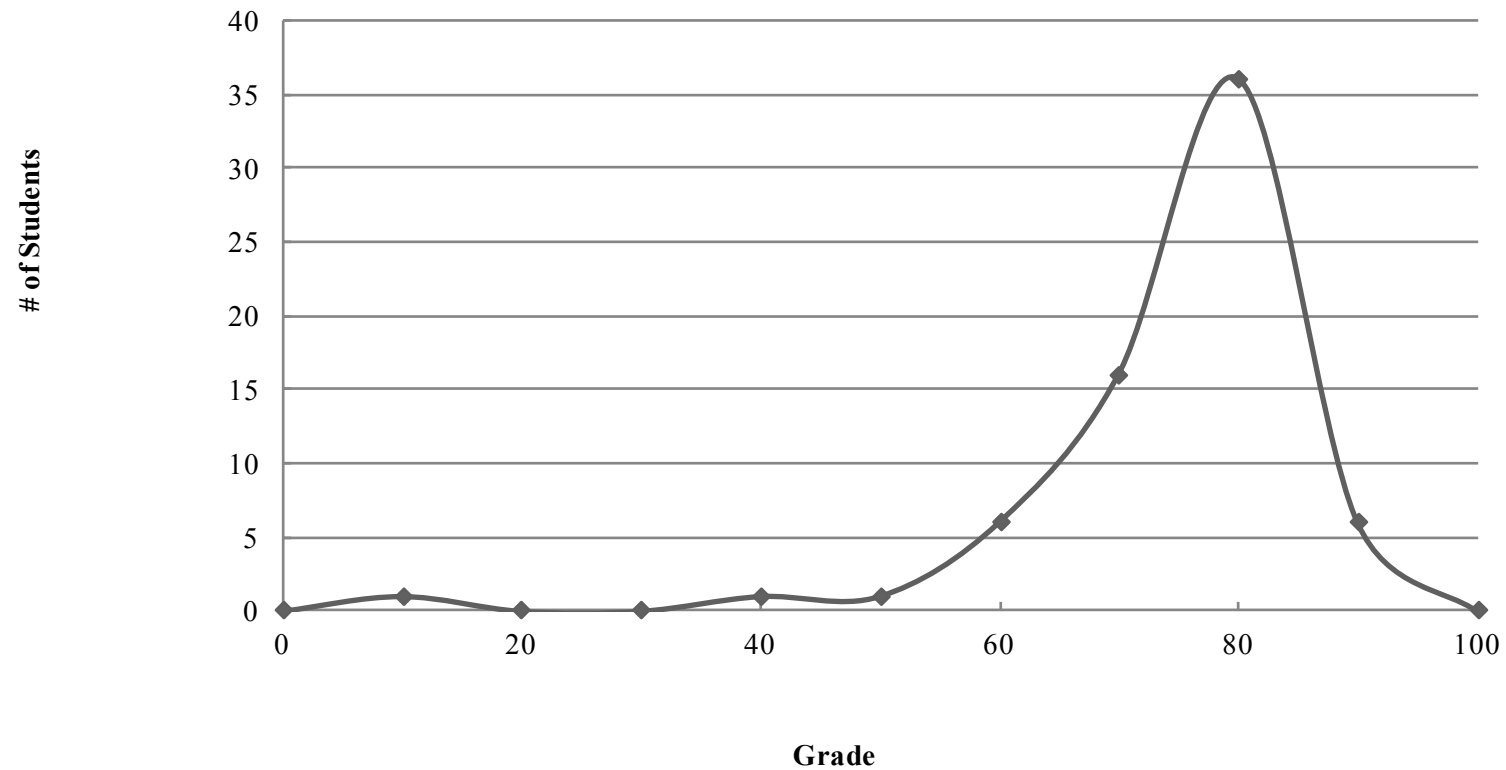




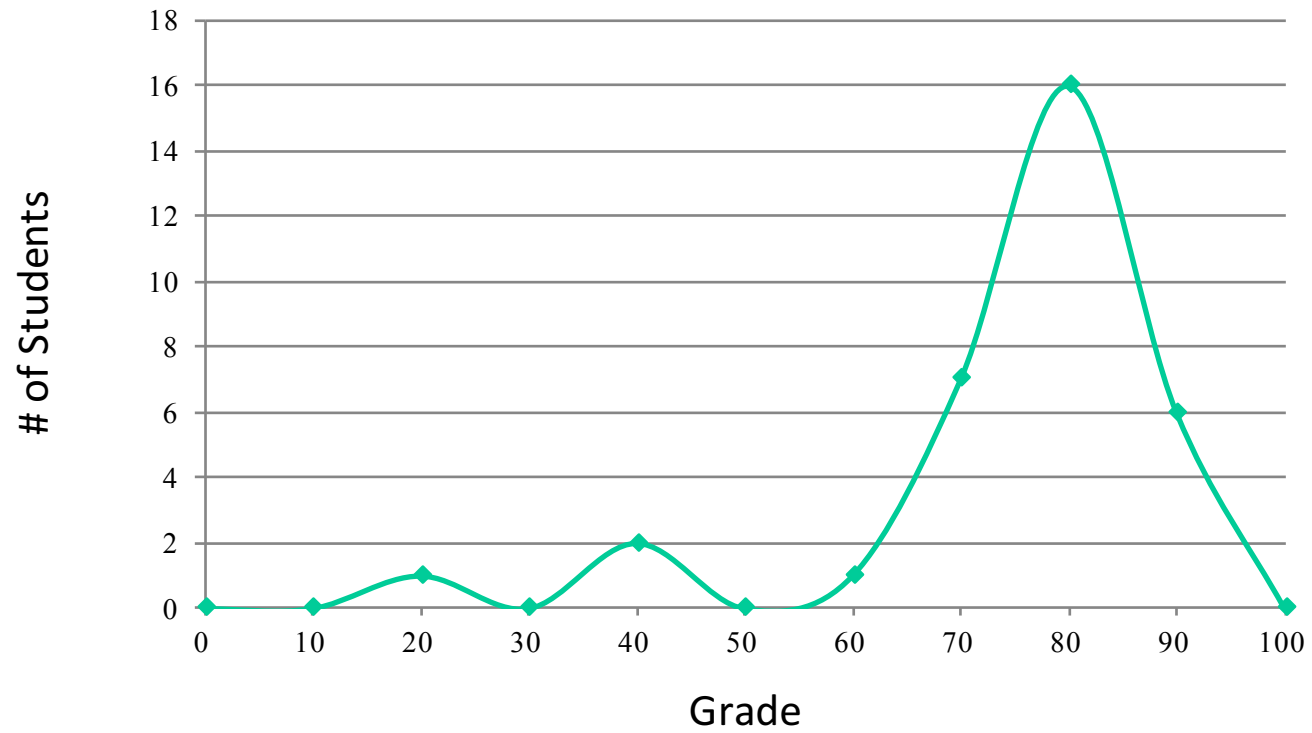




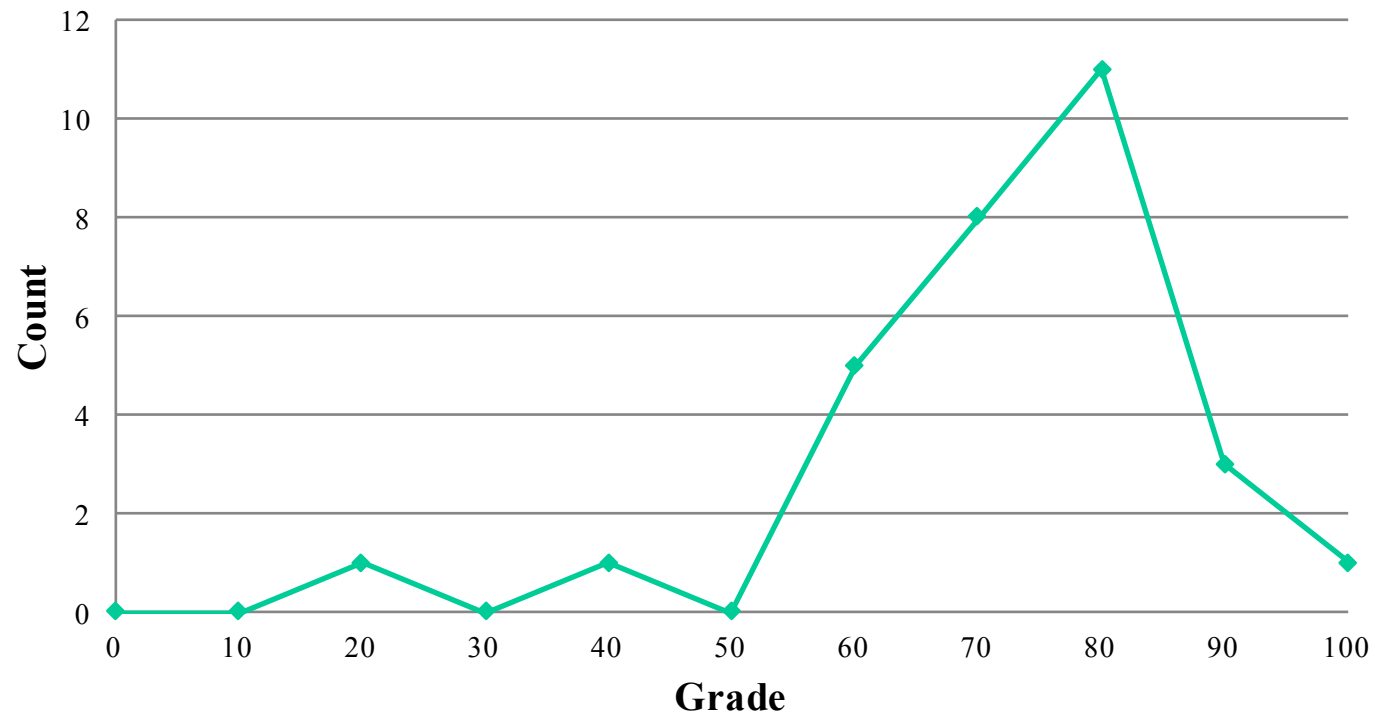
## Semester Grade Histogram - 2008 Fall



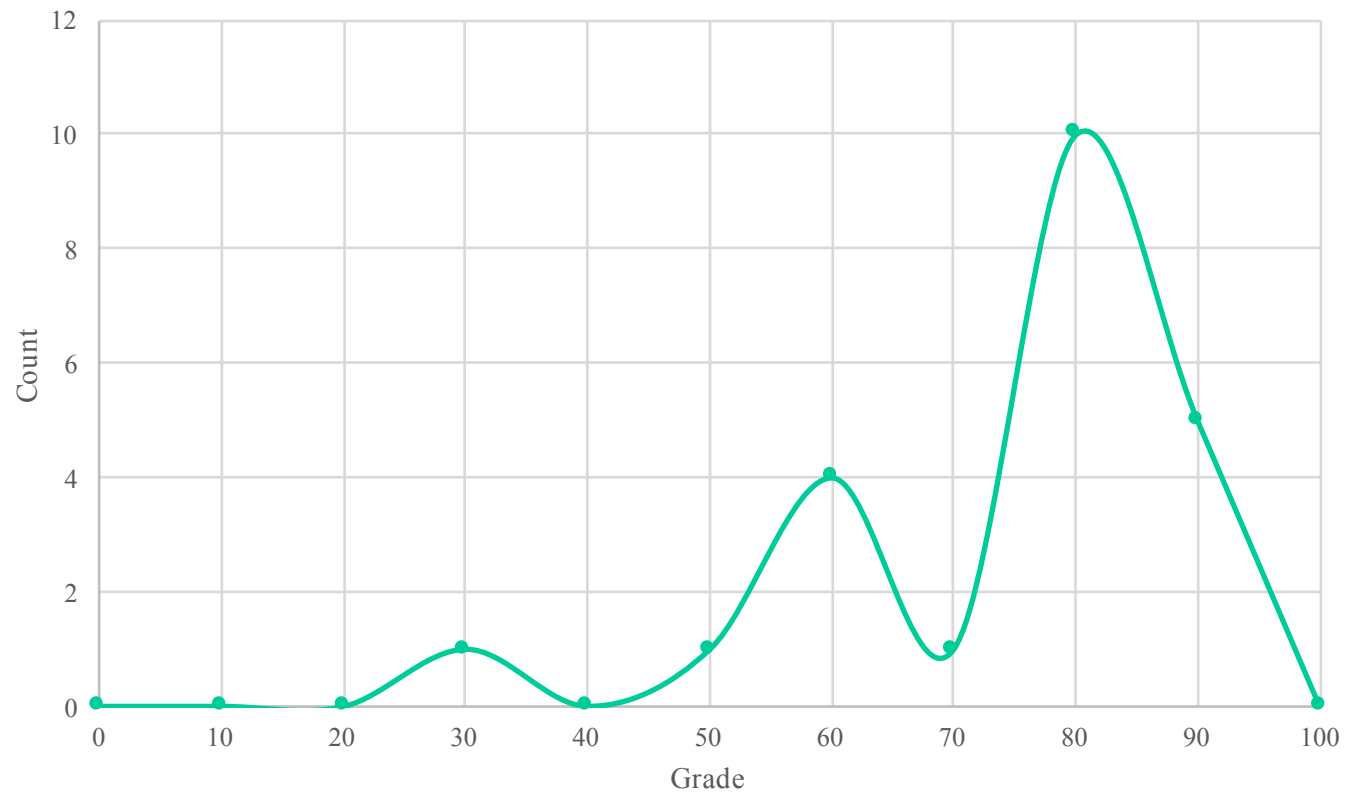
**Semester Grade Histogram - 2009 Fall**



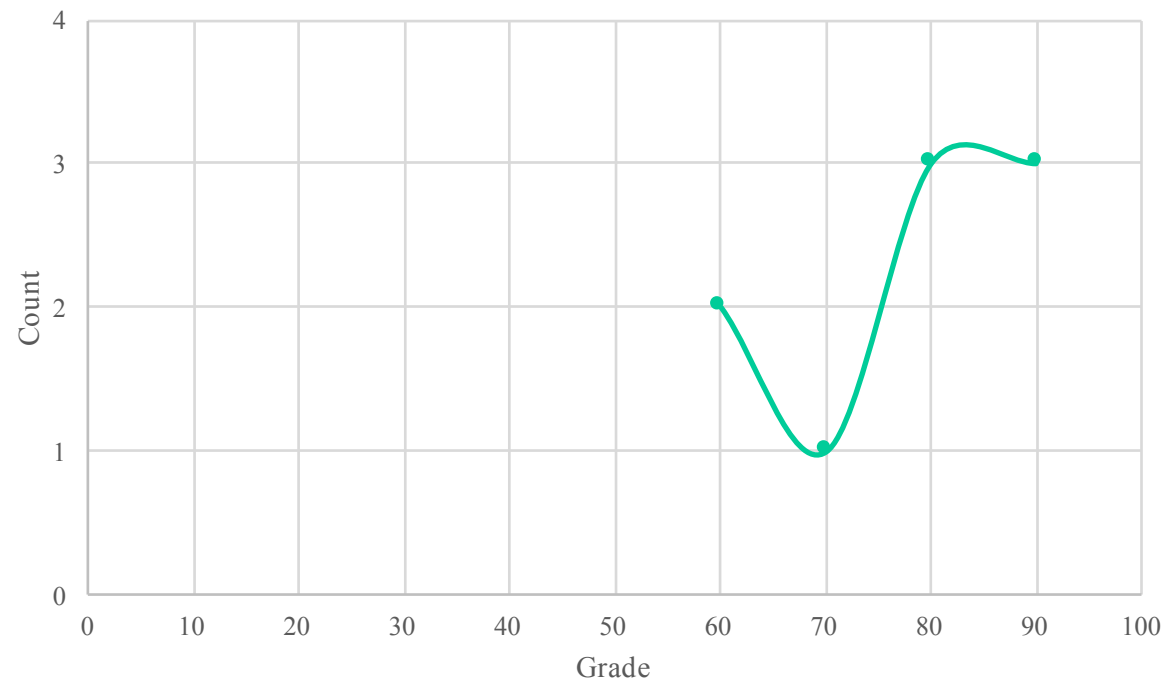
**Semester Grade Histogram - 2012 Fall**



Semester Grade Histogram - 2014 Fall



Semester Grade Histogram - 2015 Fall





# 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-16/>
- Polly Huang
  - <http://homepage.ntu.edu.tw/~pollyhuang>
  - Click the 'Teaching' link
  - Then, click the 'Fall 2016, Introduction to Computer Networks' link

# Roadmap

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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](mailto: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
- 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: 1<sup>st</sup> Half

- 01 09/14- Class Admin
- 02 09/21- Overview
- 03 09/28- Overview (PA#1)
- 04 10/05- Application Layer: Web/HTTP, FTP
- 05 10/12- Application Layer: SMTP, DNS, P2P (EA#1)
- 06 10/19- Application Layer: Unix Socket Programming
- 07 10/26- Transport Layer: UDP, Reliable transfer (PA#2)
- 08 11/02- Transport Layer: TCP error recovery
- **09 11/09- Midterm Examination**

# Syllabus+Schedule: 2<sup>nd</sup> Half

- 10 11/16- Transport Layer: TCP congestion control
- 11 11/23- Network Layer: Routing Principle (EA#2)
- 12 11/30- Network Layer: IPv4
- 13 12/07- Network Layer: IPv6, Multicast Routing (PA#3)
- 14 12/14- Link Layer: MAC
- 15 12/21- Link Layer: Ethernet (PA#4)
- 16 12/28- Wireless and Mobile
- 17 01/04- Multimedia Networking (EA#3)
- **18 01/11- 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, **6/e**

James F. Kurose & Keith W. Ross

Addison Wesley, ISBN 0273768964

- Local carrier

歐亞 Eurasia Book Co.

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

# Additional Material

- Lecture slides in pdf format
- Past lecture recordings in mp3 format
  - Available from past years' course website
- Past Lecture video recording
  - Available from 2008's course website
- All available from the course page

# Which is again here:

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# Questions?



# Quiz Time!