

Course Orientation

CPEN 442

Teaching staff

- Instructor

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Dr. Konstantin (Kosta) Beznosov

- www.ece.ubc.ca/~beznosov
- Research interests
 - » usable security
 - » security and privacy of online social networks
 - » authentication and authorization on the Web
 - » security and privacy for mobile devices

- Teaching Assistant

- **Ildar Muslukhov**, Ph.D. candidate
- Lina Qiu, M.A.Sc.

Outline

- Course orientation
 - course site
 - syllabus
 - calendar
 - term project
 - Q&A
- Introduction into computer security
- Threat analysis

What background should I have?

- From anonymous comments from 2009 students:
 - “This class involves fairly amount of programming. I am just wondering for those in EE, are they capable of doing all these coding from scratch.”
 - “This course definitely needed a strong programming background (which I happen to have). My peers without strong programming backgrounds had trouble with many of the assignments.”
 - “It was helpful to have taken CPSC 317 (Networking) and CPSC 310 (Software Engineering) and also concurrently taking MATH 342 at the same time.”
 - “I was lacking nearly all prerequisites for the course, and without my work experience with databases and web application programming I doubt I would have been able to keep up with the assignments. However, the focus of the quizzes and the projects was on problem-solving and applying new concepts, which my academic background had provided to me thoroughly.”
 - “An Electrical Engineering student (as opposed to a Computer Engineering student) does not have the background information to do some of the assignments.”

How Much Time Does the Course Require?

- A lot!

	[SD]	[D]	[N]	[A]	[SA]	Med.	Mode	S.D.	N	Mean
Q1 The assigned workload for the course was heavy.	0	0	3	8	13	5	5	.70	24	4.4

- From anonymous comments from 2013 students:
 - “I felt the assignments ... were extremely time-consuming ...”
 - “Coursework was too heavy - it was just more and more work dumped onto the student.”
 - “Prof has extremely high expectations on students but I found them hard to meet ...”
 - “The course was very time-consuming, ...”
 - “I spent more time on this course than on my capstone fourth year project course, as a reference.”
 - “The assignments and quizzes are very difficult. The workload of the course rivals the fourth year capstone 14 course(10credits).”
 - “Homeworks, Quizzes and Projects were very hard ...”
 - “... the expectations for the course were quite high ...”

How Much Time Does the Course Require?

- From anonymous comments from 2009 students:
 - “If a student is taking a full course load during the semester, it is quite unrealistic to have as many assignments and quizzes and expect students to start on the project early.”
 - “quizzes, assignments, and term project and exam is too much ...”
 - “Lots of assignments, projects, one of my most intense courses.”
 - “With quizzes, lengthy assignments, and a pretty much full fledged project, as well as a final exam which is pass final to pass the course there was a lot of work to do.”
 - “Very heavy workload, the term project was huge, and there were no weeks that did not include either a due assignment or a quiz.”
 - “The assignments are all quite hard and take a lot of time, and the term project runs in parallel.”
 - “In this course I spent rough 16 hours week ...”

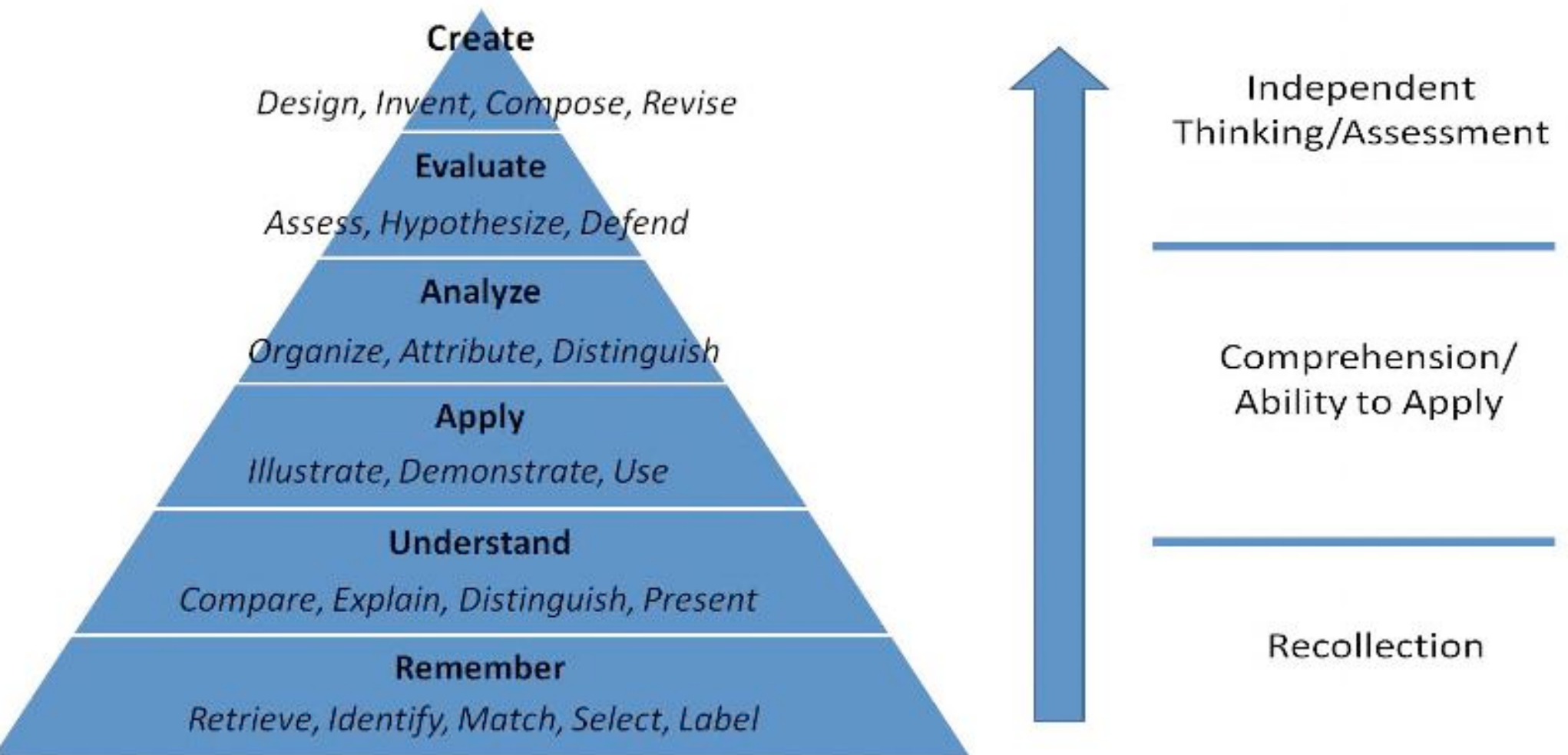
repeat after me

- This course is hard!
- This course takes a lot of time!

course information flows

- **courses.ece.ubc.ca/cpen442**: calendar, lecture slides, syllabus, office hours, deadlines,
- **piazza.com**: out of classroom announcements, Q&As
- e-mail through piazza.com: urgent announcements
- course calendar
- announcements
 - non-urgent: in the class & on piazza
 - urgent: through UBC e-mail
- office hours
 - in the calendar

Bloom's taxonomy of learning



source: www.nltslibrary.info

Key Points

- A lot of
 - hard work -- 15-20 hours/week
 - programming
- All the course material is on courses.ece.ubc.ca/cpen442
- Start early!
 - First assignment due September 15
 - First quiz on September 13
 - Project proposals due October 13

assignment #1 review

term projects

term project types

- design
 - come up with a technological solution to a real security or privacy problem
 - evaluate your solution
- analysis
 - analyze security of a real system/product/service
 - fail the project if no vulnerabilities are found
- implementation
 - implement and extensively test security functionality or a feature/mechanism in a real system

security analysis projects

- authorized analysis of a
 - UBC system
 - third-party system
- ~~unauthorized analysis of a~~
 - ~~UBC system~~
 - ~~third-party system~~

authorized security analysis projects

1. preauthorized projects to analyze a UBC or third-party system
 1. Be the first group to “claim” the project. (send Kosta e-mail with subject “412: claiming project #...”)
 2. Meet with the system owner to scope out the project.
2. with authorization obtained by the students, analysis of a UBC or third-party system
 1. get authorization from Kosta by September 28
 2. get authorization from UBC IT Security by October 7
 3. get authorization from the system owner by October 13
 4. Meet with the system owner to scope out the project.

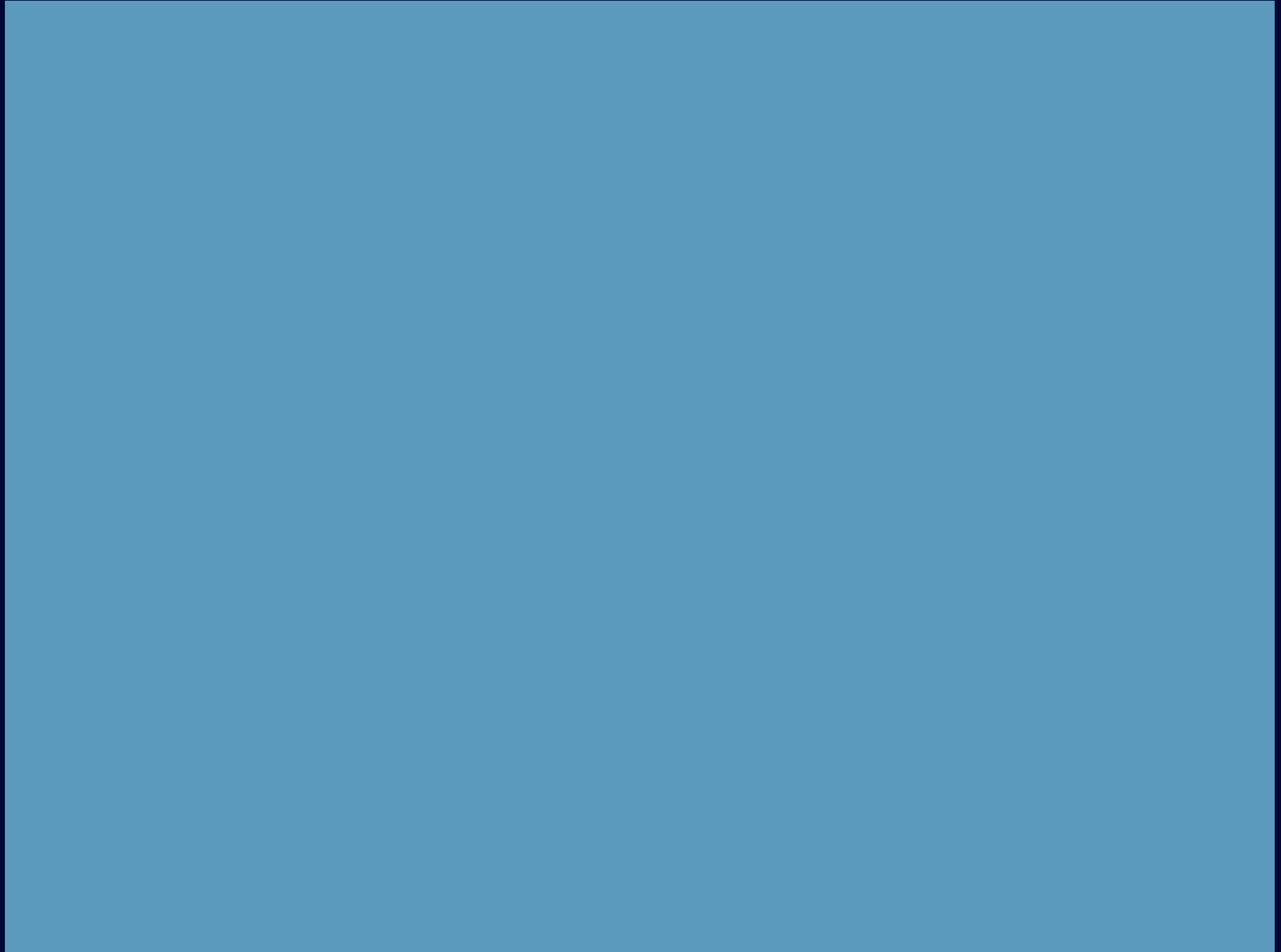
examples of good analysis projects

- **Security Analysis of Mobile Telephony Customer Account Management**, by Nikola Radoicic, Andrej Satara, Rudi Plesch, Nabeel Huq (2013)
- **Security Analysis of the i>clicker Audience Response System**, by Derek Gourlay, Yik Lam Sit, Yuan Sunarto, Tim Wang (2010)
- **Analysis of Smart Card Laundry System**, by Jon Lee, Niel Paul, Choon-Sean (Steven) Cheong, Dicky Bratawijaya (2009)
- **Security Analysis of Vancouver's Pay-by-Phone Metered Parking**, by Chris Lee, Benjamin Wai, James Wang, Leo Wong (2008)
- **Security Analysis of Microsoft Notification Protocol**, by Jason Poon, Oliver Zheng (2007)

http://courses.ece.ubc.ca/412/term_project/previous_years_reports.html

Analysis of Smart Card Laundry System

Jon Lee, Niel Paul, Choon-Sean Cheong, Dicky Bratawijaya



Security Analysis of Vancouver's Pay-by-Phone Metered Parking

Chris Lee, Benjamin Wai, James Wang, Leo Wong



EECE 412 Group 4
Presents

Security Analysis of Microsoft Notification Protocol

Jason Poon, Oliver Zheng

Analysis of MSNP

O. Zheng & J. Poon

Music: Timbaland ft. Elton John – Two Man Show

term project milestones

- **October 13**
 - proposal presentations
 - written proposals and authorizations due
- **November 10**
 - **Introduction, Related Work, and Methodology sections of the report**
- **November 29**
 - project video clips due
- **December 5 (all day)**
 - project presentations
- **December 7**
 - final project reports due

Questions