Welcome to CSCE 313
Introduction to Computer Systems

Department of Computer Science and Engineering
Texas A&M University

Logistics

- **Instructor:**
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  - Haopei Wang
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Webpages

- **Class webpage**
  - [http://courses.cse.tamu.edu/guofei/csce313/](http://courses.cse.tamu.edu/guofei/csce313/)

- Piazza webpage
  - [https://piazza.com/class#spring2017/csce313h](https://piazza.com/class#spring2017/csce313h)

- eCampus webpage
  - [http://ecampus.tamu.edu/](http://ecampus.tamu.edu/)

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**What do you know about computer system?**

- Operating system (name OS that you know)
  - ![Operating System Logos](image)

- Computer networking

- Secure system
  - ![Secure System](image)
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- **Textbook:**
  - UNIX Systems Programming: Communication, Concurrency and Threads, 2/E, by Kay and Steve Robbins, 2004
- **Other suggested readings:**
  - Operating System Concepts, by Silberschatz, Galvin, Gagne
  - Computer Systems: A Programmer’s Perspective, by Randal E. Bryant and David R. O’Hallaron
- Lecture slides posted on the class website
- You are responsible for:
  - reading the assigned portions from textbook
  - reading related material on class handouts

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- **Labs:**
  - Goal: acquire a working knowledge of one widely used application interface (POSIX) to an operating system (UNIX/Linux).
  - 4 Machine Problems
    - **They are difficult**
  - MP1 will be out soon!
  - Submission through eCampus. Check the Lab Manual on class website for instructions.
- **Homework**
  - 4 assignments.
  - All the work is individual, NO teams
  - Late submissions: penalized with 20% of full credit per day
  - After HW/MP returned, 1 week for regrades
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- **Assessment:**
  - Two tests: one in the middle, one final exam (200+250)
    - All tests are closed book
    - One 8.5x5.5in hand-written cheat sheet allowed. Nothing else allowed!
  - Lab: Machine Problems MP: 400 points
    - MP may have bonus points
  - Homework: 100 points
  - Others (e.g., class participation): 50 points
- **Grading:**
  - A: 901 - 1000 points
  - B: 801 - 900 points
  - C: 701 - 800 points
  - D: 601 - 700 points
  - F: 0 - 600 points

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- What is an Operating System?
- What is System Programming?
- CSCE 313 course objectives:
  - what **system software** is involved for an application program to run (on a single node and over a network)
  - how this **system software** is to be used
- At the end of the course, you will understand:
  - What is an operating system; what are its components; why system calls;
  - Execution of a program; function calls; interrupts.
  - Memory layout of a running program
  - OS application interface; file system; process control;
  - Concurrency, process synchronization, interprocess communication
  - Network Programming; Berkeley sockets; RPC; pitfalls in networks.
  - Security threats in centralized and distributed systems; authentication, authorization, confidentiality; security mechanisms.
Optional Honors Project

- You form a team (1-2) and conduct a project, in which you design/implement/evaluate some useful, interesting, new (or improved) system/networking software/tool. Talk to me for details if interested.
- If you take this option, you can use it to replace the final exam or any 2 machine problems (That is, this honors project worth 200-250 points!)
- There could be extra bonus points for excellent projects!