

# Final Exam

- Time: 2:00 pm – 3:40 pm, Dec. 14<sup>th</sup>, 2021
- Students registered for on campus study **must** attend the exam in the classroom
  - Only 2 students will attend online.
- Physical location: F405, F407, & F415 (more details to be announced)
- Online attendance: be sure to join Zoom at 1:45 pm to set up everything properly

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- For physical attendance, no electronic devices are allowed
  - These include laptops and cell phones
  - We will show a clock on the screen
- For online attendance
  - Find the exam paper in the Quizzes page on Canvas
  - Sign **pledge of honor** and **non-disclosure agreement** in advance, which were emailed to the students.
  - No online searching and no discussion with other students
  - Two cameras: one shows your face and the other shows **your body and screen**
    - Make sure they have enough charge
    - Mute them
  - Other details also emailed to the students.

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- Closed book and closed notes
- Written exam
  - A number of questions that only require you to provide short answers
  - A few questions that require you to write code on the paper. Be clear!
- Bring your student ID card for verification
- Abide by the **Honor Code!**

# Topics

- Subtype and inheritance
- Virtual function
- Abstract base class (interface)
- Representation invariants
- Dynamic memory management and dynamic array
- Constructor taking default arguments and destructor
- Deep copy: copy constructor, overloaded assignment operator
- Linked list
- Template
- Container of pointers: one invariant and three rules
- Polymorphic container
- Operator overloading
- Stack and queue
- STL sequential container

Slide set 14 to Slide set 24  
(Slide set 25 not included)