Object-Oriented Programming Using C++ (605.604) Syllabus

Instructor Contact

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Instructor contact information is listed above. I prefer that you contact me via email. Please be sure to include course number in the subject line. If you use the blackboard e-mail tool, the course number is automatically included. I will make every effort to respond to your inquiry within 24 hours, though this may not always be possible on weekends. If an issue is urgent, you may use text messaging or telephone.

Office Hours

I have reserved numerous time slots during the weekdays for office hours. More information on office hours will be discussed during our first class session.

Course Description

This course provides in-depth coverage of object-oriented programming principles and techniques using C++. Topics include classes, overloading, data abstraction, information hiding, encapsulation, inheritance, polymorphism, file processing, templates, exceptions, container classes, and low-level language features. The course briefly covers the mapping of UML design to C++ implementation and object-oriented considerations for software design and reuse. The course also relates C++ to GUI, databases, and real-time programming. The course material embraces the C++11 language standard with numerous examples demonstrating the benefits of C++11.

Prerequisites

You should have experience in a language such as C, Java, or equivalent.

Course Goals

This course will prepare you to apply object-oriented techniques and notation to the process of developing software. You will be able to perform the following activities: develop requirements, analyze the requirements using object-oriented analysis to identify the software components to be implemented, and design those software components using object-oriented design techniques. The notation of the Unified Modeling Language (UML) will be used throughout.

Course Objectives

To master learning and applying object-oriented programming principles using the C++ language.

Course Site Structure

The course content is divided into modules organized on a weekly basis. Course modules can be accessed by clicking **Course Modules** on the left menu. A module will have several sections including lecture content, readings, preparation instructions, discussions, quizzes and assignments. Homework assignments and quiz submissions can be made via the course content sections.

Textbook

The required textbook for this course is as follows:

- Marc Gregoire, Professional C++, 4th Edition, John Wiley & Sons, 2018
  ISBN 978-1-119-42130-6

Your instructor may recommend additional optional textbooks.

Required Software

Students must have access to a C++ language compiler that supports C++11. There are numerous free compilers available. Some assignments will require drawing UML diagrams. There are several good free or inexpensive tools available for download from the Internet.

Grading

The Engineering for Professionals program uses a +/- grading system, as indicated below: 100–

98 = A+
97–94 = A
93–90 = A−
89–87 = B+
86–83 = B
82–80 = B−
79–77 = C+
76–73 = C
72–70 = C-
69–67 = D+
66–63 = D
<63 = F

Please note that pluses and minuses will be displayed on your course transcript, but they are not used in computing GPA.

Final grades will be determined by the following weighting:

Item	**% of Grade**
Midterm exam	25%
Final Exam	25%
Projects	30%
Problem sets	20%

Help & Support

Students should refer to Help & Support on the left menu for a listing of all the student services and support available to them.

Policies and Guidelines

Academic Integrity

Academic Misconduct Policy

All students are required to read, know, and comply with the Johns Hopkins University Krieger School of Arts and Sciences (KSAS) / Whiting School of Engineering (WSE) Procedures for Handling Allegations of Misconduct by Full-Time and Part-Time Graduate Students.

This policy prohibits academic misconduct, including but not limited to the following: cheating or facilitating cheating; plagiarism; reuse of assignments; unauthorized collaboration; alteration of graded assignments; and unfair competition. You may request a paper copy of this policy at this by contacting jhep@jhu.edu.

Policy on Disability Services

Johns Hopkins University (JHU) is committed to creating a welcoming and inclusive environment for students, faculty, staff and visitors with disabilities. The University does not discriminate on the basis of race, color, sex, religion, sexual orientation, national or ethnic origin, age, disability or veteran status in any student program or activity, or with regard to admission or employment. JHU works to ensure that students, employees and visitors with disabilities have equal access to university programs, facilities, technology and websites.

Under Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990 and the ADA Amendments Act of 2008, a person is considered to have a disability if c (1) he or she has a physical or mental impairment that substantially limits one or more major life activities (such as hearing, seeing, speaking, breathing, performing manual tasks, walking, caring for oneself, learning, or concentrating); (2) has a record of having such an impairment; or (3) is regarded as having such an impairment class. The University provides reasonable and appropriate accommodations to students and employees with disabilities. In most cases, JHU will require documentation of the disability and the need for the specific requested accommodation.

The Disability Services program within the Office of Institutional Equity oversees the coordination of reasonable accommodations for students and employees with disabilities, and serves as the central point of contact for information on physical and programmatic access at the University. More information on this policy may be found at the Disabilities Services website or by contacting (410) 516-8075.

Disability Services

Johns Hopkins Engineering for Professionals is committed to providing reasonable and appropriate accommodations to students with disabilities. Students requiring accommodations are encouraged to contact Disability Services at least four weeks before the start of the academic term or as soon as possible. Although requests can be made at any time, students should understand that there may be a delay of up to two weeks for implementation depending on the nature of the accommodations requested.

Requesting Accommodation

New students must submit a Disability Services Graduate Registration Form along with supporting documentation from a qualified diagnostician that:

- Identifies the type of disability
- Describes the current level of functioning in an academic setting
- Lists recommended accommodations

Questions about disability resources and requests for accommodation at Johns Hopkins Engineering for Professionals should be directed to:

EP Disability Services
Phone: 410-516-2306
Fax: 410-579-8049
E-mail: ep-disability-svcs@jhu.edu