Instructor
Stan Warford  
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Office hours
Monday, 11:00 – 11:50  
Tuesday, 9:00 – 9:50  
Thursday 1:00 – 1:50  
Friday, 11:00 – 11:50  
And by appointment

Course Web page
The course Web page will be used to post the assignments and exam dates.  
https://www.cslab.pepperdine.edu/warford/cosc320/

Objective
The goal of this course is threefold:

• To teach the data structures central to computer science  
• To teach object-oriented design patterns  
• To teach C++ programming

The course is unique because it combines the first two goals into one unified approach in a novel way. Object-oriented design patterns are usually applied to programming in the large. Consequently, teaching OO design patterns is traditionally postponed until later in the curriculum, when they can be applied to large software projects in software engineering or capstone courses. This course is unique, because it applies OO design patterns to programming in the small, thus teaching both data structures and OO design patterns.

Learning outcomes
The computer science program learning outcomes (PLO) for the computer science/mathematics major are the ability to:

PLO 1. Implement algorithms  
PLO 2. Prove computational theorems  
PLO 3. Analyze computational systems  
PLO 4. Communicate technical results

The course student learning objectives (SLO) for CoSc 320, Data Structures are the ability to:

Implement an algorithm using selection and iterative control structures. (PLO 1)  
Implement an algorithm using recursive control structures. (PLO 1)  
Implement an algorithm using programmer-defined classes and objects. (PLO 1)  
Implement searching and sorting algorithms. (PLO 1)  
Analyze the time-complexity of an algorithm. (PLO 3)  
Present project results in written and oral form. (PLO 4)  
Analyze the time complexity of an algorithm. (PLO 3)
Required text
Zung Nguyen and Stan Warford, Design Patterns for Data Structures, handout.

Recommended text
Erich Gamma, Richard Helm, Ralph Johnson, and John Vlissides, Design Patterns, second edition, Addison-Wesley, 1995.

Final grade
22% Homework
54% Tests (18% each test)
24% Final - cumulative

Class schedule
The course web page has the schedule for the homework assignments, which are due twice weekly. The exam schedule is as follows:

   Test 1, Tuesday, September 19
   Test 2, Friday, October 20
   Test 3, Tuesday, November 14
   Final, Wednesday, December 13, 1:30 p.m. – 4:00 p.m.

Late Homework Policy
There are two types of homework assignments in this course — written assignments and programming assignments. Both are handed in electronically on Pepperdine Courses and are due at 11:55 p.m. on the due date. Half credit for written homework one assignment late. No credit thereafter. Note that your total homework score is equivalent to more than one test.

Programming Homework Policy
If your program does not compile (build)
   Automatic 20% of total points for that assignment
   No resubmission
Late submission
   Accepted up to the time of the following assignment
   Hand in with the following assignment
   Automatic 50% of graded score
Late submission that does not compile
   Automatic 10% of total points for that assignment

Course evaluations
Course evaluations are required online near the end of the semester and count as a homework assignment. After you complete the evaluation, email the notice of completion for this course to me.
Attendance policy
Attendance is important and may affect your final grade. You are responsible for making sure that your attendance has been recorded. Please provide written documentation for excused absences. There will be no makeup exams. If you miss an exam due to illness or an unexpected major emergency, the final exam score will be substituted for your missed exam score. Doctor’s note required for all missed exams.

Accessibility notice
Any student with a documented disability (physical, learning, or psychological) needing academic accommodations should contact the Student Accessibility Office (Main Campus, Tyler Campus Center 264, x6500) as early in the semester as possible. All discussions will remain confidential. Please visit https://www.pepperdine.edu/student-accessibility/ for additional information.

Academic integrity
See http://seaver.pepperdine.edu/academicintegrity/ for the academic integrity standards at Seaver College

Mission support
See https://www.pepperdine.edu/about/our-story/mission-vision/ for the mission statement of the university and https://seaver.pepperdine.edu/about/our-story/seaver-mission/ for the mission statement of Seaver College. This course supports these mission statements by investigating the truth of its discipline and by preparing students for lives of service to others in the field of computer science.