CS 312: Object Oriented Software Design  
Fall 2019

Instructor:  
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Office Hours: 2:00 - 3:00 MWF (except four department meetings) or by appointment (email me)

Learning Outcomes  
1. I can solve problems using object-oriented analysis (OOA) and design (OOD) techniques.  
2. I can independently use classes from the Java Collections Framework.  
3. I can code with Java abstract classes, inheritance, and interfaces.  
4. I can code with Java generics.  
5. I understand advanced sorting algorithms (e.g., heap sort, quick sort, and merge sort).

Text  
(Required) Koffman and Wolfgang, Data Structures: Abstraction and Design Using Java, Wiley  
(Required) zyBooks, Data Structures Essentials  
Sign up at zyBooks.com using code LOYOLACS312BinkleyFall2019

Grading:  
Nine Programming Assignments 300 (6 × 25 + 3 × 50 - six easy 'n three hard)  
yBooks 50  
Midterm 100  
Final 100  
Slush ? (Slush includes “Daily” homework, class contribution, etc.)  
Total 55?

Late work:  
Assignments are due on their due date at (or before) the start of class; assignments handed in after that time lose 10% a day (a day is defined as 24 hours).

Cheating:  
Don’t. Individual work is expected on your programs and exams (note that asking for help finding a “bug” is not considered cheating). You may work together on the homework. Read the honor code.

Tentative Schedule:  

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Book Readings &amp; Notes</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction, Linux, IDEs, and a few UML diagrams</td>
<td>1</td>
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<tr>
<td>2</td>
<td>Generics in the JCF (Lists, Stacks, and Queues)</td>
<td>2, 4</td>
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<tr>
<td>3</td>
<td>OOA ‘n OOD Think I, Use cases</td>
<td>3, 5</td>
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<tr>
<td>4</td>
<td>Testing I (JUnit and TDD); Recursion, Iteration, and OO</td>
<td>3, 5 [ICSME]</td>
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<tr>
<td>5</td>
<td>Testing II, Debugging, Recursion Kata</td>
<td>1.4</td>
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<tr>
<td>6</td>
<td>OOP (inheritance, abstract classes, and interfaces)</td>
<td>6.4, read 6.6 twice</td>
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<tr>
<td>7</td>
<td>buffer and midterm</td>
<td>6.6 - 6.7, 8.8</td>
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<tr>
<td>8</td>
<td>Trees I</td>
<td>6.4, read 6.6 twice</td>
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<tr>
<td>9</td>
<td>Trees II: heaps and heap sort</td>
<td>6.6 - 6.7, 8.8</td>
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<tr>
<td>10</td>
<td>OOA Think II</td>
<td>9.1, 9.4, 9.6</td>
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Note If you have a disability which is documented with the Disability Support Services Office and wish to discuss academic accommodations with me, please contact me as soon as possible.