Data Structures Using Java

CSE 2123

Description / Conditions

Transcript Abbreviation:
Data Struct Java

Course Description:
Subroutines and modular programming; searching; basic data structures; recursion; introduction to sequential files.

Course Levels:
Undergraduate (1000-5000 level)

Designation:
Elective

General Education Course:
(N/A)

Cross-Listings:
(N/A)

Course Detail

Credit Hours (Minimum if “Range” selected):
3.00

Max Credit Hours:
(N/A)

Select if Repeatable:
Off
Maximum Repeatable Credits:  
(N/A)

Total Completions Allowed:  
(N/A)

Allow Multiple Enrollments in Term:  
No

Course Length:  
14 weeks (autumn or spring)  
12 weeks (summer only)

Off Campus:  
Never

Campus Location:  
Columbus

Instruction Modes:  
In Person (75-100% campus; 0-24% online)  
Distance Learning (100% online)

Prerequisites and Co-requisites:  
Prereq: 1223.

Electronically Enforced:  
No

Exclusions:  
(N/A)

Course Goals and Learning Objectives

Course Goals / Objectives:  
Be competent with modular design and structured programming techniques  
Be competent with commonly used data structures  
Be competent with how to design and implement abstract data types  
Be competent with sequential file I/O

Check if concurrence sought:  
No
## Contact Hours

### Contact Hours:

<table>
<thead>
<tr>
<th>Topic</th>
<th>LEC</th>
<th>REC out-of-class</th>
<th>REC in-class</th>
<th>Weekly LAB out-of-class</th>
<th>Weekly LAB in-class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object-oriented programming</td>
<td>9.0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Recursion</td>
<td>4.0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Sorting and binary search</td>
<td>8.0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Linked lists</td>
<td>6.0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Stacks</td>
<td>3.0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Queues</td>
<td>3.0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Binary trees</td>
<td>4.0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Quizzes, exams, and review</td>
<td>4.0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
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</table>

## Grading and Texts

### Grading Plan:
Letter Grade

### Course Components:
Lecture  
Lab

### Grade Roster Component:
Lecture

### Credit by Exam (EM):
No
Grades Breakdown:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeworks</td>
<td>10%</td>
</tr>
<tr>
<td>Labs</td>
<td>25%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Midter</td>
<td>20%</td>
</tr>
<tr>
<td>Final</td>
<td>35%</td>
</tr>
</tbody>
</table>

Representative Textbooks and Other Course Materials:

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Notes</td>
<td>Instructor</td>
<td></td>
</tr>
</tbody>
</table>

ABET Student Learning Outcomes

ABET-CAC Criterion 3 Outcomes:

<table>
<thead>
<tr>
<th>Contribution</th>
<th>Hours</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some contribution (1-2 hours)</td>
<td>1</td>
<td>Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.</td>
</tr>
<tr>
<td>Substantial contribution (3-6 hours)</td>
<td>2</td>
<td>Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program’s discipline.</td>
</tr>
<tr>
<td>Some contribution (1-2 hours)</td>
<td>4</td>
<td>Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles</td>
</tr>
<tr>
<td>Significant contribution (7+ hours)</td>
<td>6</td>
<td>Apply computer science theory and software development fundamentals to produce computing-based solutions.</td>
</tr>
</tbody>
</table>

ABET-ETAC Criterion 3 Outcomes: (N/A)
ABET-EAC Criterion 3 Outcomes:

<table>
<thead>
<tr>
<th>Some contribution (1-2 hours)</th>
<th>1</th>
<th>an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substantial contribution (3-6 hours)</td>
<td>2</td>
<td>an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors</td>
</tr>
<tr>
<td>Some contribution (1-2 hours)</td>
<td>4</td>
<td>an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts</td>
</tr>
<tr>
<td>Some contribution (1-2 hours)</td>
<td>7</td>
<td>an ability to acquire and apply new knowledge as needed, using appropriate learning strategies</td>
</tr>
</tbody>
</table>

Embedded Literacies (UG courses only)

Embedded Literacies Info:

Attachments / Additional Notes or Comments

Attachments:  
(N/A)

Additional Notes or Comments:  
(N/A)