COSC-1437, Programming Fundamentals II, Syllabus
North Lake College

This course syllabus is intended as a set of guidelines for COSC 1437. Both North Lake College and your instructor reserve the right to make modifications in content, schedule, and requirements as necessary to promote the best education possible within prevailing conditions affecting this course.

Instructor Information
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Course Information
Course Title: Programming Fundamentals II
Course Number: COSC-1437
Section Number: 70225
Semester/Year: Spring/2020
Credit Hours: 4
Class Meeting Time (Lecture): Online
Class Meeting Time (Lab): Online
Certification Date: April 3, 2020
Last Day to Withdraw: May 4, 2020

Course Prerequisites
COSC 1436 and MATH 1314 or higher.

Course Description
This course focuses on the object-oriented programming paradigm, emphasizing the definition and use of classes along with fundamentals of object-oriented design. The course includes basic analysis of algorithms, searching and sorting techniques, and an
introduction to software engineering processes. Students will apply techniques for testing and debugging software. This course may use instructional examples and assignments from various programming languages including but not limited to C, Objective-C, C++, and/or Java. (This course is included in the Field of Study Curriculum for Computer Science.) COSC 1437 will satisfy the Associate in Sciences degree general elective requirement. This course will fulfill degree requirements established by the colleges of DCCCD only if this course has been successfully completed and the date of completion does not exceed 10 years. (3 Lec., 3 Lab.)

Student Learning Outcomes

Upon successful completion of this course, students will:

- Identify and explain a programming development lifecycle, including planning, analysis, design, development, and maintenance.
- Demonstrate a basic understanding of object-oriented programming by using structs and classes in software projects.
- Use object-oriented programming techniques to develop executable programs that include elements such as inheritance and polymorphism.
- Document and format code in a consistent manner.
- Apply basic searching and sorting algorithms in software design.
- Apply single- and multi-dimensional arrays in software.
- Use a symbolic debugger to find and fix runtime and logical errors in software.
- Demonstrate a basic understanding of programming methodologies, including object-oriented, structured, and procedural programming.
- Describe the phases of program translation from source code to executable code.

Texas Core Objectives

The College defines essential knowledge and skills that students need to develop during their college experience. These general education competencies parallel the Texas Core Objectives for Student Learning. In this course, the activities you engage in will give you the opportunity to practice two or more of the following core competencies:

1. **Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. **Communication Skills** - to include effective development, interpretation, and expression of ideas through written, oral, and visual communication
3. **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
4. **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
5. **Personal Responsibility** - to include the ability to connect choices, actions, and consequences to ethical decision-making

6. **Social Responsibility** - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

**Required Course Materials**


Note: A student of this institution is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

**Graded Work**

The tables below provide a summary of the graded work in this course and an explanation of how your final course grade will be calculated.

**Summary of Graded Work**

<table>
<thead>
<tr>
<th>Assignments and Assessments</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz Average (highest 6)</td>
<td>7</td>
<td>25%</td>
</tr>
<tr>
<td>Lab Assignment average</td>
<td>7</td>
<td>25%</td>
</tr>
<tr>
<td>Programming Projects</td>
<td>3</td>
<td>25%</td>
</tr>
<tr>
<td>Exam Average</td>
<td>2</td>
<td>25%</td>
</tr>
</tbody>
</table>

**TOTAL: 100%**

**Final Grade**

<table>
<thead>
<tr>
<th>Percentages</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
</tr>
<tr>
<td>80-89%</td>
<td>B</td>
</tr>
<tr>
<td>70-79%</td>
<td>C</td>
</tr>
<tr>
<td>60-69%</td>
<td>D</td>
</tr>
<tr>
<td>0-59%</td>
<td>F</td>
</tr>
</tbody>
</table>
Description of Graded Work

- There are two 50-question exams, a mid-term and a final, each based on 100 percent. The Exam portion of your final grade is calculated by averaging both of your exam grades.

- There are seven 10-question quizzes, each based on 100 percent. The Quiz portion of your final grade is calculated by averaging your highest six quiz grades.

- There are seven lab assignments, each based on 100 percent. The Lab Assignment portion of your final grade is calculated by averaging all your lab assignment grades.

- There are three Programming Project assignments, each based on 100 percent. The Programming Project Assignment portion of your final grade is calculated by averaging all three of your Programming Project assignment grades.

There are no extra credit assignments in this course.

Attendance and Your Final Grade
Quizzes and both the Mid-Term Exam and the Final Exam are administered online.

Late Work Policy
Lab Assignments submitted one (1) day after their due date will be graded on the basis of 90 points instead of 100 points.
Lab Assignments submitted two (2) days after their due date will be graded on the basis of 80 points instead of 100 points.
Lab Assignments submitted three (3) days after their due date will be graded on the basis of 70 points instead of 100 points.
Lab Assignments submitted four (4) or more days after their due date will receive a grade of zero (0) points.

Other Course Policies
Lab Assignments and Programming Projects must be submitted using Blackboard. No assignments will be accepted as attachments to an email message.

Institutional Policies
Institutional Policies relating to this course can be accessed using the link below. These policies include information about tutoring, Disabilities Services, class drop and repeat options, Title IX, and more.
North Lake Institutional Policies (http://www.northlakecollege.edu/syllabipolicies)

Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Computers and Java; Java Fundamentals</td>
<td>Chapters 1 and 2</td>
</tr>
<tr>
<td>2</td>
<td>Decision Structures; Loops and Files</td>
<td>Chapters 3 and 4</td>
</tr>
<tr>
<td>3</td>
<td>Methods; A first Look at Classes</td>
<td>Chapter 5 and 6</td>
</tr>
<tr>
<td>4</td>
<td>Arrays and the ArrayList Class</td>
<td>Chapter 7</td>
</tr>
<tr>
<td>5</td>
<td>A Second Look at Classes and Objects</td>
<td>Chapter 8</td>
</tr>
<tr>
<td>6</td>
<td>Text Processing and More About Wrapper Classes; Inheritance</td>
<td>Chapters 9 and 10</td>
</tr>
<tr>
<td>7</td>
<td>Exceptions and Advanced File I/O</td>
<td>Chapter 11</td>
</tr>
</tbody>
</table>

A document showing the due dates for all the Quizzes, Lab Assignments, Programming Projects, Mid-Term Exam, and the Final Exam is in the Course Documents section of the Blackboard course.

Online Component:

As this is a class with an online component, there are required online study materials and activities that are available on eCampus for the entire semester and accessible almost 24/7. Therefore, access to a computer with Internet access and updated software (available free from Adobe.com) are required. If a student does not have a home computer or Internet, such options as the Student Resource Center located in the North Lake Library or at a local public library are available. Students may also search for other locations with such services.