Syllabus
CSC 1140
DATA STRUCTURE & ABSTRACTION
Spring 2020

Professor: John Youssefi, Ph.D.
Course Hours: Wednesday 6:30-10:30 pm.
Office: SM 205, (650) 508-3450, jyoussefi@ndnu.edu
Office Hours: Tuesday, Wednesday, and Thursday 5:30-6:30 & by appointment.
Required Text: Java How to Program, Deitel & Deitel 10th Edition
Prerequisites: CSC 1130 or permission of instructor.

Course Description:
Focuses on object-oriented approach with Java to a variety of abstract data types and their associated algorithms. Topics include algorithm analysis, recursion, stacks, queues, lists, trees, binary trees, AVL trees, recursive techniques for implementing generic data structures, sorting algorithms, divide and conquer, complexity analysis for some search and sort algorithms, and hashing.

Course Objectives/Learning Outcomes:
* Students will develop the ability to conceptually formulate and analyze problems in computing and information processing using efficient algorithms, data structures, and mathematical tools to solve problems (PLOs 1)
* Students show mastery of abstract structures, objects and their use in an object-oriented environment; (PLOs 2)
* Students will demonstrate the ability to conceptually formulate and analyze problems in computing and information processing using efficient algorithms, data structures, and mathematical tools to solve problems (PLOs 1)
* Students will design and implement various data structures in an object-oriented environment; (PLOs 1)
* Students will learn different algorithms, modularity and their correct use in software applications; Familiarity with time-space analysis; (PLOs 1)
* Students will achieve higher competency in software design and programming (with JAVA as programming language); (PLOs 2)
* Students will write documentation and comments in their program using javadoc. (PLOs 3)

* “PLOs” refers to the 'CSC Program Learning Outcomes' which can be found in the catalog
Assessment Methods:

- Through homework and programming assignments
- Through quizzes and tests
- Through a comprehensive project

Resources: This course is recommended to be taken concurrently with CSC1130L-Programming Lab, where students receive assistance from a Computer Science instructor.

Procedures:

Class work includes group and individual work, discussions, and lecturing.

Homework will be assigned each class.

HOMEWORK WILL BE DUE BY NEXT WEEK ON THURSDAY, 9:00 pm.

IF YOU SUBMIT YOUR HOMEWORK LATE BY ONE WEEK, YOU LOSE 10 POINTS.

HOMEWORK SUBMITTED LATER THAN ONE WEEK AFTER THE DUE DATE WILL NOT BE ACCEPTED.

INCOMPLETE ASSIGNMENTS WILL NOT BE ACCEPTED.

Homework turned in MUST indicate on the first page:
- Your Name;
- Date due;
- Date turned in;
- Exercise/Problem numbers, chapter, page in the textbook;
- For each programming exercise/problem:
  - Does/Does Not compile without error,
  - Does/Does Not execute without error.

The reading assignments in the text are very important, and should be completed BEFORE class.

Tentative Schedule:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Week</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Review Classes, Objects, Files</td>
</tr>
<tr>
<td>2</td>
<td>Inheritance</td>
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<tr>
<td>3</td>
<td>Interfaces</td>
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<tr>
<td>4</td>
<td>Polymorphism</td>
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<tr>
<td>5</td>
<td>Generic Programming</td>
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<tr>
<td>6</td>
<td>Recursion</td>
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<tr>
<td>7</td>
<td>Midterm</td>
</tr>
<tr>
<td>8</td>
<td>break</td>
</tr>
<tr>
<td>9</td>
<td>Binary Searching &amp; Sorting</td>
</tr>
</tbody>
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NOTE:
Students are strongly encouraged to come during office hours with any problems regarding the course or assignments. Attendance is mandatory. Missed classes will cause severe problems to your progress. Full preparation for every class is very important to your success.

GRADING:

Midterm and Final Exam.

Make-up Midterm Exam or Final Exam will be approved only in very special situations that are beyond your control (hospitalization, serious accidents, etc.). All such situations will have to be documented as required by instructor, and, normally, arrangements with the instructor must be made at least 3 days before the date of the exam. Regardless of reasons, the approval for a make-up exam is totally at the discretion of the instructor. If you miss an exam, and no make-up was approved, you will get 0 (zero) points for that exam. THE FINAL EXAM IS COMPREHENSIVE FROM THE WHOLE COURSE.

Final Grade.

The Homework and the Exams are graded as percent correct. The final course grade will be calculated using this formula:

\[ FG = 0.25 \times \text{Final Exam} + 0.25 \times \text{Midterm Exam} + 0.10 \times \text{Quiz} + 0.40 \times \text{Homework} \]

Letter grades will be assigned on the following basis:

- A = 93-100, A- = 89-92
- B+ = 85-88, B = 80-84, B- = 76-79
- C+ = 72-75, C = 67-71, C- = 63-66
- D+ = 59-62, D = 54-58, D- = 50-53
- F = 0-49.

Incomplete:
An "Incomplete" may be given to a student who has maintained satisfactory attendance and work throughout most of a course, including Independent
Study, but due to extraordinary circumstances is unable to complete the required work by the end of the semester/session in which the course was taken. See the College Catalog below (p.56)

**Average Student Workload Expectations**

Class time consists of 60 hours and students are expected to attend. Students are expected to engage in approximately 105 hours of out-of-class homework over the fifteen weeks, or approximately seven hours per week. Course assignments are made in accordance with this expectation.

<table>
<thead>
<tr>
<th>Workload Distribution</th>
<th>Hours in Class:</th>
<th>60</th>
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<tbody>
<tr>
<td>Reading</td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>Written Assignments</td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>Exam Preparation</td>
<td></td>
<td>15</td>
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</tbody>
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**Student Success Center** 650-508-3696

The Student Success Center (SSC), located in the Campus Center, is dedicated to supporting students’ academic success at NDNU. The SSC provides writing and subject tutoring, test proctoring for students with accommodations, facilitates the math placement test (MPT), and is open for students from 8:00 a.m. – 10:00 p.m. with business hours from 9:00 a.m. – 5:00 p.m. For more information, see: https://www.ndnu.edu/academics/student-success-center/

The goal of the Student Success Center is to promote student learning and academic innovation. Professional staff members, peer tutors, academic advisors, and faculty work together to promote a supportive educational environment. Writing and subject tutoring schedules are forwarded directly to students’ NDNU e-mails and are included in the Student Weekly Update circulated by NDNU’s Communications Department.

Writing labs are offered in lower and upper division English courses. Writing tutoring is available on a drop-in basis and virtual writing tutoring is by appointment for our off-campus sites. Basic English language assistance is provided to international students who may need support writing papers or with general English. A writing lab dedicated to both APA and MLA writing styles is also offered. Math, computer science, and the sciences subject tutoring are led by peer tutors and a professional math tutor. Subjects, schedules, and tutor details are available at the Student Success Center.

**Disability Resource Center**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Students with disabilities, whether physical, learning, or psychological, who believe that they may need accommodations in this class are encouraged to contact the Disability Resource Center as soon as possible to ensure that such accommodations are implemented in a timely fashion. Please meet with the DRC staff to verify your eligibility for any classroom accommodations and for academic assistance related to your disability. Accommodations are not provided retroactively. The Disability Resource Center
is located at St Joseph Hall, 117. Please contact the DRC by email at DRC@ndnu.edu or by phone at 650-508-3670.

**Counseling Services**  (650) 508-3714  CounselingServices@ndnu.edu  New Hall E18 / E19

The mission of Counseling Services is to promote and enhance the overall wellbeing of students so that they may reach their potential for personal growth and academic success. Counseling Services is open Monday-Friday from 9am to 5pm, and currently enrolled students are welcome to call, email or drop-by to schedule an appointment.

**Course Evaluations/Teaching Effectiveness Surveys: Term 2 and Full-Semester**

**Spring 2020 Full-semester and Term 2 courses**

Teaching Effectiveness Surveys (course evaluations) will be available online through Campus Portal from **April 27 – May 15, 2020**. Your feedback regarding courses and faculty is very important to Notre Dame de Namur University, to your faculty, and to me as the instructor for this course. Your feedback helps us review and improve their teaching, helps departments/programs review and improve program content, and is used by the university in making decisions about tenure, promotion, and hiring decisions for part-time faculty.

**Directions:** To access, please enable pop-ups in your browser (uncheck pop-up blocker), then in Campus Portal look for the "**You have an active survey**" link in the left sidebar. Click that link to open the Course Evaluation Surveys page, which has a link to a survey for each course in which you're enrolled. Your feedback is very important! Please complete your evaluations for all your courses promptly. Remember: Your responses are anonymous.

**Academic Honesty**

NDNU’s core values include learning, integrity, and honesty, values we live out in all areas of our learning community. Academic honesty means you are able to demonstrate your own knowledge and skills and receive feedback on your learning that can help you improve. By taking responsibility for your own work and avoiding actions that could give you an unfair advantage over others, you are contributing to the NDNU learning community and developing professional skills and values that will serve you well into the future. Academic honesty is one of the most important values of a university community, and breaches of this trust have serious consequences. Please see the Student Handbook for a detailed discussion of Academic Conduct expectations.

**Key Academic Calendar Dates**

- Monday, January 20 – Martin Luther King Day
- Drop Deadline: Tuesday, January 26
- Thursday, February 6: Professional Development Day
  - no classes before 3:00pm
- February 26 – March 3 – Midterm
- March 9 – 13 Spring Break
- Friday, March 4 – Midterm and Term 1 grades due
- May 1 – May 6 Finals
• Final Grades Due Friday, May 15