

LINCOLN UNIVERSITY
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
COURSE SYLLABUS

COURSE TITLE: Programming II
COURSE NUMBER: CSC-159
CREDITS: 3
PREREQUISITE CSC 158 (Programming I)

COURSE DESCRIPTION:

This course is a continuation of CSC-158. The students will use a structured programming language such as JAVA or C++ in problem solving. This course examines advanced features of modern programming languages such as object-oriented programming, string manipulation functions, and visual programming. Both procedural and event-driven programmings are covered. As a preparation for CSC 254, this course will also include an introduction to data structures such as queues and stacks.

REQUIRED TEXT (S)/ MATERIALS:

Sams Teach Yourself Java 6 in 21 days, Rogers Cadenhead & Laura Lemay

INSTRUCTOR INFORMATION:

Instructor: Ali Barimani
Office Location: Nelson Science Center Room 222
Phone: 1-484-365-7442
Office Hours: MWF: 11:00AM- 12:00AM
TR : 11:00AM- 12:30PM
W: 01:00PM- 02-PM

For full schedule information please see: <http://www.lincoln.edu/math/faculty/abarimaniinfo.html>

COURSE STUDENT LEARNING OUTCOMES:

The student will

- **CSLO #1:** Program codes that utilize advanced features of a programming language such as G.U.I. tools (e.g. JApplet, JFrame classes of Java) and design visual forms for data processing
- **CSLO #2:** Demonstrate skills for debugging (and tracing programs)
- **CSLO #3:** Implement algorithms using Java
- **CSLO #4:** Solve problems such as estimating the area underneath a curve, calculating tax based on pro-rated tables, calculating GPA via programming
- **CSLO #5:** Demonstrate skills to modify algorithms and programs to accomplish the needed outcome

PROGRAM STUDENT LEARNER OUTCOMES (For CSC Majors Only):

The Computer Science Major will gain the following skills toward their major in the following PSLO categories.

- **PSLO #1 [T]:** Programming (in Java)
- **PSLO #2 [T]:** Solving Problems & Algorithms
- **PSLO #3 [T]:** Analyzing & Using Data

Note: This is a **Target course** as part of program evaluation of PSLO #1,2, and #3.

CORE CURRICULUM STUDENT LEARNING OUTCOMES:

- **UCSLO #2:** Critical Thinking
- **UCSLO #6:** Quantitative Reasoning

DIRECT AND INDIRECT ASSESSMENT MEASURES FOR CSLOS:

- **CSLO #1:**
 - 1) In-class computer lab work on creation of Graphical User Interface/ Visual Programming
 - 2) Written Tests questions on Graphical User Interface/ Visual Programming
 - 3) Practical Tests questions on Graphical User Interface/ Visual Programming
 - 4) Projects on Graphical User Interface/ Visual Programming
- **CSLO #2:**
 - 1) Tests questions on debugging (fixing code errors)
 - 2) Fixing code errors on projects
 - 3) In-class computer lab work on debugging
- **CSLO #3:**
 - 1) Tests questions on Algorithms
 - 2) Projects on Algorithms
- **CSLO #4:**
 - 1) Tests questions on problem solving
 - 2) Projects on problem solving
- **CSLO #5:** Demonstrate skills to modify algorithms and programs.
 - 1) Tests questions on Modifying Algorithms
 - 2) Projects on Modifying Algorithms

DIRECT AND INDIRECT ASSESSMENT MEASURES FOR OTHER SLOS:

Embedded Test Questions and/ or Specifics Projects and Lab Works from the list under the CSLO measuring tools also measure a student's learning outcome at the program or core curriculum level if chosen as a Target CSLO. For more information about the Target CSLOs

and links to PSLOs and UCSLOs (also denoted by UCOs) please see the department assessment reports posted on our website:

<http://www.lincoln.edu/math/indexAssessments.html>

TENTATIVE SCHEDULE OF TOPICS COVERED AND WEEKLY ASSIGNMENTS:

WEEK 1-2

- . Review of programming control statements (first C++, then Java)
- . Console programming basics
- . Defining User-defined classes and objects

WEEK 3-5

- . Problem-solving
- . String class
- . Double class
- . Character class
- . Static and instance methods
- . Misc. Library classes
- . Method overloading
- . Error Handling using try/catch statements

WEEK 6-7

- . Mid-level Problem-solving
- . Arrays
- . Introduction to stacks/ Queues

WEEK 8-15

- . Advanced Problem-solving
- . Inheritance
- . Interfaces and packages
- . Multithreaded programming
- . Event handling and graphic user interfaces (G.U.I.)
- . Applets
- . Visual Applications

WEEK 1-15

.Several programs/ algorithms including introductory data structure and case studies would be examined complementing the topics covered.

- . **Test #1** during **weeks 4-5**
- . **Test #2** during **the midterm week**
- . **Test #3 (Practical: write code on the computer during test)** approximately **weeks 11-12**
- . **The Final Exam** is administered during **the official university final schedule period**
- . **Computer Projects:**

Projects are assigned about every **two-three weeks**. Computer Projects will be given on material covered in class. General computer labs are available throughout the campus for students to do their work. The students are encouraged to make regular visits during office hours, to meet in study groups, and to use the Computer/ Programming Tutors when available.

Late Work And Make-Ups

All computer projects, assignments, quizzes and exams must be completed by the scheduled date. Late assignments or make-up tests or quizzes will only be allowed with **official documentation** and grades may be lowered. To qualify for a make-up, a student must have notified the professor and rescheduled in a timely manner.

CALCULATION OF FINAL GRADES:

The final score will be calculated based on the scores earned in each of the test and project listed below and work done in class on computers using a weighted average formula shown. The Final letter grade will be awarded using the grading scale guideline shown.

- | | |
|---|------------------------|
| 1) Two Written Tests (includes vocabulary questions) | 100 Points each |
| 2) One Practical Test | 100 Points |
| 3) Final Exam | 100 Points |
| 4) In-Class Computer Lab Work | 50 Points |
| 5) 4 Projects | 20 Points each |

Tests: 80%
Projects (3 to 5): 20%

$$\text{FINAL SCORE} = (\text{Test1 Score} + \text{Test2 Score} + \text{Test3 Score} + \text{Final Test Score} + \text{Lab Work Score}) / 450 * 80 + (\text{P1 Score} + \text{P2 Score} + \text{P3 Score} + [\text{P4 Score}] + [\text{P5 Score}]) / (60 \text{ or } [80] \text{ or } [100]) * 20$$

The grading scale guideline: **

A	92-100%
A-	88-91%
B+	85-87%
B	82-84%
B-	78-81%
C+	75-77%
C	72-74%
C-	68-71%
D+	65-67%
D	58-64%
F	0-57%

UNIVERSITY POLICY:

1) Attendance:

Lincoln University uses the class method of teaching, which assumes that each student has something to contribute and something to gain by attending class. It further assumes that there is much more instruction absorbed in the classroom than can be tested on examinations. Therefore, students are expected to attend all regularly scheduled class meetings and should exhibit good faith in this regard. For the control of absences, the faculty adopted the following regulations:

Four absences may result in an automatic failure in the course.

Three tardy arrivals may be counted as one absence.

Absences will be counted starting with whatever day is specified by the instructor but not later than the deadline for adding or dropping courses.

In case of illness, death in the family, or other extenuating circumstances, the student must present documented evidence of inability to attend classes to the Vice President for Student Affairs and Enrollment Management. However, in such cases the student is responsible for all work missed during those absences.

Students representing the University in athletic events or other University sanctioned activities will be excused from class (es) with the responsibility of making up all work and examinations.

The Registrar will issue the excused format to the faculty member in charge of the off- or on-campus activity for delivery by the student(s) to their instructors.

STUDENTS WITH DISABILITIES STATEMENT:

Lincoln University is committed to non-discrimination of students with disabilities and therefore ensures that they have equal access to higher education, programs, activities, and services in order to achieve full participation and integration into the University. In keeping with the philosophies of the mission and vision of the University, the Office of Student Support Services, through the Services for Students with Disabilities (SSD) Program, provides an array of support services and reasonable accommodations for students with special needs and/or disabilities as defined by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. The Services for Students with Disabilities Program seeks to promote awareness and a campus environment in which accommodating students with special needs and/or disabilities is natural extension of the University's goal.

UNIVERSITY ACADEMIC INTEGRITY STATEMENT:

Students are responsible for proper conduct and integrity in all of their scholastic work. They must follow a professor's instructions when completing tests, homework, and laboratory reports, and they must ask for clarification if the instructions are not clear. In general, students should not give or receive aid when taking exams, or exceed the time limitations specified by the professor. In seeking the truth, in learning to think critically, and in preparing for a life of constructive service, honesty is imperative. Honesty in the classroom and in the preparation of papers is, therefore, expected of all students. Each student has the responsibility to submit work that is uniquely his or her own. All of this work must be done in accordance with established principles of academic integrity.