

COMP 150 – Introduction to Computer Science

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1 Overview

An introduction to computer science providing a broad survey of the discipline while emphasizing the computer's role as a tool for describing, organizing and manipulating information. Topics to include machine architecture, software, data organization, and the potential and limitation of machines. Serves as a terminal course for students who want a one-course introduction to the field, as well as a preliminary course to upper-level computer science offerings. Note: this is NOT a programming class and it may be taken concurrently with COMP 125 or 170.

1.1 The Instructor

instructor: **Prof. Michael Goldwasser**
e-mail: mhg@cs.luc.edu
web: <http://www.cs.luc.edu/~mhg/>
office: Damen Hall 319
telephone: (773) 508-2883
office hours: Tuesdays 10:30–11:30am, LSC
 Thursdays 3:45–4:45pm, WTC

1.2 The Lectures

The material will be presented in two weekly lectures, meeting Tuesdays and Thursdays, from 2:30–3:45pm, in room 205 of Lewis Towers on the Water Tower Campus. Class participation is most welcome.

1.3 Textbooks

The required textbooks for this course are:

Title: *Computer Science Illuminated*
Authors: Nell Dale and John Lewis
Publisher: Jones and Bartlett, 2002
ISBN: 0-763-71760-6
Website: csilluminated.jbpub.com

Title: *Explorations in Computer Science: A Guide to Discovery*
Authors: R. Mark Meyer
Publisher: Jones and Bartlett, 2003
ISBN: 0-763-72265-0
Website: www.jbpub.com/catalog/0763722650

The first of these titles will be our primary text, and should be available both at the Barnes and Noble campus bookstore, as well as Beck's Bookstore, or various online book vendors.

The second of these titles will serve as a lab manual and includes a CD with software. It is due for release in February, and the publisher has graciously provided us with an advanced copy for use this semester. We will give more details early in the semester regarding how to obtain this material.

Additionally, there are some other books which try to give an overview of computer science in the same spirit as the books we have chosen. Though we have chosen not to use the following books, we list them for your interest:

- *Computer Science, An Overview*, 6th edition
Author: J. Glenn Brookshear
Publisher: Addison Wesley, 2000
ISBN: 0-201-35747-X
Website: www.awlonline.com/product/0,2627,020135747X,00.html
- *The Analytical Engine: An Introduction to Computer Science Using the Internet*
Authors: Rick Decker and Stuart Hirschfield
Publisher: Brooks/Cole Pub, 1998
ISBN: 0-534-95365-4
Website: see www.brookscole.com
- *An Invitation to Computer Science, Java Version*
Authors: G. Michael Schneider and Judith L. Gersting
Publisher: Brooks/Cole Pub, 2000
ISBN: 0-534-37488-3
Website: see www.brookscole.com
- *Fluency with Information Technology: Skills, Concepts & Capabilities*
Author: Lawrence Snyder
Publisher: Addison Wesley, 2003
ISBN: 0-321-12201-1
Website: www.aw.com
- *Foundations of Computer Science – From Data Manipulation to Theory of Computation*
Author: Behrouz A. Forouzan
Publisher: Brooks Cole, 2003
ISBN: 0-534-39143-5
Website: www.brookscole.com
- *The Essential Guide to Computing: The Story of Information Technology*
Author: E. Garrison Walters
Publisher: Prentice Hall PTR, 2001
ISBN: 0-130-19469-7
Website: www.phptr.com/

1.4 Prerequisites

There are both official and unofficial prerequisites for this course. The official prerequisite is MATH 100 (Intermediate Algebra) or equivalent placement. The reason for this prerequisite is that our study of computer science will inherently involve a level of analytical and mathematical sophistication. This will arise in understanding how information is represented digitally and how computations proceed on such data.

The unofficial prerequisite is that, although we do not expect students to have any formal training in computing, we will expect that the great majority of students enter the class with at least some experience as a user of computers. Specifically, we will assume that students are comfortable with creating text files, sending and reading email, and using a web browser to explore content on the Internet. Students who do not have this experience are certainly welcome in the class however they should be aware that these topics are not going to be covered during lecture. The instructor can provide advice for gaining such experience.

2 Online Resources

This course will take advantage of the Internet and the departmental network in many ways.

2.1 COMP 150 Web Page:

<http://www.cs.luc.edu/~mhg/comp150>

With the exception of the first day's printed handout, most of the information for this course will be distributed only by means of the course web page. This web site will contain all assignments, a schedule of lectures, detailed lecture notes and links to many other sources of information.

The web page contains some information (e.g., solutions, submitted assignments, individual grades) which is more sensitive and therefore which will be available to students in the class only after they have identified themselves properly. To gain access to these parts of the web page, a student must first complete an online questionnaire, creating a unique identity and password.

2.2 Email with Instructor

Questions or comments of an individual nature should be emailed directly to the instructor. Topics suitable for email include questions about grades received, requests for an appointment, requests for help on an assignment.

2.3 Electronic Assignment Submission

All assignments for this course must be submitted electronically! The submission procedure will be done through the course web page and allows students to submit from any computer connected to the Internet. Each student in this class will be selecting a unique username/password combination solely for use in identifying the student when using the course web page. Details of the procedure are discussed at: (www.cs.luc.edu/~mhg/comp150/submit/).

3 Graded Work

3.1 Assignments (45%)

We expect there to be a total of 12 weekly assignments during the course, each of which involves some amount of work on a computer. We will ignore your lowest two of the twelve grades, and the remaining ten assignments will contribute to this portion of the grade. The late policy is discussed below.

Each assignment will contain one or more practice problems which are not to be turned in and which can be discussed freely between classmates. The problems which are to be submitted for a grade, however, must be done entirely individually. A more complete explanation of our policy towards Academic Honesty is given in Section 3.4. Most assignments will also offer a small extra credit challenge to those interested.

3.2 Exams (55%)

- **First Exam (15%)**, Thursday, 20 February 2003
- **Second Exam (15%)**, Tuesday, 1 April 2003
- **Final Exam (25%)**, Thursday, 1 May 2003, 2:30–4:30pm

3.3 Course Grades

Letter grades will be based on each students overall percentage of awarded points according to the following formula.

- Student percentage above 90% will result in a grade of A or better.
- Student percentage above 86% will result in a grade of B+ or better.
- Student percentage above 80% will result in a grade of B or better.
- Student percentage above 76% will result in a grade of C+ or better.
- Student percentage above 70% will result in a grade of C or better.
- Student percentage above 66% will result in a grade of D+ or better.
- Student percentage above 60% will result in a grade of D or better.
- Student percentage below 60% will result in a grade of F.

Any modification to this scale at the end of the year will be *in favor of the students*. That is we may later decide to award an A to a student who is slightly below the above cutoff, but we certainly will not take away an A from someone who is just above the cutoff.

3.4 Academic Honesty

Students are expected to have read the statement on academic integrity available on pages 12–13 of Loyola’s “Undergraduate Studies” catalog. In addition to this statement, we wish to emphasize issues most relevant to this course.

When it comes to learning and understanding the general material covered in class or the practice problems, you may certainly use other references and you may have discussions with other students in this class or other people from outside of this class.

However, work which is submitted for this course must be entirely your own. You are in no way to discuss such assignments, nor are you to use or search for direct or indirect assistance from any outside references. The only exception to the above rule is that you are free to have consultations with the instructor, teaching assistant, or members of the organized tutoring centers on campus. Even in these cases, if you receive significant help you should make sure to document both the source of the help as well as the extent.

Any violations of the general Loyola policy or the policies outlined in this handout will be dealt with severely. Penalties will apply as well to a student who is aiding another student. Any such violations will result in a minimum penalty of a zero on the given assignment which cannot be dropped, and severe or repeated violations will result in an immediate failing grade in the course. Furthermore all incidents will be reported in writing to both the department and the appropriate dean.

3.5 Late Policies

All exams must be taken promptly at the required time. Requests for rescheduling an exam will only be considered if the request is made prior to the start of the exam, or else in an “emergency” situation with appropriate documentation.

For assignments, we wish to allow students to continue to work comfortably beyond the official deadline when a little more time will result in more progress, while at the same time discourage students from falling several days behind pace and jeopardizing their success on future assignments. Our solution is the following exponentially decaying late formula (some have suggested that we should offer extra credit to anyone who fully understands this formula).

We will consider an assignment submission “complete” whenever any part of the assignment is last submitted or modified. Any assignment which is not complete promptly by its due date and time will be assessed a penalty based on the formula $S = R \times e^{-t/6}$, where S is the grade given, R is the grade the work would have gotten if turned in on time and t is the amount of time (in days or fractions thereof) the work was late.

Examples:

- work turned in 1 hour late will receive over 99% of original credit
- work turned in 6 hours late will receive 96% credit
- work turned in one full day late receives less than 85%
- work turned in four days late will receive 51%

The above policies will be waived only in an “emergency” situation with appropriate documentation.

4 Tutoring Resources at Loyola

The university supports an official Tutoring Center at the Lake Shore Campus, located in Damen Hall 149. Their phone extension is 8-3194.

The tutoring is available and free to all students, however you must make appointments in advance. Appointments could be made for one-on-one tutoring or, if there is interest, general help sessions could be scheduled between a tutor and a group of students.

	Mondays:	10-5
The general hours for the center are the following	Tues/Wed/Thur:	10-8
	Fridays:	10-1

however appointments for comp150 tutoring are only available during some of those times, due to the personal schedule of the tutor(s).

5 Computing at Loyola

Students may develop their assignments for this course on a computer in a lab run by the Computer Science Department, in a lab run by Information Services at Loyola, or on a computer outside of Loyola, so long as it can be connected to the Internet.

5.1 Departmental Network and Labs

An account has been created on our department’s computer network for each student in this class. A username and password can be found by visiting the website, (<http://www.cs.luc.edu/lab/htaccess/account.html>). Please note that this username/password is not the same as the one used for this course’s web site, and not the same as Loyola’s campus-wide computer account maintained by Information Services.

For those who do wish to use our department labs as a regular work place, this account allows use of machines in our department labs in rooms DH340, DH341 or DH342. With each account, a student is given a home directory (H:\MyHome) in which files can be stored throughout the semester. Information

on the lab policies, including a schedule of open hours, is available at (www.cs.luc.edu/technology.html).

Finally, each user can send and receive email from this account. As an example, a student with User ID “aturing” receives email sent to aturing@cs.luc.edu.

5.2 Computer Centers run by division of Information Services

Other students may prefer to use some of the more general Loyola labs maintained by Information Services. These labs are convenient due to their locations across all Loyola campuses, as well as availability at times when our department labs are either scheduled for a class or filled with other working students.

Most of the software available on our department network is also available on the IS network. One disadvantage of the campus-wide network is that students must save their files to a disk.

To facilitate CS students working in IS labs, we have worked with IS to allow students access to the CS department NT file system from any of the IS labs at Loyola. This allows you to work in an IS lab, while saving and loading files directly to your Computer Science home directory. (Note: the drive letters used will not be mapped to the same letters as on our department machines.) Instructions can be found at:

www.cs.luc.edu/lab/faq/atIT/itlabs.html