

# COMP 150 Course Calendar and Syllabus

Introduction to Computing, Spring 2018 at Loyola University Chicago

Quick Links to: [Sakai](#), [Trello](#), jump to the [Syllabus](#) section

All future topics are tentative. Anything in parenthesis is optional. Consult the [Loyola Academic Calendar](#) for relevant registration, add/drop, and withdrawal dates.

| Date    | Topic                                                                                                 | Readings                           | Assignments/Sakai Quizzes                                                                                                 |
|---------|-------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Jan 17  | <a href="#">Course Overview</a> , <a href="#">Pre Course Survey</a>                                   | <a href="#">Tutorial 1.1-1.2</a>   | Install Python (Anaconda Python 3+ is recommended),<br><a href="#">Download Example Code</a>                              |
| Jan 22  | <a href="#">Numbers</a> , <a href="#">Strings</a> , <a href="#">Variables</a> , <a href="#">Print</a> | <a href="#">Tutorial 1.3-1.10</a>  | <a href="#">Sakai Quiz 1</a>                                                                                              |
| Jan 24  | <a href="#">Functions</a> , <a href="#">Dictionaries</a>                                              | <a href="#">Tutorial 1.11-1.12</a> | <a href="#">Sakai Quiz 2</a><br>Assignment 1 (Job Ad) [ <a href="#">Trello</a> ]                                          |
| Jan 29  | <a href="#">Loops</a> , <a href="#">Floats</a>                                                        | <a href="#">Tutorial 1.13-1.15</a> | <a href="#">Sakai Quiz 3</a>                                                                                              |
| Jan 31  | <a href="#">Object Orientation</a> , <a href="#">String Indices and Slices</a>                        | <a href="#">Tutorial 2.1-2.3</a>   | <a href="#">Sakai Quiz 4</a> ,<br><a href="#">Assignment 2: language basics</a><br>(due Feb 14th along with assignment 3) |
| Feb 5   | <a href="#">Graphics</a>                                                                              | <a href="#">Tutorial 2.4</a>       | <a href="#">Sakai Quiz 5</a><br><a href="#">Assignment 3: Graphics</a>                                                    |
| Feb 7   | <a href="#">Animation</a> , <a href="#">Files</a>                                                     | <a href="#">Tutorial 2.5-2.6</a>   |                                                                                                                           |
| Feb 12  | <a href="#">If Statements</a>                                                                         | <a href="#">Tutorial 3.11-3.16</a> | <a href="#">Sakai Quiz 6</a><br><a href="#">Assignment 4: basic data structures</a>                                       |
| Feb 14  | <a href="#">Combined Boolean Expressions</a> ,<br><a href="#">Tuples</a>                              | <a href="#">Tutorial 3.17-3.2</a>  |                                                                                                                           |
| Feb 19  | <a href="#">While Loops</a>                                                                           | <a href="#">Tutorial 3.3-3.6</a>   | <a href="#">Sakai Quiz 7</a><br>Project Brainstorming paragraph<br>[ <a href="#">Trello</a> ]                             |
| Feb 21  | <a href="#">Sample Exam I, version 1</a><br><a href="#">Sample Exam I, version 2</a>                  |                                    |                                                                                                                           |
| Feb 26  | <b>Exam I</b>                                                                                         |                                    |                                                                                                                           |
| Feb 28  | Project selection, in class                                                                           |                                    | <a href="#">Project Proposal</a> (due Mar 14)                                                                             |
| Mar 5-9 | <b>NO CLASS - Spring Break</b>                                                                        |                                    |                                                                                                                           |
| Mar 12  | <a href="#">Computer Organization</a>                                                                 |                                    | <a href="#">Bonus Sakai Quiz 1</a>                                                                                        |

|        |                                                                                                                        |                                                              |                                                                                                                                                                                  |
|--------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mar 14 | <a href="#">Binary Arithmetic</a>                                                                                      | <a href="#">Class Notes Section 3</a>                        | <a href="#">Sakai Quiz 8</a>                                                                                                                                                     |
| Mar 19 | <a href="#">Boolean Algebra, Truth Table, and Circuits</a>                                                             |                                                              | <a href="#">Sakai Quiz 9</a>                                                                                                                                                     |
| Mar 21 | <a href="#">Adders, Multiplexers, and Latches</a>                                                                      | <a href="#">Class Notes Section 5</a>                        | <a href="#">Assignment 5: Digital logic 5</a>                                                                                                                                    |
| Mar 26 | <a href="#">PIP Assembler</a>                                                                                          | Discuss/assign<br>project oral updates<br>(2 pts, April 4th) | <a href="#">Sakai Quiz 10</a>                                                                                                                                                    |
| Mar 28 | Project work & Exam I handed back                                                                                      | <a href="#">Class Notes Section 4</a>                        |                                                                                                                                                                                  |
| Apr 2  | <b>No Class - Easter Break</b>                                                                                         |                                                              |                                                                                                                                                                                  |
| Apr 4  | Project Oral Update (2 pts)                                                                                            |                                                              | Project Presentation assignment<br>[ <a href="#">gDoc</a> , due Wed, Apr 18th<br>BEFORE class]<br><br>Project Report [ <a href="#">gDoc</a> , due Wed,<br>Apr 18th BEFORE class] |
| Apr 9  | <a href="#">Summary slides</a><br><br><a href="#">Sample Exam II,</a><br><a href="#">Sample Exam II with Solutions</a> |                                                              |                                                                                                                                                                                  |
| Apr 11 | <b>Exam II</b>                                                                                                         |                                                              |                                                                                                                                                                                  |
| Apr 16 | Project Presentations                                                                                                  |                                                              |                                                                                                                                                                                  |
| Apr 18 | Project Presentations,<br>Project Individual Assessment                                                                |                                                              |                                                                                                                                                                                  |
| Apr 23 | Special topic: <a href="#">Introduction to Machine Learning</a> (few points extra credit<br>available on final)        |                                                              | <a href="#">Bonus Sakai Quiz 2</a>                                                                                                                                               |
| Apr 25 | Final exam review: <a href="#">Sample Final Exam</a> , <a href="#">Sample Final Exam Solutions</a><br>Parting thoughts |                                                              |                                                                                                                                                                                  |
| Apr 30 | <b>Monday, 4:15pm - 6:15pm</b><br><b>Final Exam (2 hours)</b>                                                          |                                                              |                                                                                                                                                                                  |

# Syllabus for COMP 150: Intro to Computing

- Day/Time: Mondays and Wednesdays 4:15-5:30pm
- Location: Lake Shore Campus, Crown Center Room 105
- Instructor: Dr. Mark V. Albert (mva @ cs.luc.edu)
  - For help: Doyle Center room 309 (1052 W Loyola Ave)
  - by appointment at your convenience, thursday and friday preferred
- TA: Jesse Meza, jmeza @ luc.edu
  - (Added Jan 26) Office hours: Mondays 2-4PM IES Study Lounge
  - (Also available by appointment if necessary)
- Course material: No textbook. All material is free & online. See [Resources](#) for specifics.
- Website: <https://comp150.pacsites.org>

## Course Description

This course is designed to provide an introduction to the many components of the computer science discipline. The material provided in this course emphasizes the computer's role as a tool for describing, organizing, and manipulating information. Topics include basic programming in Python, understanding binary logic expressed in electronic circuitry, data analysis and machine learning, etc.

## Course Objectives

- To introduce the student to programming using Python:
  - Learn the fundamentals of conditional statements, loops, functions and data structures
  - Learn how to add graphical effects and animation to programs
- To study some of the basic ideas behind computing:
  - Learn how a computer processor is created using simple circuits and logic
  - Learn how the processor is controlled through low level languages
  - Learn about the transition from low level languages to high level programming languages
- To gain some knowledge in data science:
  - Learn about data analysis and data visualization
  - Learn about machine learning and artificial intelligence

**NOTE:** Microsoft Office programs like Word and Excel are NOT covered. Information Services has free Short Courses on such applications.

## Class Attendance and Activities

Class attendance is not required and there is no direct participation grading, but in the past there has been a strong correlation between engagement and accomplishment in the course - especially for those that are struggling with the material.

Class activities include presentations, in-class exercises and discussion. If you have a notebook computer, you are highly recommended to bring it to class, so you work on your hardware rather than a lab machine. If you do utilize the lab computers, please bring a flash drive so that work may be saved. It is particularly handy to do your work on your machine, while displaying course materials on the lab screen.

## Communication

### E-mail:

Email is the best way to reach me. I will make every effort to get back to you within 24 hours on weekdays and 48 hours on weekends. If you have a general question about the course, feel free to email me. If the answer is of use to others, I may answer to the class as a whole while keeping your name anonymous if reasonable. Do not wait until the last minute to ask questions about the homework. You will have plenty of time to do the homework and ask questions about the material. Manage your time accordingly.

Technology issues should go to Loyola's HelpDesk. Personal issues should, of course, come directly to me.

Course communication: this year we will be using a google group email list for group communications - set up by the instructor in the first week of class.

- **The group name will be: [comp150-spring2018@googlegroups.com](mailto:comp150-spring2018@googlegroups.com)**
- Feel free to use the google group to ask questions about the material others might find useful, ask about partners for problem sets or advertize group study times, or to make comments that the rest of the class might find useful.
- Sending messages: you will be originally signed up with your luc.edu address, which you will need to send from in order to mail to the list. If you would like another addressed signed up (if you expect to send to the list often) just let the instructor know.
- The google group is primarily for timely, supplementary communication; the course calendar will be the definitive source of requirements and course expectations.

### Etiquette:

Our goal is to create an atmosphere in which all students are able to engage with the course, subject matter, and their classmates. Questions and ideas are welcome for students, and no

question or comment should be considered stupid. Express yourself freely in this course, in e-mail, and on Sakai. However, please be respectful and polite to your fellow students. Disrespect of other students will not be tolerated.

## Assignments and projects

**Assignments** are generally due at the end of the day one week after they are assigned, unless otherwise specified. Unlike other courses, with most assignments **you are expected to post your solutions on the Trello board that is accessible to all other students**, and you are free to observe other student solutions. However, no automated copy and paste is allowed, and direct handwritten or hand-typed copying without understanding and evaluation are obviously discouraged. As observed below in class grade points, homeworks will have minimal impact on grades - they are for learning and self-evaluation rather than grading. That being said, everyone who posts a good-faith attempt on Trello for each assignment will receive one point per assignment.

**Final Project:** Your project is a chance to be creative and learn independently. Project proposals, oral updates, and final reports will be part of the process. You are required to work in groups. All people in the group will have to contribute a substantial amount of coding, which limits sizes to 3-4 people unless the project is large enough - ask for permission for larger groups. Groups will present their final projects in the final week of class - so plan on something you'll be proud of.

**Late policy:** Assignments and project work can be turned in after the due date, however this places an undue burden on the instructor and any TA, especially when this policy is abused. As a compromise, at the discretion of the instructor, there will generally be a reduction in points of 10% of the total points for every weekday an assignment is late.

## Quizzes and Exams

**Sakai quizzes:** These quizzes meant to focus students on the important aspects of the readings or lectures. **You will be allowed to take these quizzes online, as many times as you would like.** There will be no due dates for these quizzes (technically, before the final exam), but it is suggested that you finish them in the suggested period in preparation for discussions and exams.

**Exams:** Exams will cover material discussed in class, reading material, and assignments. Exam days are already posted and are considered fixed. Prior arrangements in all cases can be made without loss of points, but have to be discussed.

**Missed exams:** Exams cannot be missed without prior arrangements or later proof of extenuating circumstances.

## Grading

Grades are determined by a simple points system, with a total of **at least** 100 points given throughout the course, likely much more. The expected minimum distribution of points is given below. Note, due to the nature of the course, exams are the primary means of establishing your final grade, so please study appropriately prior to each exam.

All-but-the-final grade distribution: (mean: 70.9, std dev: 7.8, max: 83, min: 48.4)

- Assignments: 15 pts (5 pts + 10 bonus curve points)
- Sakai Quizzes: 10 pts (12 given)
- Final Project: 20 pts
  - Brainstorming: 1pt
  - Oral Updates: 2 pts (mean: 1.7, std dev: 0.7, max: 2, min: 0)
  - Project Proposal: 2 pts
  - Final Report: 5 pts (mean: 4.4, std dev: 0.7, max: 4.9, min: 2.7)
  - Presentation: 5 pts (mean: 4.6, std dev: 0.4, max: 4.9, min 3.7)
  - Project individual Evaluation: 5 pts
- Exams: 55 pts
  - Exam I: 15 pts (mean: 8.5, std dev: 3.6, max: 14.5, min: 3.6)
  - Exam II: 10 pts (mean: 7.7, std dev: 1.7, max: 10.2, min: 2.7)
  - Final Exam: 30 pts (mean: 26.5, std dev: 4.9, max: 33.3, min: 10.6)

**Grading Scale:** 90, 80, 70, 60 with a '+/-' if within 3 percent of the border. Points needed to get each grade: A=93.0, A-=90.0, B+=87.0, B=83.0, B-=80.0, C+=77.0, C=73.0, C-=70.0, D+=67.0, D=63.0, D-=60.0. Don't expect this scale to change. If class grades are low (I expect the vast majority of students will get A's and B's), extra quizzes, assignments, or exam bonuses will be given to add points.

**NOTE:** Use only the total points in the Sakai gradebook (not the percentages). *Grades are calculated as specified in this syllabus.*

**Academic Dishonesty:** You are free to discuss anything freely and openly that is not an exam, including looking at each other's code, but you are NOT allowed to copy and paste or any thoughtless equivalent. Cheating on assignments can result anywhere from a zero on the assignment to a zero for all assignments for the course depending on the severity. Students caught cheating on exams will receive an F for the course and the matter will be discussed with the appropriate dean.