

Saint Louis University - Computer Science Department - Fall 2022

CSCI-1080 Introduction to Computer Science: World Wide Web

## Basic Information

### Instructor

Flavio Esposito, Ph.D

ISE-234D – [flavio.esposito@slu.edu](mailto:flavio.esposito@slu.edu)

Phone: 314-977-2434

Instructor's Homepage: <http://www.cs.slu.edu/~esposito/>

Class Website: <http://www.cs.slu.edu/~esposito/teaching/1080/>

### Lectures and Labs

Tuesday and Thursday: 12:45 pm - 2:00 pm Room: Ritter Hall (RTH) 115

<http://www.slu.edu/campusmap/>

**In person only.** This means that the class is configured so that all students are welcome to attend in classroom every day; there will be no zoom support for those who opt not to attend in person.

### Office Hours

Wednesday 2:00pm - 3:00pm or by appointment on Zoom:

<https://slu.zoom.us/my/flavioesposito>

### Computer Science Tutors

Our department employs many junior/senior CS majors to help out in our department labs. Those students are also available to provide assistance with course materials at such times. Our department webpage maintains a current list of available times and locations <http://cs.slu.edu/computing-resources>. As stated in the section on Academic Integrity below, these tutors are an acceptable resource for help, yet you should still document both the source of the help as well as the extent, if significant. **These times and location are subject to change due to the Covid-19 emergency.**

### Required Resources

This class uses online resources, handouts and the following textbook:

“Six Degrees: The Science of a Connected Age” by Duncan Watts.

## Course Overview

This course will cover introductory notions behind the technology of the web, from the structure of the Internet (web science) to the design of web pages (web development). Students will learn principles of the web as a network, and practical basics for web builders. The web science component of the class introduces notions of the web as an example of a network and use the Mathematics and Computer Science tools of graph theory to better understand the web.

The web building component instead introduces some of the fundamental languages of (dynamic) web programming as well as other popular building tools, leading to each student creating his/her own web site over the term.

## Learning Objectives

1. Students will be able to use modeling and algorithmic techniques to analyze basic aspects of the web as a network.
2. Students will be able to apply basic graph theory notions that drive static and dynamic networks like the web.
3. Students will be able to recognize and apply basic web development instructions and control structures in HTML, CSS and JavaScript to generate dynamic web pages.
4. Students will be able to design, implement, test and evaluate web development projects that satisfy a set of requirements.

## Preliminary Lecture Outline (Web Science)

1. Online safety and Web basics
2. Introduction to Networks: “A collection of objects connected in some fashion.”
  - (a) Set theory (“collection of objects”)
  - (b) Graph theory (“connected in some fashion”)
3. Web structure:

- (a) Bow-Tie: the structure of the Web
  - (b) Centrality: the basis of Google and most search engines
  - (c) Clustering
4. Web dynamics:
- (a) The emergence of hubs and clusters in the ever-growing Web
  - (b) The diffusion of information via the Web (e.g., Twitter)
5. Web commerce and recommendation algorithms:
- (a) Collaborative filtering: Netflix, Amazon, etc.
  - (b) The Long Tail: niches and blockbusters
6. Web influence and group behavior:
- (a) PageRank: the algorithm inside Google
  - (b) Principles of search engine optimization

### **Preliminary Lecture Outline (Web Development)**

1. Beginner HTML
2. Beginner CSS
3. Web page design and layout with CSS
4. CSS templates and Browser debugging tools
5. Introduction to JavaScript
6. Advanced JavaScript: JQuery, Slideshows and Games
7. Content Management Systems
8. Project final presentations: **Attendance is mandatory**

## Class participation, attendance and make-ups

Class participation (in class, online, or offline) is **strongly** encouraged and could get you bonus points when specified by the instructor.

Attendance will not be taken except during the final project presentation and during tests; if you miss class, or rely only on class recordings, however, you could miss important material that most likely will impact your final grade.

There will be no make-ups for any missed assignments, projects, or exams. The final grade will be curved, but this is not meant to discourage collaboration. If you all do better, you will all get a better final grade!

## Grading Criteria

- **Homework and Labs:** 30% (after dropping lowest score)
- **Project:** 20%  
The project is a website built with the tools covered in class plus an essay.  
Project grading criteria is posted on the class website.
- **Tests:** 50% (dates will be posted on the class website.)

All exams prior to COVID-19 were closed books and closed notes, except for your own handwritten (single-page) 8.5"x11" cheat sheet (front and back). This year the exam format will be announced in class.

## **Letter Grade**

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 87% will result in a grade of A- or better.

Student percentage above 83% 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 77% will result in a grade of B- or better.

Student percentage above 73% 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 67% will result in a grade of C- 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.

## **Late Submission Policy**

Homework assignments submitted late will have a score reduced of 20% per day for the first 2 days after the deadline. No submissions will be accepted after the second day. Upon request to the Dean of Students (<http://www.slu.edu/dean-of-students-office>), students shall be given up to five (5) consecutive days (not including weekends or holidays) of excused absence for bereavement.

## **Technology in class**

**Cell phones** are allowed in vibration mode during class. If you have a personal emergency, feel free to step out quietly from the classroom and take the call. Cell phones are not allowed during exams. Recording audio or video (frames) during class is allowed but not recommended. Learning how to take notes effectively is useful: train for that.

**Laptops:** There should be a computer for each student during practical sessions but you may use your own. Laptops are not recommended but not forbidden during theory sessions.

## **Student Success Center**

In recognition that people learn in a variety of ways and that learning is influenced by multiple factors (e.g., prior experience, study skills, learning disability), resources to support student success are available on campus. The Student Success Center assists students with

academic-related services and is located in the Busch Student Center (Suite, 331). Students can visit <https://www.slu.edu/life-at-slu/student-success-center/> to learn more about tutoring services, university writing services, disability services, and academic coaching.

## **Disability Services**

Students with a documented disability who wish to request academic accommodations must contact Disability Services to discuss accommodation requests and eligibility requirements. Once successfully registered, the student also must notify the course instructor that they wish to access accommodations in the course.

Please contact Disability Services, located within the Student Success Center, at [Disability\\_services@slu.edu](mailto:Disability_services@slu.edu) or 314.977.3484 to schedule an appointment. Confidentiality will be observed in all inquiries. Once approved, information about the student's eligibility for academic accommodations will be shared with course instructors via email from Disability Services and viewed within Banner via the instructor's course roster.

Note: Students who do not have a documented disability but who think they may have one are encouraged to contact to Disability Services.

## **University Writing Services**

Students are encouraged to take advantage of University Writing Services in the Student Success Center; getting feedback benefits writers at all skill levels. Trained writing consultants can help with writing projects, multimedia projects, and oral presentations. University Writing Services offers one-on-one consultations that address everything from brainstorming and developing ideas to crafting strong sentences and documenting sources. For more information, visit <https://www.slu.edu/life-at-slu/student-success-center/> or call the Student Success Center at 314-977-3484.

## **Title IX**

Saint Louis University and its faculty are committed to supporting our students and seeking an environment that is free of bias, discrimination, and harassment. If you have encountered any form of sexual misconduct (e.g. sexual assault, sexual harassment, stalking, domestic or dating violence), we encourage you to report this to the University. If you speak with a

faculty member about an incident of misconduct, that faculty member must notify SLU's Title IX coordinator, Anna R. Kratky (DuBourg Hall, room 36; [akratky@slu.edu](mailto:akratky@slu.edu); 314-977-3886) and share the basic facts of your experience with her. The Title IX coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus.

If you wish to speak with a confidential source, you may contact the counselors at the University Counseling Center at 314-977-TALK. To view SLU's sexual misconduct policy and for resources, please visit the following web addresses: [www.slu.edu/here4you](http://www.slu.edu/here4you) and <https://www.slu.edu/general-counsel>.

### **Basic Needs Security**

Students in personal or academic distress and/or who may be specifically experiencing challenges such as securing food or difficulty navigating campus resources, and who believe this may affect their performance in the course, are encouraged to contact the Dean of Students Office ([deanofstudents@slu.edu](mailto:deanofstudents@slu.edu) or 314-977-9378) for support. Furthermore, please notify the instructor if you are comfortable in doing so, as this will enable them to assist you with finding the resources you may need.

### **Academic Integrity**

Academic integrity is honest, truthful and responsible conduct in all academic endeavors. The mission of Saint Louis University is "the pursuit of truth for the greater glory of God and for the service of humanity." Accordingly, all acts of falsehood demean and compromise the corporate endeavors of teaching, research, health care, and community service via which SLU embodies its mission. The University strives to prepare students for lives of personal and professional integrity, and therefore regards all breaches of academic integrity as matters of serious concern.

The governing University-level Academic Integrity Policy was adopted in Spring 2015, and can be accessed on the Provost's Office website at: [https://www.slu.edu/provost/policies/academic-and-course/policy\\_academic-integrity\\_6-26-2015.pdf](https://www.slu.edu/provost/policies/academic-and-course/policy_academic-integrity_6-26-2015.pdf).

Additionally, each SLU College, School, and Center has adopted its own academic integrity policies, available on their respective websites. All SLU students are expected to know and abide by these policies, which detail definitions of violations, processes for reporting

violations, sanctions, and appeals. Please direct questions about any facet of academic integrity to your faculty, the chair of the department of your academic program, or the Dean/Director of the College, School or Center in which your program is housed.

In addition to those general statements, we wish to discuss our policy in the context of this course. When it comes to learning and understanding the general course material, you may certainly use other reference materials and you may have discussions with other students in this class or other people from outside of this class. This openness pertains to material from the text, practice problems, general syntax and use of any language or other computing tools. However, when it comes to work that is submitted for this course, you are not to use or to search for any direct or indirect assistance from unauthorized sources, including but not limited to:

- other students in this class
- past students, whether from this school or other schools
- other acquaintances
- other texts or books
- online information other than that referenced by course materials

Acceptable sources of information include consultations with the instructor, teaching assistants, or members of organized tutoring centers on campus, as well as any materials explicitly authorized for a project description. 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. On certain assignment, we may explicitly allow students to work in pairs. In this case, conversations between partners is both permissible and required. Furthermore, both students are expected to contribute significantly to the development of the submitted work. It is unethical to allow a partner to “sign on” to a submission if that partner did not significantly contribute to the work. Any violations of these policies will be dealt with seriously. 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 that 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 the Department and/or the Dean, as per the College procedure.