Intermediate Design and Programming for the Web (Spring 2023)

Course Numbers: INFO2300, CS2300, NBA5301
Credits: 3, Letter Grade
Prerequisites: INFO1300/CS1300; a static website 100% designed and coded by yourself (required for Project 1)
Instructor: Dr. Kyle Harms (he/him); https://kharms.infosci.cornell.edu/

I want you to be successful and learn in this class. I've structured this class and its policies with these goals in mind. Things may be challenging at times, but please remember that you can do this, and that I'm here to support you through your learning journey.

Course Website: https://canvas.cornell.edu/courses/46896
Course Email: info2300@cornell.edu

Please send **all** communication to the course email. Please do not directly contact (i.e. email) any of the course staff, including the instructor and TAs. **We try to respond within 48 hours, during business hours (Mon-Fri, 9am-4pm).** Please be patient; we will respond to your email.

Lectures: Mondays, Wednesdays, 9:05am-9:55am, Uris Hall G01 (28 total)
Lab (Discussion) Sections: Fridays, 50 minutes (14 total). See the Class Roster for details.
Office Hours: Office Hour Calendar

Required Materials: Laptop for lectures and labs. Please email info2300@cornell.edu if this is an issue for you.
Required Textbooks: *None*

InfoSci Majors: If you already know this material, please **waive this course**.

CS Majors: This class is about *design* **and** *programming*; not just programming. **Design and user experience are *significant* components of this course.** This class assumes you have taken **only** INFO/CS 1300 and no other programming courses; this course is probably *not* appropriate for CS students with significant programming experience.

Table of Contents

1.1. Course Description

This course is designed to introduce students to the conceptual, design, and technical aspects of developing server-side interactive websites. Students will learn how to process HTTP requests, dynamically render HTML, populate and store web content in a relational database using SQL, and securely implement login/logout sessions through server-side scripting. Through a succession of projects, students learn and practice how to apply these principles to the creation of interactive and data-driven websites programmed in PHP and SQL.

Design, inclusivity, and usability issues are emphasized.

1.2. Course Objectives

By the end of the course, a student will be able to:

- Develop design and programming competency in "full-stack" server-side web development.
- Create and respond to HTTP requests between the client (browser) and web server.
- Dynamically render web content (HTML) server-side using a programming language (PHP).
- Populate and store web content in a relational database using SQL.
- Securely implement login/logout sessions.
- Critically evaluate a website's design using visual design and interaction design principles.
- Design inclusive, accessible, and usable website interactivity, including forms.
- Debug and troubleshoot server-side web programming bugs independently.

1.3. Course Structure & Assignments

This is a project-oriented class. There are **3 individual projects**, each with 2-3 milestones, and **14 lab homework assignments**. Every week you will be expected to complete a lab homework assignment and submit a project milestone.

The primary source of information in this class comes from **pre-class preparation** (videos, readings, activities, etc.), mini-**lectures** with **in-class activities**, and Friday **lab (discussion) sections**. Attending class regularly is important to your overall success in this class.

Please note that this course does not provide a *traditional* lecture experience. *Before* each class (lecture), you will watch a series of videos and complete a set of activities posted to Canvas (pre-class preparation; about 1 hour). During class (lecture; 50 minutes) we will practice applying the material you learned during pre-class preparation through a series of in-class activities and mini-lectures. During your Friday lab (discussion) section (50 minutes) you will continue to practice applying the material learned in class/lecture but with a focus on applying the material towards the current assigned project. Lab homeworks are designed to be completed during class, however on occasion you may need to complete it as homework. Outside of class, each week you will work on a project milestone demonstrating your mastery of the course material from the week *prior* (about 5 hours).

There is **no** final exam for this course. There are no other exams or prelims.

1.4. A Typical Week in this Course

Keeping up with the material in this course is essential to your success. This course uses a predictable weekly rhythm to help you keep up.

Day	Class	Deadlines	Assigned
Monday	**Lecture, 9:05am**	**Monday's Pre-Class Prep, 9:00am**	Wednesday's Pre-Class Prep, noon
Tuesday			
Wednesday	**Lecture, 9:05am**	**Wednesday's Pre-Class Prep, 9:00am** **Project Milestone, 11:59pm**	
Thursday			Project Milestone, noon
Friday	**Lab Section**		Lab Homework, 9:00am Monday's Pre-Class Prep, noon
Saturday			
Sunday		**Lab Homework, 11:59pm**	

2. Policies

2.1. Policy Summary

The course policies aren't meant to be confusing. However, I receive a lot of questions about them. I've added a lot of detail in the sections below at the request of students. However, I think this makes the policies a more difficult to understand.

The course policies can be *summarized* as the following:

Contacting Us:

- Please **email info2300@cornell.edu** to contact the instructor or the course staff.
- Please do not *directly* contact or email the instructor or course staff.

Inclusivity & Accommodations:

- **Everyone belongs in this class.** Please email info2300@cornell.edu if we have failed to live up to this goal. We will address it.
- **Please contact us if you need additional flexibility/accommodations.** The sooner, the better.
- **Accommodations must be requested in-advance;** accommodations are not applied retro-actively.

Class Participation:

- Historically, students that **regularly arrive to class on-time and participate in class**, perform significantly better and experience less difficulty completing projects and assignments.
- **Credit is provided for participating in the in-class activities** during lectures and lab sections.
- You may miss (or arrive late) to 4 classes (lectures or labs) without penalty to your grade.
- Please catch up with a peer if you miss class.
- Please do not record lecture or take photographs without the permission of the instructor. Doing so violates the privacy of the attendees.

Assignments & Late Work:

- To submit assignments **1) push your work to GitHub and 2) fill out the course submission form.**
- Most assignments permit you to submit them late using slip days. See each assignment for details.
- **You have a total 4 slip days to use for the entire semester.**
- If the slip days are not meeting your accommodation needs, please email info2300@cornell.edu to inquire about a deadline extension accommodation.

Getting Help:

- Learning to troubleshoot your own code is a critical skill you need to learn to be a successful web designer and programmer. **Please try and troubleshoot your own coding problems before seeking help.**
- **You are encouraged to collaborate/work with your peers in this class so long as you do your own work** (please don't copy code or share solutions.)
- **When getting help, please keep in mind that we prioritize *helping you learn***, not giving out answers or fixing your code for you.
- **The best place to get help with an assignment is from your peers and office hours.** Please make regular use the help resources in this class.
- The best place to get help with an idea or concept is posting a question to Ed Discussions. Please avoid using Ed Discussions for code troubleshooting.

Grades:

- Submit a grade clarification request if you don't understand your grade on an assignment. Please see the details below.
- Submit a regrade request if there is a mistake with your grade on an assignment. Please see the details below.
- For participation related grading issues, please email info2300@cornell.edu.
- **All assignments are graded once**; we are unable to accept resubmissions, redos, or do-overs.

Academic Integrity:

- **Everything you submit for credit must be 100% your own work.** The work must be produced specifically for the current assignment and specifically for this class.
- **You are encouraged to use reference documentation resources *as a reference*.**
- Using a resource as a *reference* means you **study the resource so that you understand it and can use the same ideas in your project/code *independently***.
- Copying code (including comments or following a tutorial) is prohibited.
- **Cite any work (text, images, videos, etc.) that is not your own.**

2.2. Inclusivity & Accommodations

We want you to feel like you belong in this class and are respected. Cornell University (as an institution) and I (as a human being and instructor of this course) are committed to full inclusion in education for all persons. If for any reason you feel that we have failed these goals, please either let me know or report it, and we will address the issue.

Services and reasonable accommodations are available to persons with temporary and permanent disabilities, to students with DACA or undocumented status, to students facing mental health or other personal challenges, and to students with other kinds of learning challenges. Please feel free to let me know if there are circumstances affecting your ability to participate in class. Some resources that might be of use include:

- Office of Student Disability Services: https://sds.cornell.edu
- Cornell Health CAPS (Counseling & Psychological Services): https://health.cornell.edu/services/counseling-psychiatry
- Undocumented/DACA Student support: https://dos.cornell.edu/undocumented-daca-support/undergraduate-admissions-financial-aid

2.2.1. Academic Accommodations

I want all students to have the opportunity to be successful in this course. Accommodations can help provide some flexibility and equitable classroom access.

Per university policy, this course provides the following accommodations:

- Disability Accommodations
- Religious-Observance Accommodations
- Title IX Accommodations
- Varsity Athlete Accommodations
- Medical Accommodations
- Military Service
- Other Accommodations

This course has built-in deadline (*slip days*) and participation flexibility (*excused absences*). **This flexibility is specifically intended to support *most* student accommodation needs** (e.g. medical issues, family emergencies, religious observance, athletic participation, etc.)

If you need additional accommodations beyond the already provided flexibility, please contact info2300@cornell.edu. **We will work with you to provide accommodations to help you succeed in this course.** Please contact us. The sooner, the better (per university policy, accommodations are not applied retro-actively.)

2.3. Class Participation (Attendance & Absences)

I care about your success in this course. The single most important thing you can do as a student to be successful in this class is to **come to class prepared** (complete the pre-class preparation), **arrive to class on time**, and **attend class regularly**.

Historically, students that complete the pre-class preparation and attend class regularly perform significantly better and experience less difficulty completing their projects and assignments compared to their peers that don't attend class or come to class unprepared.

Credit is provided for participating in the in-class activities during lectures and lab sections. Credit for in-class participation is a *proxy* for the learning that happens during class. Because arriving late to class disrupts the learning of other students, please arrive within 10 minutes of the start of class (lecture and lab sections) to receive your participation credit.

If this participation policy is not meeting your needs, please seek accommodations (see below).

Note: Late participation *may* receive partial credit, at the discretion of the instructor.

2.3.1. Excused Absences

I understand that sometimes you won't make it class or may arrive late to class, and that some flexibility is needed.

You may miss (or arrive late) to 4 classes (lectures or labs) without penalty to your grade. (15 weeks in a semester × 3 classes per week × 90% = ~4 missed classes)

These excused absences are specifically for **legitimate reasons for missing class**. Per university policy, an excused absence may be warranted by: disability, religious observance, Title IX, student athletics, medical problems, and military service.

If you need to miss more classes than this policy permits, please seek accommodations (see below).

How to use your excused absences:

- **Simply don't come to class** (or arrive late to class.) You don't need to do anything else.
- Your lowest 4 participation grades will be dropped at the end of the semester.
- **Please keep your personal information private.**
  - There is no need to share why you are missing class.
  - Please do not send documentation about your absence.

2.3.2. Catching-up if You Miss Class

If you miss class, the best way to catch-up is to connect with a peer from the course. Arrange a time to meet and go through the notes (please don't just copy them) and practice the in-class activities together.

This benefits the learning of both you and your peer.

I do not recommend relying solely on posted slides to catch-up for missed classes. Unfortunately, slides are not a substitute for the learning that occurs during class.

2.3.3. Laptop and Cellphone Usage, Recording During Class

I care about your learning and distractions get in the way of that goal. Students that take notes by hand learn better (i.e. retention and performance) compared to their peers that take notes on their laptops. **You are encouraged to take notes by hand.**

Please don't use your phone during class. Cellphones are distracting in the classroom and may inhibit learning.

Please do not record or take photos during class without the explicit permission of the instructor. Recording someone without their permission is an invasion of their privacy; please respect the privacy of your peers and the course staff.

2.4. Deadlines & Late Work (Slip Days & Deadline Extensions)

I want you to be successful in this class. Historically, students that submit their work on-time, tend to do better in this course.

Assignments must be *fully submitted (pushed to GitHub and submission form completed)* for credit. Your assignment's submission time is the date and time you complete the submission form.

2.4.1. Late Work

Try your best to submit assignments on time. But don't panic if you need to submit an assignment late; I provide some deadline flexibility for these situations.

You may submit an assignment late without penalty by using your *slip days*, if permitted by the assignment (see below).

Otherwise, **late assignments are graded at 70% credit.** If you submit *after* the *slip-day deadline* (deadline + permitted slip days) **or** you submit *after_* the *assignment's deadline*, but you're out of slip days, your assignment is considered *late* and will be graded at 70% credit.

All late work must be received by the last day of classes for the semester. If you wish to submit an assignment *late*, **you are required to email info2300@cornell.edu** to notify the course staff that we should grade your late submission. If you fail to notify us of your late submission, we won't know to grade your late work, and you will not receive late credit for it.

Note: Pre-class preparation and in-class participation are **not** assignments and are therefore not eligible for late submission.

2.4.2. Slip Days

If you need to submit an assignment a day or so late, slip days can provide that flexibility. A slip day allows you to submit an assignment 24 hours after the deadline and still receive credit without a late penalty.

You are provided with a total of *4 slip days* for the entire semester. You may use your slip days on any assignment provided that you have *available slip days* and the assignment write-up permits slip days. (Each assignment states how many slip days you may use.)

To use your slip days, simply submit your assignment late. There is no need to email us when submitting with your slip days.

Check Canvas to see how many of your slip days you have used *before* submitting an assignment late. If you submit an assignment late without any available slip days or the assignment does not permit slip days, your assignment will be graded as a late submission (see the late work policy).

2.4.3. Deadline Extensions

If you need a bit of extra time, please use your slip days. Slip days are specifically intended for **legitimate reasons** for needing an extension like disability, religious observance, Title IX, student athletics, medical problems, and military service accommodations.

If using your slip days for accommodations is not working for you, let us know by requesting a deadline extension *in-advance of the deadline*. We will work with you to develop reasonable accommodations that align with your individual situation.

To request a deadline extension:

1. **Commit and push the work you have completed up to this point on the assignment** (please do not complete the submission form).

2. **Email info2300@cornell.edu** well in-advance of the deadline.

   In your email please clearly state:

   1. The assignment (e.g. *p2m1*).
   2. What you have already completed on the assignment.
   3. What you have left to complete.
   4. Your proposed deadline extension (e.g. *Monday, February 8th at 11:59pm*.)

   Please do not reveal personal information in your request. We respect your privacy.

2.5. Getting Help

I want you to get the help you need to be successful in this course.

The students that do well in this course typically start assignments early and get help early.

When getting help, please keep in mind that we prioritize *helping you learn*, not giving out answers or fixing your code for you.

2.5.1. Student Collaboration

I want you to develop a peer support network in this class.

You are encouraged to work with and support other students in the class so long as you do your own work. You may help each other on your homework and projects. You may ask another student to review your design and critique it. However, please do your own work, and please don't copy code or share solutions. (Please see the "Copying Code" section below.)

2.5.2. Where to Get Help / Office Hours

How to get help on this assignment:

1. **Ask a peer in the course for help.**

   Working with your peers is one of the best ways to get help in this course. Helping a peer improves your learning and theirs!

2. **Attend TA Office Hours.**

   Office hours are the *best* way to seek help in this course. You are encouraged to make *regular* use of office hours and work with your peers during office hours.

   Current office hours are posted to the office hour schedule.

   Start assignments early and seek help early; office hours right before deadlines are often be packed.

3. Post a *public* question on **Ed Discussions** (link in Canvas course).

   Do you have a general question about the course material or an assignment? **The course Q&A forum is the best place to receive clarification on course content.**

   If you need help with an assignment/project, please seek help with a peer or visit office hours. We want to help you, but it's often difficult for us to effectively help you with your code in online forum.

TAs prioritize helping students in office hours first then answering questions on Ed. We try to respond to your questions within 48 hours (Monday-Friday, 9am-4pm).

4. **Attend the instructors' office hours.**

   The instructor's office hours are always open. Please feel free to stop by for anything. I am always happy to help you with any problem no matter how big or small.

   Please check the instructors' websites for current office hour times.

5. Please do not email info2300@cornell.edu, the instructors, or the TAs for help with an assignment/project. Please use the above methods.

2.6. Grades

Your grade is computed using the following weighted averages.

Component	Grading	Weight
Participation		
• *Pre-Class Preparation*	*Completion*	6%
• *Class Participation*	*Completion*	8%
Assignments		
• *Lab Homeworks (14)*	*Completion*	14%
• *Project 1*	*Correctness*	18%
• *Project 2*	*Correctness*	22%
• *Project 3*	*Correctness*	32%

I grade to a scale, not to a curve, and I do not round grades. Like your GPA, letter grades are assigned by the *integer-part* of your percentage; the *decimal-part* is not a factor. For example: 96.01, 96.5, and 96.99 are all A's. 97.0 is an A+.

Letter	Percent	Letter	Percent	Letter	Percent	Letter	Percent
A+	97-100%	B+	87-89%	C+	77-79%	D+	67-69%
A	93-96%	B	83-86%	C	73-76%	D	63-66%
A-	90-92%	B-	80-82%	C-	70-72%	D-	60-62%
						F	0-59%

2.6.1. Resubmissions, "Redos", or "Do-Overs"

Please understand that mistakes are natural part of the learning process. I've structured the course to help you learn from your mistakes without significantly impacting your grade:

- All lab homeworks are graded for completion (you will receive full credit, even if there are mistakes, so long as you make a good faith effort to complete the assignment.)
- We provide project feedback for each project milestone to help you fix any mistakes before we grade the final project submission for correctness.

Given that the course structure is designed to reduce the impact of mistakes on your grade, no resubmissions, redos, or do-overs are accepted. Please be aware that **we grade each submission *exactly* once.** I understand that this is frustrating to some, however please understand that we simply do not possess the grading resources to grade assignments more than once.

2.6.2. Grade Corrections (Regrades)

We want your grade to reflect what you've learned in this class.

- If you have a *question* about your grade, please submit a *grade clarification request*.
- If there was a *mistake* with your grade, please submit a *regrade request*.
- For all other grade inquiries (class participation, pre-class prep) please email info2300@cornell.edu.

2.6.3. Grade *Clarification* Requests (Grading Questions)

If you're unsure about why you got the grade you did, please submit a **grade clarification request**. We'll help you understand your grade.

Copy the template below into an email. Send that email to info2300@cornell.edu.

Subject:

> **(REQUEST) Grade Clarification**

Email Message *Template*:

> NetID: *TODO*
> Assignment: *TODO*
>
> Brief explanation of what you would like clarified about your grade (1-3 sentences):
> *Be concise and to the point. State what you would like clarified directly.*
> *(If you want points returned, submit a regrade request.)*
>
> *TODO*

2.6.4. *Regrade* Requests (Grading Mistakes)

If you believe that you received an incorrect grade, please submit a regrade request.

Regrade requests are intended for correcting grading mistakes, not for lobbying for points.

Follow these steps to submit a regrade request:

1. **Please wait 24 hours from when the assignment was returned to you.**

   Please do not contact us during these 24 hours.

2. **After 24 hours**, submit your regrade request.

   Your *entire* assignment will be regraded. It is *possible* (though unlikely) to receive a lower grade than the original one you were given.

   Copy the template below into an email. Send that email to info2300@cornell.edu.

   Subject:

   > **(REQUEST) Regrade**

   Email Message *Template*:

   > NetID: *TODO*
   > Assignment: *TODO*
   >
   > **Directly state the mistake(s)** in the grading of your assignment. Be **specific** *and* **specify the total points** that you believed should be returned for **each mistake**. (1-3 *brief and concise* bullets):
   >
   > *TODO*
   >
   > *(optional)* If necessary, **briefly** explain why your approach to this assignment is a **good choice** (1-3 *brief and concise* bullets):
   >
   > *TODO*

   Tips:

   - When writing, please be respectful, thoughtful, and professional.
   - **Be brief and concise.** Bullet points are encouraged. Please do not write a lengthy explanation.
   - Form and ground your argument based on **ideas and principles presented in this course**. This is the primary criteria we use to evaluate your regrade request.
   - **Assume that we made a mistake**; avoid accusing us being unfair or punishing you.

    - If you’re going to **claim that something is unfair**, frame your argument from the perspective of **all students** in the course.

3. **Please be patient.**

   It usually takes us several weeks to process a regrade request.

   Once we process it, we will reply to your regrade request email to notify you of the outcome.

2.6.5. Extra Credit

No extra credit is provided in this course.

2.7. Academic Integrity

Each student in this course is expected to abide by the Cornell University Code of Academic Integrity.

All work submitted must be 100% your own work. Unless stated otherwise in the assignment's requirements, your work must be 100% original and produced specifically for each assignment in this class.

The penalty for submitting work that is not your own is a 0 for the offending assignment or possibly more (i.e. failing the class) depending on the severity of the academic integrity violation.

This policy sounds scary. Please know that it's not intended to be scary. I really want you to learn and that means writing your own code. **If you write all your code using what you learned in class, then you don't need to worry about academic integrity in this class.** However, if you're using tutorials or copying someone else's code (including the instructor's examples), you're cheating. If you're unsure about this policy, please come talk to me. I'll help you understand the policy.

2.7.1. Referencing Outside Resources & Code

You are permitted and *encouraged* to seek out reference documentation or similar sources so long as you do your own work/coding and use the resource only as a reference.

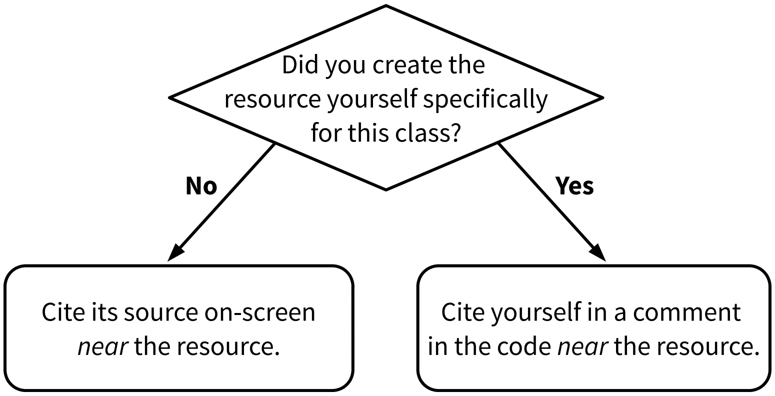
Using a resource as a *reference* means you study the resource so that you understand it and can use the same ideas in your project/code *independently*.

You may not use any resources that provide any form of a "solution," like tutorials.

2.7.2. Citing Sources

You are permitted and *encouraged* to seek out additional resources or sources of information for this class. However, you must cite *each* resource you use.

The citation policy:


Did you create the resource yourself specifically for this class?
No
Yes
Cite its source on-screen *near* the resource.
Cite yourself in a comment in the code *near* the resource.

Every resource (text, images, videos, etc.) must be cited according to this policy; each resource must be cited individually.

Citing External Resources: Please cite any resources you *use* or *reference* that **you did not create yourself *specifically* for this class** (external resource). The citation must be public (i.e. visible in the browser) and near the resource. **There is no required citation format.**

Example (There is no required citation format; this is just one possible way to cite.):

```html
<!-- Source: https://www.example.com/image.png -->
<img src="image.png" alt="Example Image"/>
Source: <cite><a href="https://www.example.com/image.png">Example-o-Rama</a>
</cite>
```

Citing Internal Resources: For resources that **you created *specifically* for this class**, you don't need to cite them publicly (i.e. visible in the browser), but **you do need to let us know you created it in a comment *near* the resource in the code** (so we know you didn't forget to cite them.)

Example (There is no required citation format; this is just one possible way to cite.):

```html
<!-- Source: (original work) Kyle Harms -->
<img src="image.png" alt="Example Image"/>
```

Please cite the original source who created the resource; please do not cite where you found the resource.

I know this policy seems vague. Please know that I want to provide you with as much design flexibility as possible. This policy is simply intended to require you to give credit where credit is due without limiting your design solutions. I firmly believe that providing credit/attribution is the *ethical* thing to do.

If you don't provide credit/attribution in your submission, you're basically claiming someone else's work as your own. That's not okay. *Each* missing citation will receive a point deduction.

2.7.3. Copying Code

I really care about your learning, and in order to learn web programming, you need to write your own code for your assignments. Please do not copy code.

If you didn't write the code yourself *specifically* for this class, and specifically for the current assignment, then it's considered a copy. Copying code (or comments) is prohibited in this class. It doesn't matter whether you copy and paste, type out an identical copy, or follow a tutorial. A copy is still a copy. Please do not copy code from the instructor's examples, the textbooks, tutorials, your peers, Chegg, Course Hero, etc.

You may think this means your code must look very different from the class examples. That's simply not the case. **It's okay to write code similar to how you learned in class. In fact, you are encouraged to do so.** Just make sure you write the code yourself.

Put another way, some of the code we use in this class will be nearly identical for everyone. This is often called *boilerplate code*. Boilerplate code are sections of code that are repeated in multiple places with little to no variation. Like the HTML template we use to start a new HTML file or how we load a CSS file in HTML. That's just how it's coded. If that's how it's supposed to be coded, then you don't need to worry about violating the Code of Academic Integrity so long as you type out the code yourself. Boilerplate code is essential for all programming, and it's okay if you use it.

Advice: While it may be tempting to copy the instructor's example into your assignment and then modify it, that's not writing your own code! **Modifying code and writing code from scratch are *distinctly* unique skills.** (Ask me about my research sometime!) You are being evaluated on your ability to write your own code (not how well you can copy code and modify it.)

Note: This course uses an automated process for checking for copied code. Your submissions are checked against the instructor's examples, code from the web, tutorials, and all past submissions from students that took this class previously. (All boilerplate code is ignored.) All submissions flagged for copying are then reviewed thoroughly by the instructor. An academic integrity hearing will be held for all students found submitting work that isn't 100% their own (boilerplate code excluded).

2.7.4. Selling Course Materials

All materials of this course are copyrighted, and it is prohibited to circulate or sell to commercial vendors the course materials, including syllabus, exams, lecture notes, images, presentations, and student papers. Such unauthorized behavior violates the Code of Academic Integrity. Video and/or audio recording of class lectures and review sessions without my permission in advance is prohibited. If you have an accommodation letter from Student Disability Services or if you are interested in recording for your personal use as a study aid, please make an appointment, to meet in office hours before you record anything.