

# Course Syllabus

## CS/EE 120A: Logic Design

### Course syllabus

**Course Description:** EE/CS120A introduces you to the exciting world of digital design. Digital circuits not only form the foundation of computers, but make possible many of the advances around us, like cell phones, video games, medical instruments, automotive systems, satellites, music equipment, military equipment, store automation. You name it — if it runs on electricity, it's probably got digital circuits (known as embedded systems) inside! 120A gets you up to speed on the basics; the follow-up course, 120B (*Introduction to Embedded Systems*), teaches you how to build a computer, and to build complete working embedded computing systems. Finally, you can put your knowledge of digital design to use in EE/CS 168 (*Introduction to VLSI Design*) where you learn the design process of creating Integrated Circuits from a digital design.

**Topics:** In this class, our tentative plan is to cover the following topics: Boolean algebra and circuit gates, K-map, Adders, Multipliers, Shifters, Floating-point numbers, Sequential network-finite state machines, High-level state machines, RTL (register-transfer level) design, and so on.

**Instructor:** Jia Chen

Email: [jiac@ucr.edu](mailto:jiac@ucr.edu) (<mailto:jiac@ucr.edu>)

Office: Bourns Hall A room 149

Website: <https://sites.google.com/view/jiacheng-research/home>

**Lecture:** Online; MWF 1:00 p.m. – 1:50 p.m.

Zoom link: <https://ucr.zoom.us/j/98073413466> (<https://ucr.zoom.us/j/98073413466>)

**Office Hours of instructor:** Online; W 3:00 – 5:00 p.m. or by appointment;

Zoom link: <https://ucr.zoom.us/j/97619027629> (<https://ucr.zoom.us/j/97619027629>)

**Quarter:** Fall 2021

### Teaching Assistants (TAs):

Hengyue Liu

Email: [hliu087@ucr.edu](mailto:hliu087@ucr.edu)

Lab session: MTu 8:00 a.m. – 10:50 a.m. @ WCH 125

Office Hours:

TBD

Email:

Lab session: WTh 8:00 a.m. – 10:50 a.m. @ WCH 125

Office Hours:

**Prerequisite:** CS 061 (*Machine Organization and Assembly Language Programming*) with a grade of “C-” or better.

**Discussion:** Piazza in Canvas

**Textbook:** CS 120A/EE 120A: Logic Design in Zybooks, a self-paced interactive web textbook. Registrants of CS/EE 120A can subscribe to Zybooks for FREE thanks to Prof. Frank Vahid from CS&E.

1. Create an account and sign in at <https://learn.zybooks.com> [\\_\(https://learn.zybooks.com\)](https://learn.zybooks.com)
2. Enter ZyBook code: **UCRCS120AEE120AChenFall2021**
3. Click “Subscribe”

Contact [support@zybooks.com](mailto:support@zybooks.com) [\\_\(mailto:support@zybooks.com\)](mailto:support@zybooks.com) for help or with questions.

### Grading Policy:

Homework: 20%

Labs: 30%

Midterm: 20%

Final exam: 30%

### Additional notes about grades in this course:

- Your score will be available on Canvas. Your final grade is the weighted average of these grades.
- We do our best to record grades accurately, but you should double-check.
- It is YOUR responsibility to make sure that upload is successful, and files show up properly on Canvas.
- Homework must be completed independently.
- Late submission: We do not accept any late submission, including assignments, exams, projects.
- Errors in grading: If you feel there has been an error in how an assignment or test was graded, you have one week from when the assignment is return to bring it to our attention. You must submit (via email to the instructor and the appropriate TAs) a written description of the problem.

- For exams: We do not regrade on a single problem. We will re-grade your whole test. The one week regrading window still applies.
- Final grades: The final grading will be based on relative ranking of students in the class instead of absolute scale of grades. If you have a problem with your final grade in the course, send me email and we can set up an appointment to discuss it.

### University policy: A Safe Return to Campus

- All members of the campus community – including students, staff, and faculty – must adhere to public health and safety guidelines upon their return to the UCR campus. Guidelines include but are not limited to [mandatory vaccinations](https://campusreturn.ucr.edu/vaccines), [\\_ \(https://campusreturn.ucr.edu/vaccines\)](https://campusreturn.ucr.edu/vaccines) [face coverings](https://insideucr.ucr.edu/announcements/2021/07/28/face-coverings-while-indoors) [\\_ \(https://insideucr.ucr.edu/announcements/2021/07/28/face-coverings-while-indoors\)](https://insideucr.ucr.edu/announcements/2021/07/28/face-coverings-while-indoors) while indoors, and completing the [daily wellness check](https://insideucr.ucr.edu/announcements/2021/09/08/employees-and-students-reminded-fill-out-daily-wellness-check) [\\_ \(https://insideucr.ucr.edu/announcements/2021/09/08/employees-and-students-reminded-fill-out-daily-wellness-check\)](https://insideucr.ucr.edu/announcements/2021/09/08/employees-and-students-reminded-fill-out-daily-wellness-check) when on campus owned or leased space.
- The circumstances around COVID-19 are rapidly changing, and campus guidelines will continue to evolve as guidance from local, state, and national health authorities are updated. Please continue to visit the [Campus Return](http://campusreturn.ucr.edu/) [\\_ \(http://campusreturn.ucr.edu/\)](http://campusreturn.ucr.edu/) site for updated information with specifics about fall quarter operations on campus.
- Please find more information about safety and well-being at <https://campusreturn.ucr.edu/> [\\_ \(https://campusreturn.ucr.edu/\)](https://campusreturn.ucr.edu/).

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# UCR ACADEMIC POLICIES AND STUDENT SUPPORT

## Library Online

Access digital materials and other resources at the [UCR Library](https://library.ucr.edu/) [\\_ \(https://library.ucr.edu/\)](https://library.ucr.edu/).

## ITS Help and Student Technology Support

ITS Student Technology Services supports 9 student computer labs, including 7 public labs and 2 nonpublic labs, with approximately 293 public lab hours per week (with reduced hours during breaks and summer) available for academic use by all UCR students.

Whether you need a machine to work on your paper, need to use specialized software required by your class, assistance with your R'Mail or iLearn accounts, getting on the network, or any other services used by UCR students, contact [BearHelp@ucr.edu \(mailto:Bearhelp@ucr.edu\)](mailto:BearHelp@ucr.edu).

## Academic Misconduct

In addition to the course conduct policies outlined by your professor in the Course Syllabus in the online classroom, please review the Graduate Student Handbook.

It is the responsibility of each student to be familiar with the definitions, policies, and procedures concerning academic misconduct. Please revisit our [Academic Integrity Policies and Procedures \(https://conduct.ucr.edu/policies/academic-integrity-policies-and-procedures\)](https://conduct.ucr.edu/policies/academic-integrity-policies-and-procedures) for more information. This site also defines misconduct, provides examples of prohibited conduct, and explains the sanctions available for those found guilty of misconduct.

## Plagiarism

Plagiarism is the most common form of academic misconduct at UCR. It is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit. This includes the copying of language, structure, or ideas of another and attributing (explicitly or implicitly) the work to one's own efforts. Plagiarism means using another's work without giving credit.

For more information about plagiarism, see [Academic Integrity Policies and Procedures \(https://conduct.ucr.edu/policies/academic-integrity-policies-and-procedures#plagiarism\)](https://conduct.ucr.edu/policies/academic-integrity-policies-and-procedures#plagiarism).

## Reasonable Accommodation for Disabilities

UCR is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations in this course should contact their professor as early in the semester as possible.

Students with disabilities must be registered with the Student Disability Resource Center prior to receiving accommodations in this course.

If you have a disability and you would like to make a request for reasonable accommodation, please see the Graduate Student Handbook or get in touch with the [Student Disability Resource Center. \(https://sdr.c.ucr.edu/\)](https://sdr.c.ucr.edu/)

## Adjustments for Pregnancy/Childbirth Related Issues

Should you need modifications or adjustments to your course requirements because of documented pregnancy-related or childbirth-related issues, please contact me as soon as possible to discuss your options. Generally, modifications will be made where medically necessary and similar in scope to

accommodations based on temporary disability. Learn more about the rights of pregnant and parenting students by consulting the [Office of Diversity, Equity, and Inclusion](https://diversity.ucr.edu/) [\(https://diversity.ucr.edu/\)](https://diversity.ucr.edu/).

## Title IX Resources

For any concerns regarding gender-based discrimination, sexual harassment, sexual misconduct, stalking, or intimate partner violence, the University offers a variety of resources, including advocates on-call 24/7, counseling services, mutual no contact orders, scheduling adjustments, and disciplinary sanctions against the perpetrator. Please see the Title IX website for more information. They can be reached at (951)827-7070. You can also [file a report](https://titleix.ucr.edu/reporting) [\\_\(https://titleix.ucr.edu/reporting\)\\_](https://titleix.ucr.edu/reporting).

## Student Needs

[Student Health Services](https://studenthealth.ucr.edu/) [\\_\(https://studenthealth.ucr.edu/\)\\_](https://studenthealth.ucr.edu/), [Counseling & Psychological Services \(CAPS\)](https://counseling.ucr.edu/) [\\_\(https://counseling.ucr.edu/\)\\_](https://counseling.ucr.edu/), Residential Life, Dining, and [R'Pantry](https://basicneeds.ucr.edu/rpantry) [\\_\(https://basicneeds.ucr.edu/rpantry\)\\_](https://basicneeds.ucr.edu/rpantry) are available to support students.

## Religious Holidays

It is the policy of the University to excuse absences of students that result from religious observances and to provide for the rescheduling of examinations and additional required classwork that may fall on religious holidays without penalty. It is the responsibility of the **student** to make alternate arrangements with the instructor **at least one week prior to the actual date of the religious holiday**.


## Copyright Policy






It is illegal to download, upload, reproduce, or distribute any copyrighted material, in any form and in any fashion, without permission from the copyright holder or his/her authorized agent. UCR expects all members of its community to comply fully with federal copyright laws.

## Registration and Withdrawal

If you choose to withdraw from this course, you must complete the appropriate University form and turn the form in before the deadline. Deadlines are shown in the [Academic Calendar](https://registrar.ucr.edu/calendar) [\\_\(https://registrar.ucr.edu/calendar\)\\_](https://registrar.ucr.edu/calendar), which is available from the Office of the Registrar.

## Course Summary:

Date	Details	Due
	 <a href="https://elearn.ucr.edu/courses/22733/assignments/139692">Academic Integrity Policy Agreement</a> <a href="https://elearn.ucr.edu/courses/22733/assignments/139692">_(https://elearn.ucr.edu/courses/22733/assignments/139692)_</a>	

Date	Details	Due
	 <u>ASSIGNMENT: &lt;name assignment here&gt;</u> ( <a href="https://elearn.ucr.edu/courses/22733/assignments/139728">https://elearn.ucr.edu/courses/22733/assignments/139728</a> )	
	 <u>DISCUSSION: &lt;topic here&gt;</u> ( <a href="https://elearn.ucr.edu/courses/22733/assignments/139700">https://elearn.ucr.edu/courses/22733/assignments/139700</a> )	
	 <u>DISCUSSION: Introductions</u> ( <a href="https://elearn.ucr.edu/courses/22733/assignments/139703">https://elearn.ucr.edu/courses/22733/assignments/139703</a> )	
	 <u>LIVE SESSION: &lt;title/week&gt;</u> ( <a href="https://elearn.ucr.edu/courses/22733/assignments/139729">https://elearn.ucr.edu/courses/22733/assignments/139729</a> )	
	 <u>Roll Call Attendance</u> ( <a href="https://elearn.ucr.edu/courses/22733/assignments/139731">https://elearn.ucr.edu/courses/22733/assignments/139731</a> )	