Course: ICS 331 - Logic Design & Microprocessors w/Lab

Subject:
Logic Design & Microprocessors covers:
Basic machine architecture, microprocessors, memory, circuit elements, logic circuit analysis and design, microcomputer system design, sensor and motor control.

Learning Objectives:
- Have sufficient knowledge of hardware so that they can take part in joint teams with electronic engineers in the design of programmable devices.
- Understanding how computer architecture relates to the following items: electronics, digital logic, data representation, von Neuman architecture, alternative non-von Neuman architectures, microoperations, instruction set architecture, assembly language, memory, data storage, and networking.
- Construct and debug combinational and sequential circuits.
- Construct and debug microcontroller circuits.

Prerequisites:
1. i>Clicker version 2 or higher
2. Recommended: ICS 312 Machine Language and Systems Programming
3. Access to PC type computer with a USB interface.
4. Ability to load MPLAB software on your own PC computer (about 150 Mbytes).

Textbook:

Lecture: (tentative)
Monday / Wednesday 3-415, POST 126
Lab: Monday / Wednesday 430-545, Holmes 451

Instructor: Curtis Ikehara
Office/Phone: POST 306B / 956-3581
Office hours: Monday 145-245 (first-come first-serve) or by appointment
Email: For questions about lectures: cikehara@hawaii.edu

Teaching Assistant: Kendyll Doi
Office Hours: by appointment or during lab hours
Email: For questions about assignments email: ics331@hawaii.edu

Course Website:
Laulima - Various course materials will be posted on the course web site for you to download and print at your option/convenience.
## Grading

<table>
<thead>
<tr>
<th></th>
<th>Percent</th>
<th>Number</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>Lab</td>
<td>25</td>
<td>10</td>
<td>A = 100 to 90 percent</td>
</tr>
<tr>
<td>In-Class Quiz</td>
<td>20</td>
<td>Numerous</td>
<td>B = 89.99 to 80 percent</td>
</tr>
<tr>
<td>Homework and Assignments</td>
<td>15</td>
<td>Numerous</td>
<td>C = 79.99 to 70 percent</td>
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<tr>
<td>Exam</td>
<td>40</td>
<td>4</td>
<td>D = 69.99 to 60</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
<td></td>
<td>F = less than 60</td>
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<tr>
<td>Extra Credit</td>
<td>5</td>
<td>5</td>
<td></td>
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</tbody>
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* A = 100 to 90 percent, B = 89.99 to 80 percent, C = 79.99 to 70 percent, D = 69.99 to 60, F = less than 60.
* No plus or minus grades
* Grades are never rounded. (For example 79.99 is a C)
* Extra credit is added to your total score only if it changes your grade

### Grading for Homework:
For Laulima homework at Laulima - Tasks, Tests and Surveys, you should be doing this on your own.
Laulima Homework is due at 2pm on the assigned day.
For other homework, it is OK to discuss homework with others, but the work you turn in should be your own work.

### Grading for Quiz:
Except for exam days, quizzes start at the beginning of every class using the “Clicker”. Other “Clicker” questions asked during class will count the same as a quiz question.

### Grading for ICS 331 Lab:
The grade for the lab will be determined by the number of lab assignments you complete. Lab assignments must be demonstrated in the lab to the TA and the TA determines the requirements for passing each lab.

### Turning in assignments:
**What to turn in:**
Program listing (source code) and program test runs that demonstrate your program’s output. **NOTE: Keep backup copies of your work.** These could be important if there are questions about the completion of your work.
**How to turn it in:**
* Usually you’ll be turning in your assignments to Laulima Assignments
  The file name should be:
  Assignment# ICS331 First_name Last_Name
  Example: 04 ICS331 Curtis Ikehara

* Hard copy --- may be turned in **before** it is due at the lecture or **time stamped** in the office and put into my mailbox in POST 316.

**Late Work:** There is no contingent for late work.
**Alternate Class Site:**
All lectures will be conducted and exams will be administered even in the event we are prevented from accessing our classroom. We will meet in front of POST.

**Academic Dishonesty:**
The each occurrence of academic dishonesty will result in a grade of 0 for the assignment or exam and a memo in your ICS department file describing the incident. This will be done for each student involved. Should there be more than one memo of this type in your file, the incident will be referred to the Dean of Students.

DISCIPLINARY SANCTIONS - [http://www.hawaii.edu/student/conduct/discipline.html](http://www.hawaii.edu/student/conduct/discipline.html)
Sanctions include: Warning, Probation, Rescission of Grades or Degree, Suspension & Expulsion.

Academic Dishonesty - [http://www.hawaii.edu/student/conduct/imper.html](http://www.hawaii.edu/student/conduct/imper.html)
Because UHM is an academic community with high professional standards, its teaching, research, and service purposes are seriously disrupted and subverted by academic dishonesty. Such dishonesty includes cheating and plagiarism as defined below. Ignorance of these definitions will not provide an excuse for acts of academic dishonesty.

Cheating includes but is not limited to giving or receiving unauthorized assistance during an examination; obtaining unauthorized information about an examination before it is given; submitting another's work as one's own; using prohibited sources of
information during an examination; fabricating or falsifying data in experiments and other research; altering the record of any grade; altering answers after an examination has been submitted; falsifying any official University record; or misrepresenting of facts in order to obtain exemptions from course requirements.

Plagiarism includes but is not limited to submitting, in fulfillment of an academic requirement, any work that has been copied in whole or in part from another individual's work without attributing that borrowed portion to the individual; neglecting to identify as a quotation another's idea and particular phrasing that was not assimilated into the student's language and style or paraphrasing a passage so that the reader is misled as to the source; submitting the same written or oral or artistic material in more than one course without obtaining authorization from the instructors involved; or "drylabbing," which includes obtaining and using experimental data and laboratory write-ups from other sections of a course or from previous terms.

If you have any questions, please contact the instructor and obtain authorizations in writing.

Special Needs:
If you need reasonable accommodations because of the impact of a disability, please:
1. contact the Kokua Program by telephone (V/T) at 956-7511 or 956-7612 or in person at the Queen Liliuokalani Center for Student Services building, room 013;
2. speak with me privately to discuss your specific needs. I will be happy to work with you and the KOKUA Program to meet your access needs related to your documented disability.

Information about the Kokua Program is available online at:
http://www.hawaii.edu/kokua/.