CTC 218 Digital Logic

California State University Dominguez Hills
Department of Computer Science and Technology

Course: CTC 218 Digital Logic Design
Time: **T/Th 16:00 – 17:15** (4:00-5:15)
Professor: **Malcolm McCullough**
Email: **mmccullough@csudh.edu**
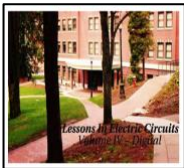**Office Hours:** **M-Th: 11:30-12:30**

Description:
Provides students with a basic understanding of digital device and circuit fundamentals. The students should be able to analyze and design both combinational and sequential circuits after completing this course.

Prerequisites:
Consent of Instructor.

Textbooks:

 [Required]:
Lessons in Electric Circuits Vol. IV - Digital
Free at: http://www.allaboutcircuits.com/textbook/digital/

[Required]: Computer Organization and Design Fundamentals, by David Tarnoff
Hardcopy (for purchase) and free ebook: http://www.lulu.com/content/138273

Materials (hardware): the following hardware is required
- Laptop/Desktop Computer: A laptop/desktop computer is required that meets or exceed the following specifications:
    o CPU: i5 6th generation (or equivalent)
    o RAM: 8 GB
    o HDD: 500 GB with 10 GB of free disk space (50 GB for students in my CSC-221 on MacOS or Linux)
    o Operating System: Windows 10 / MacOS 10.12 / Linux Kernel 4.4
    o User: standard user account with access to administrative or *root* privileges

- Webcam: A built-in or standalone webcam is required. Student's computer, together with a webcam, will be used with the Respondus Lockdown Brower to take all tests administered in this course.   Note, Respondus will not allow you to use your smartphone as a web cam.

Required Materials (software): we will use the following software during the semester
    o **Respondus Lockdown Browser**: A web browser that limits access to resources. Will be used for quizzes/exams. Click on the following link to download Respondus: http://www.respondus.com/lockdown/download.php?id=237953368

    o **Java RE**   (latest version) Java Run-time Environment

    o **Logism or Logisim Evolution:** Logisim is an educational tool for designing and simulating digital logic circuits. It was originally created by Dr. Carl Burchand actively developed until 2011.
    Logsim-Evolution is a fork of Logisim with a large number of changes and a relatively active community.

Course Goals:
- This course will be aimed towards introducing students to digital systems and circuit fundamentals.
- Teaching students to express combinational circuits with boolean expressions
- Teaching students to simplifying boolean expressions using boolean algebra and Karnaugh maps.
- Teaching students to analyze and design combinatorial circuits
- Teaching students to analyze and design sequential circuits
- Teaching students the concepts of latches, flip-flops,
- Teaching students state and state transitions for analysis and design of sequential circuits.

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Learning Objectives / Course Outcomes:
Upon completion of the course the students will be able to:
- use digital representation numeral values and arithmetic operations in different numerical bases (2, 4, 8, 10, 16).
- encode/decode binary code into hexadecimal, symbols, and numbers.
- demonstrate a thorough understanding of the binary digit, binary and hexadecimal numbering system
- evaluate and simplify logical functions using Boolean algebra.
- add/subtract binary values (subtracting using 2's complement)
- represent logical functions as Boolean expressions in standard and canonical forms.
- represent logical functions as digital circuit with AND, OR, NOT, XOR, NAND, NOR logic gates.
- simply 2-4 variable Boolean expressions using Karnaugh Maps
- analyze and design modular combinatorial logic circuits containing decoders, multiplexers, demultiplexers, and adders.
- understand how to develop smaller logical components into larger digital systems.
- work in a team-based setting on cooperative projects and/or presentations, and to use the Internet for research and other alternative learning opportunities, such as to identify websites and/or videos covering related topics addressed in this course.
- demonstrate critical thinking skills through solving problems/exercises and/or case studies relating to topics covered in this course.
- demonstrate communication (written/oral) skills through identification, comprehension and/or explanation of various conceptual topics covered in this course.

Standards of Student Conduct
All students must conform to the Standards of Student Conduct, which have been established by students and college staff and have been approved by the Board of Trustees. The Standards of Student Conduct are listed in the Academic Policies section of the university Catalog.

Academic Integrity
*Academic integrity is of central importance in this and every other course at CSUDH. You are obliged to consult the appropriate sections of the University Catalog and obey all rules and regulations imposed by the University relevant to its lawful missions, processes, and functions. **All work turned in by a student for a grade must be the students' own work**. Plagiarism and or other forms of cheating cannot be tolerated, and will be dealt with according to University policy. **The consequences for being caught plagiarizing or cheating range from a minimum of a zero grade for the work you plagiarized or cheated on, to receiving an F for the course grade.***

Behavioral Standards
Behavior (which includes course communication and dialog) that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. The instructor may require a student responsible for disruptive behavior to leave class pending discussion and resolution of the problem and may also report a disruptive student to the Student Affairs Office (WH A-410, 310-243-3784) for disciplinary action.

Netiquette
When communicating online, you should always:
- *Treat others with respect (in email, chat, or any other communication).*
- *Use clear and concise language.*
  - *Avoid slang terms such as "wassup?" and*
  - *Avoid texting abbreviations such as "u" instead of "you."*
- *Use standard fonts sizes (10 or 12 pt. font)*
- *Avoid using the caps lock feature IT IS INTERPRETTED AS YELLING.*
- *Limit and possibly avoid overuse of emoticons like :) or 😬.*
- *Be very cautious when using humor or sarcasm as tone is sometimes lost your message might be taken seriously or sound offensive.*
- *Be careful with personal information (both yours and other's). **Do not ever send confidential information.***

When you send an email to your instructor, teaching assistant, or classmates, you should:
- *Put course and section number (and possible a descriptive word or two) in the subject line.*
- *Be brief. Do not include irrelevant information.*
- *Avoid attachments unless you are sure your recipients can (and will) open them.*
- *Use plaint text, avoid HTML RTF etc.*
- *Sign your message with your name and return e-mail address.*
- *Be sure you REALLY want everyone to receive your response when you click, "reply all."*
- *Be sure that the message author intended for the information to be passed along before you click the "forward" button.*

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When posting on the Discussion Board in your online class, you should:
- *Make posts that are on topic and within the scope of the course material.*
- *Take your posts seriously and review and edit your posts before sending.*
- *Be as brief as possible while still making a thorough comment.*
- *Always give proper credit when referencing or quoting another source.*
- *Be sure to read all messages in a thread before replying.*
- *Don't repeat someone else's post without adding something of your own to it.*
- *Avoid short, generic replies such as, "I agree." You should include why you agree or add to the previous point.*
- *Always be respectful of others' opinions even when they differ from your own.*
- *When you disagree with someone, you should express your differing opinion in a respectful, non-critical way.*
- *Do not make personal or insulting remarks.*
- *Be open-minded.*

I understand and agree to abide by the Standards of Student Conduct, Academic Integrity and Behavioral Standards outlined here. _____ initials/date.

Course Policies:
- *Students are responsible for all presented material and content of assigned readings.*
- *Deliverables (assignments) may not be submitted past midnight of the due date.*
- *Deliverables (assignment) submitted after the due date will receive a 0.*
- *Any exceptional, non-academic, unforeseeable circumstances need to be discussed with the instructor as soon as they arise, AND if possible, prior to the due date of the deliverable or exam. Failure to notify the instructor of the issue(s), as soon as reasonable possible, will cause a forfeit of any special accomodations.*
- *The instructor reserves the right not to award credit for deliverables that are incomplete. Partial credit is awarded at the instructor's discretion, and only for work that merits such an award. Assignments that are incomplete or incongruous with the specifications may be returned to the student ungraded.*

Course Expectations:
Students are expected to study the chapter readings and complete assigned homework problems in-depth. It is extremely important not to get behind in our work. Course material is much more easily understood by reading, practicing, and reviewing the material.

The method of instruction shall be discussions of course materials and then when possible class activities. Students are encouraged to ask questions and to requests additional explanation when you are uncertain about concepts or other items discussed in this course.

Participation Policy:
Students are expected to participate fully. Participation will have an impact on your final course grade.

Substantive participation is defined as active involvement in-class and discussion board activities (questions/responses/statements that are rich, deep and probing). It may include piggybacks on someone else's comment, challenging assumptions or adding depth to the discussion. Sometimes it is a new idea or question. Substantive input adds depth to a discussion and carries its own weight. It demonstrates that students are using his/her critical thinking skills and values the advancement of knowledge for themselves and others.

A checklist of substantive participation may include activities that answer these types of questions:
• Does the response add a new insight to ideas already offered?
• Does it challenge previous ideas and add appropriate counter-thought?
• Does it give a sense of the "ah-ha" and encourage deeper thought?
• Does it take enough time to "wallow" in an idea and ask probing questions?
• Does it demonstrate that students have completed appropriate readings and/or research on topics addressed in this course?

Additionally, **students are responsible for knowing what goes on in class**, **which may include materials not covered in readings, additions or modifications to the syllabus, and announcements concerning assignments, exams or quizzes**. Students are encouraged to ask relevant questions, make pertinent comments, and present answers to questions on the class discussion board.

Most course announcements will be made during class, and/or through Blackboard's announcements (which are emailed to the students). Students are encouraged to use email to communicate with the instructor on individual matters related to the course.   It is the student's responsibility to ensure that the e-mail provided is correct, or that the e-mails are forward to an address that students check daily.

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Knowing Your Responsibilities
CSUDH provides the student with a wide variety of academic assistance and support, but it is up to the student to know when they need help and to seek it out. It is their responsibility to keep informed and to obey the rules, regulations and policies which control their academic standing and life as a CSUDH student. Meeting deadlines, completing prerequisites and satisfying the degree and certificates requirements, as found in the curriculum guides in this catalog, are all part of the duties as a student. Consult this catalog, the college and school announcements and the schedule of classes for the information needed. Watch for official announcements.

Course Content, Hours Coverage:
If a course has 3 hours of lecture per week, a student is expected to spend 9 hours on course activities (reading/studying)
Thus, for 3 unit course, such as CTC-218, CSC-221, or CSC-321, a student needs to be able to allocate 12 hours (3 just for lecture) a week for the course.
If a student's work or family schedule does not allow this the students expectation of passing the course should be greatly diminished.

I understand the terms of the course expectations and time requirements for this course. _____ initials/date.

Course Requirements
**Computer Information Literacy Expectations (*Computer Literacy Skill)*
It is expected that students will:
1. *have an understanding of basic computer hardware and software*
2. *have access to a personal computer (see specification below) and have administrative or root privileges;*
3. *have access to Internet;*
4. *be able to download and install software;*
5. *be familiar with (able to use) software developing tools (IDE)*
6. *be familiar with using email as a communication tool and check campus daily (always check before star of lecture);*
7. *be able to access course websites (Blackboard) and check the course site often;*
8. *be to use a word processing and other office like program;*

Minimum Computer Specifications:
Blackboard is a Learning Management System and will be used to deliver content, discussion, and administer exams. .
Students must have a computer system and Internet access that is compatible with Blackboard.
To ensure reasonable interactive sessions (e.g. Blackboard), all students must have, at a minimum, the following specifications on their personal computers:

System Requirements:
- Operating System: Windows 10, MacOS 10.13, Linux with 4.4 Kernel
- CPU: i5 6th generation (or equivalent). (mid-range performance 2015)
- RAM: 8 GB
- HDD: 500 GB with 10 GB of free disk space (50 GB for students in my CSC-221 on MacOS or Linux)
- User: nonprivileged user account with access to Administrative (or root) privileges
- Internet: DSL or Cable (minimum 10 Mbps)
- Audio: Sound card with speakers and microphone
- Video: **web-camera** (required)
- Supported Browsers
    - Safari / Chrome / Firefox / Explorer
    - Respondus Lockdown Browser: **Required** for quizzes/exams, (it limits what applications a user can access on local machine).
- Java RE Standard Edition 14 (latest version SE 14)

If a student does not have access to a system with the above requirements, they should contact
    - **CSUDH Technology Loaner Program** (https://techloaner.csudh.edu/)
      There are: Laptops, webcams, headset, and mobile Internet access (Mifi) devices

Software and Platforms Used
    - **Blackboard Learning Management System**
      You may access the course through Blackboard Learn https://toro.csudh.edu. You will have some of the flexibility of an online course to study and participate according to your work and personal schedule within each week of study. However, you must still complete assignments, quizzes, and exam by their due dates.

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- **Turnitin**

  This course will make use of the third-party tool called Turnitin. Turnitin will scan your document and compare it with websites, journals, periodicals, books and other submitted paper to improve writing and to minimize plagiarism. View this short video for a general overview of Turnitin. Turnitin also has a new (new to CSUDH) tool called GradeScope, which is used to grade homework, projects and exams and dynamically build a grading rubric.

- **LockDown Browser**

  Tests in this course will use the Respondus LockDown Browser. This is a specialized web browser which temporarily blocks access to other applications on your computer while you take a Lockdown Browser required test on Blackboard. Tests using LockDown Browser will include the text, "requires LockDown Browser."
  - Click here to download Respondus LockDown Browser for Mac and Windows. If you are on campus, LockDown Browser is available on computers found in the second and third floor of the library (south), as well as, on the accessibility computers found in the ToroLab.
  - View this short video for a general overview of LockDown Browser. Watch this video to view the install and LockDown Browser test taking process.
  - Note: The webcam feature in LockDown Browser, known as Respondus Monitor, will be used (it is required that you have a functioning webcam).

- **Zoom**

  This course will use Zoom web conferencing software for online meetings/office hours/online lectures. Go to the Zoom download page to download and install the Zoom Client for Meetings on your desktop or laptop. Zoom is also available for mobile and tablet devices on the App Store (iOS) and Google Play (Android). Visit the CSUDH Academic Technology Tutorials page for information on using Zoom.
  - View this short video for a general overview of Zoom.

I understand the course system and software and expectations requirements. _____ initials/date.

Technical Support and Campus Resources
- Blackboard - If students are having technical problems with the Blackboard, Learning Management System, he/she can contact free technical support in one of the following ways:
  - Blackboard Tutorials: http://www4.csudh.edu/it/services/blackboard/tutorials-students/index
  - Phone: 310-243-2500, option 2 (M-F 8:00 am – 5:00 pm) –Blackboard
  - Helpdesk Ticket: https://csudh.service-now.com (*Learning Management System support on Main Campus).*
  - Blackboard Tutorials
- Campus Service requests
  - Campus Resources & Services
- IT support and Knowledgebase
  - Campus IT Support
- Student disAbility Resource Center – helps students with disabilities have full access to the university's educational, cultural, social, and physical facilities and programs.
  - Disabled Student Services
- Learning / Tutoring / Testing Center. Has both one-on-one and group sessions
  - Learning Center (Tutoring Center)
- Help with using Zoom video Conferencing software
  - Zoom Tutorials

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- Computer Science/Technology Students Resource Links
  - LSAMP Computer Science Tutoring for CSC 121,CSC 123, and CSC 311.
    - TBA Online: (maybe 10:00 - 1:00pm T Th)
    - Zoom link: (maybe https://csudh.zoom.us/j/620347546)
  - Software
    - Microsoft Software - Microsoft Imagine Program
      - Microsft Azue DevTools
      - Quick Start LinkSign in with your campus school email address
      - Some of the Available Software
        - Microsoft Windows OS, Visual Studio, Project, Visio, MS SQL
    - Virtualization Software
      - VMWare Academic Program
        - Account are created for CSC student at beginning of each semester and Login/registration instructions are emailed to the students
        - If you didn't receive instructions email kleyba@csudh.edu

    - Office 365 for Students
      - Knowledge base article: https://csudh.service-now.com/it?id=kb_article&sys_id=94aad6abdb36df00bb059ebadb9619cd%20%20%20&catalog=it

    - Zoom conferencing software
      - Available to CSUDH faculty, staff, and students. Zoom is used for collaborative meetings and study sessions. It is available for Linux, macOS, Windows, iOS, and Android.
      - Tutorial and information can be found here: https://at.csudh.edu/docs/?docs=zoom

  - Technology Loaner Program
    - https://techloaner.csudh.edu/

Special Needs
Online courses are required to meet ADA accessibility guidelines. This means that all aspects of the online learning experience are accessible. Please let me know if you have adaptive software and hardware to assist you with taking this course or if you have any specific needs I should be aware of. The CSUDH Student Disability Resource Center (SdRC) is available to assist you during this course. The SdRC is available at (310) 243-3660 and can be reached by email at dss@csudh.edu.

Americans With Disabilities Act:
CSUDH adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with temporary and permanent disabilities. If you have a disability that may adversely affect your work in this class, you are encouraged to register with Student disAbility Resource Center (SdRC) office and talk to your instructors about how to get the most out of the course and how they can help. All disclosures of disabilities will be confidential. NOTE: no accommodation can be made until you register with the SdRC.. The SdRC is committed to providing all of the University educational, cultural, social and physical facilities and programs available to students with disabilities. The program serves as a centralized source of information for students with disabilities and those who work with them. By providing support services, SdRC assists students with disabilities in the enhancement of their academic, career and personal development. The SdRC Office is located in WH D-180 phone 310-243-3660 (voice) or 310-243-2028 (TDD). Please refer to the SdRC Handbook or website https://www.csudh.edu/sdrc/ for more information.

Due Dates and Make-up Work Policy:
The completion of homework assignments, course plan/reassessments, class blogs, research/reports, and video presentations are mandatory and crucial to mastery of the subject matter in this class. In this course, student study requirements encompass previewing and reviewing in-depth, chapters, as well as lecture PowerPoint presentations; homework assignments; team problems; videos; and on-line quizzes posted on Blackboard. The due date for homework assignments, course plan/reassessments, blogs, research/reports, and video presentations will be posted on Blackboard. **No credit will be given for untimely submission of homework assignments, project, report(s), blogs, etc.** NO EXCEPTIONS.

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Make-up examinations and quizzes:
Make-up examinations will be allowed only for extraordinary, unforeseen, and unavoidable circumstances, that are clearly beyond the control of the student, are supported by documented evidence, AND if the student has notified the instructor as soon as reasonably possible of the situation. The make-up examination grade will be substituted for the grade(s) of the missed exam(s). Students who do not take exam on the date announced, without making arrangements with the instructor according to the preceding rules, will receive a exam grade of zero. Make-up quizzes will NOT be given under any circumstances.

It is a student's responsibility to note the quiz and exam dates and let the instructor know, in a timely manner, if he/she foresees any conflicts. It is also a student's responsibility to ensure that he/she does not schedule any job interviews, or travel for official or personal reasons during quiz/exam days.

Exams:
There will be three exams, two midterm exams and a final exam.   The midterms will be given during the second meeting of the 5_{th} and 10_{th} week, the final exam will be given on the date posted in the final examination schedule printed in the campus Class Schedule.   The exams will be closed book/notes and include material from the book and lectures. Students are responsible for any materials that will be presented in the class or material from assigned as readings. Exams will be given via <u>Respondus Lockdown Browser</u>. This is a web browser take can limit what applications a user can access on local machine.

Final exams

CSC-221-80	Mon, Dec 7_{th}	10:00am – 12:00pm
CSC-321-01	Tue, Dec. 8_{th}	1:00pm – 3:00pm
CTC-218-01	**Tue, Dec. 8_{th}**	**4:00pm - 6:00pm**
CSC-221-01	Thr, Dec 10_{th}	2:30pm – 4:30pm
CSC-321-02	Thr, Dec. 10_{th}	5:30pm – 7:30pm

Quizzes:
There will be weekly quizzes/activities given during the semester (during second class meeting Wednesday or Thursday). They will be on the material most recent conveyed in lecture or assigned reading.   These quizzes/activities will be synchronous (can only be taken then) but out of the 150 point possible (10 point each) only the first 70 point count.

Examination Integrity Policy.
In this course, students will use an Online Examination Integrity Software called Respondus. This is an automated proctoring system that **records data about students'** testing environment, while they are taking an exam. This type of software is considered essential to ensure the integrity of the testing environment and assists the instructor with test taker identity validation.

PLEASE NOTE: This is a testing environment and all testing protocols must be adhered to, regardless of location. Students are advised as a test taker to take every precaution and setup the testing environment to maximize success. This may include removing any distractions and sounds as excessive, unnecessary movements may compromise the integrity of the testing environment and result in an unsatisfactory grade.

All students are advised to carefully read the Examination Integrity Policy located under the Respondus application prior to commencing each test. The policy discusses details regarding use of the software program and its requirements. The software requires the use of a **webcam** (internal or external), microphone (internal or external), and **identity verification** using a valid photo identification (ID), i.e. driver's license or State id card.

Assignments:
Assignments will be graded for neatness, completeness, and effort. Additional information for assignment will be provided under on Blackboard under the ASSIGNMENT link. Students are encouraged to complete assignments early so that they can ask thoughtful questions in this course. It is also the students' responsibility to go over solutions to problems/exercises, ask questions and get doubts clarified on an on-going basis. Students must do their own assignments. Copying someone else's work, even in small parts, is considered plagiarism and subject to severe penalties (Also refer to Academic Integrity). All assignment must include in the upper *right-hand* corner, student name, the course name, assignment number, and date.   No late assignments will be accepted.

Assignments - Homework:
There will be multiple assignments given during the semester. They will be announced on Blackboard.   These assignments must be submitted on or before the date due and via the Blackboard or Turnitin assignment.   Homework assignments may be hand-written if and only if the writing is legible and pictures of the hand written work is import in to a document (e.g. pdf/doc/etc).   The submitted assignments must be well organization, structured, and neat.

Assignments - Projects:
There will be multiple projects assigned for this course. They will be announced on blackboard. These assignments must be submitted on or before the date due and via the Blackboard or Turnitin assignment. The submissions for the projects will often include files from Logisim (.circ).   If the project submission includes many files you may archive (zip) the files into one zip file (see file naming specifications).

Assignments Submission Rules (Blackboard)
- Only submit assignments or project via a blackboard assignment link – (do not send via email)

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- Remarks, notes or comments should be put into the comment section of the Blackboard assignment link
- **Always** include the **file-ending** (.txt, .pdf, .doc, …);
  - A file named "homework02" is unacceptable; homework02.pdf is better (218hw02jdoe.pdf is even better)
- Only submit file types Backboard understands (see https://help.blackboard.com/Learn/Student/Assignments/Supported_File_Types)
  - Do not use Pages (common mac word processor)
  - Do not submit Pictures (see next item)
- Pictures, taking pictures of your handwritten homework is fine but
  put (import) them in a single document (e.g. pdf/doc/etc) and put them in order
  (noting worse, that a dozen raw picture submitted in random order)
- Do not use archives (put into a ZIP archive) unless asked to do so.
  - If asked to use zip, archive only files (i.e. source code)
  - If asked to use zip, use the ZIP compression format (yes, rar is better, but use zip)
  - Never ever zip up a zip archive (so annoying)
  - Never include subdirectories (proj02/src/trolling/the/instructor/cause/we/know/he/hates/this/)
- Source Code
  a. ALWAYS format your code correctly.   At minimum it must have
     i. a comment header at the top of each file with: name, course, project#, description),
     ii. must be correctly indented (warning I am **OCD about indentations**)
     iii. comment your code.
  b. ALWAYS be submitted plain ascii text
     if submitted in some other file format (e.g. doc/pdf/rtf) it will **not be graded**
  c. the file must have the correct file ending (.java, .c, .asm, etc)
  d. name the file as <course-number><proj-number><username>.<file-ending> (see filenames)
- Filenames
  - do not ever omit the file ending (.txt, .pdf, .doc, …)
  - do not use any file name enumeration (Windows for example like to enumerate file with same name (e.g. template (1).asm)
  - do not use
    - CAPITAL letters in the file name
    - SPACES in the file name
    - SPECIAL characters in the filename (e.g. '-','_', '(', etc)
  - use the following naming convention for file(s)
    - <courseNumber><projNumber><username>.<file-ending>
    - for example:
      - 218hw08mmccullough.pdf
      - 218proj3mmculloufh.circ
- Logisim (218)
  a. always submit the .circ file (it is XML) (and if asked a screen shot)

Grading Policy:

Grades: Shown as follows-

Pro-forma grading plan for each course activity	Points Per Activity	Number of Activities	Possible Points	Percentage Weights
Exams	100	3	300	45%
Quizzes _only first 70 point (out of 150 possible) count_	10	15	70	10%
Assignment: Homework	10	10-15	100-150	10%
Assignment: Projects	30	~5	~150	35%
				100%

(Note: if the initialed/dated course syllabus is not submitted by the due date (end of first week) a students may be dropped from this course.)

Quizzes/Exams: Tests will cover materials contained in the lecture notes, required readings, assignments. Tests will be administered via Blackboard/Respondus and will include: fill-in-the-blanks, true/false questions, multiple-choice questions, and short answer problems.

Extra Points: TBD

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Grading Scale:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
100-91	90	89	88-81	80	79	78-71	70	69	68-63	62	61-0

The grades for individual assignments, projects, quizzes, and the midterm exam may be posted on Blackboard (www.toro.csudh.edu), but the grading facilities of Blackboard's Grade Center will **not** be used. The column for 'Total Points' will not be relevant, correct, or even significantly correlated to your grade. Your grade is based on the above weighted categories, blackboard, by default, assumes all points are of equal value (equal weight).

$$your\_grade = (exam\_ave * 0.45) + (project\_ave * 0.35) + (hw\_ave * 0.1) + (quizzes\_ave * 0.1)$$

I will drop the lowest quiz and homework score before calculating average (this is an example of something Blackboard can not do)

I understand the terms of the grading policy and grading scales. _____. initials/date.

Withdrawal from Class Policy:
The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, *the instructor cannot drop or withdraw any student once enrolled in this course, after the instructor drop date as noted in the course catalog.* Students must complete the appropriate paperwork to ensure that he/she will not receive a final grade of Withdrawal Unauthorized "WU", which is equivalent to an "F" in this course.

Student - Instructor Communication
Some important email communication tips:
- I will generally respond to emails messages sent to me, Monday through Thursday, within 24 hours; messages sent Friday through Sunday except a significate delay the reply.
- **Ask the Instructor** – A discussion board forum. Please use this to post questions regarding coursework - and if you have happened to have the answer, feel free to provide it to your fellow students. While I will post responses as well, this forum is primarily for student-to-student communications.

In this course you will have some of the flexibility of a traditional online course (asynchronous) to study and participate according to your work and personal schedule within each week of study. However, you must still complete assignments, quizzes, and exam by their due dates (the synchronous part of the course). Online course create additional challenges. One of these is self discipline required to dedicate the time need for your studies. You must keep track of assignments, quizzes, projects, exams and the due dates, and schedule and manage your time effectively. Marking your study and your online discussion time in a personal calendar often helps.   As part of your personal schedule, make sure you check the course web site (Announcements) and your campus email at least several times a week (if not daily).

Important Days
September 11	Friday	Late Registration and Add/Drop via my.csudh.edu
September 4	Friday	Instructor Drop Deadline
September 7	Monday	Labor Day Holiday (No Classes, Campus Closed)
September 11	Friday	Last Day to Drop from FT to PT Status with Refund
September 18	Friday	Late Registration and Add/Drop via form
September 21	Monday	Credit/No Credit and Audit Grading Deadline
		Drop Without Record of Enrollment Deadline
November 6	Friday	Serious and Compelling Reason Required to Withdraw
October 23	Friday	Last Day Pro-rata Refund Tuition Fees
November 11	Wednesday	Veterans Day Holiday (No Classes, Campus Closed)
November 26	Thursday	Thanksgiving (No Classes, Campus Closed)
November 27-29	Friday-Sunday	Thanksgiving Break (No Classes, Campus Closed)
December 4	Friday	Serious Accident/Illness Required to Withdraw
		Last Day of lecture
December 5-11	Saturday-Friday	Final Examinations
December 15	Tuesday	Grades Due

For more information on the campus' Academic Calendar, visit the **CSUDH Academic Calendar page.**

CTC 218 Digital Logic

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Tentative Course Outline:

Week #	Topic	Reading Assignments	
		Computer Organization and Design Fundamentals	All About Circuits
1	Course Introduction & Requirements/ Overview of References, Blackboard / Introduction to Digital Logic	Chapter 1 & 2	Chapter 1
2	Boolean and Combinatorial Systems	Chapter 2 & 3	Chapter 2
3	Boolean and Combinatorial Systems	Chapter 2 & 3	Chapter 2
4	Analysis of Gate Networks	Chapter 4 & 5	Chapter 3
5	**Exam 1**	Chapter 1-5	Chapter 1-3
6	Two-Level Gate Networks:	Chapter 6 & 7	Chapter 7
7	Karnaugh maps	Chapter 7	Chapter 7
8	Karnaugh maps	Chapter 7	Chapter 7
9	Multi-Level Gate Networks: decoders/encoders/multiplexers	Chapter 8	Chapter 7
10	**Exam 2**	Chapter 8	Chapter 7
11	decoders/encoders/multiplexers	Chapter 6,7,8,&10	Chapter 9
12	Arithmetic Combinational Modules	Chapter 10	Chapter 9
13	Sequential Systems: Latches	Chapter 10 & 11	Chapter 9
14	Sequential Networks Flip-Flops	Chapter 10 & 11	Chapter 10
15	Combinational Modules	Chapter 10 & 11	Chapter 11
16	**Final Exam**	**Final Exam: 10 & 11**	**Final Exam: 9 - 11**

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