

COURSE TITLE: ENGR 272 Digital Logic Design Lab

CREDITS: 1

ROOM: IA-215

CRN: 43215

LECTURE/RECITATION: (ENGR 271)

LABS: Monday 12:00 to 1:50 pm

INSTRUCTOR: Craig Munsee

EMAIL: munseec@linnbenton.edu

OFFICE: IA-206

OFFICE HOURS (Additional time you can ask Questions):

- **Tuesday 3:00 pm to 3:50 pm in IA-206**
 - **Wednesday Noon - 12:50 pm in IA-206/Zoom (Zoom Meeting: Link in Moodle)**
 - **Thursday Noon - 12:50 pm (Zoom Meeting: Link in Moodle)**
 - **Friday Noon - 12:50 pm (Zoom Meeting: Link in Moodle)**
 - **Others by Appointment**
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Course Description:

- Laboratory to accompany ENGR 271 Digital Logic Design. Illustrates topics covered in the lectures of ENGR 271 using computer-aided design, verification tools, and prototyping hardware.

Prerequisite(s):

- Corequisite: Concurrent enrollment in ENGR 271.

Course Outcomes:

- Upon successful completion of this course, students will be able to:
 1. Analyze and design combinational systems using standard gates and minimization methods.
 2. Analyze and design combinational systems composed of standard combinational modules, such as multiplexers and decoders.
 3. Analyze and design simple synchronous sequential systems.
 4. Analyze and design sequential systems composed of standard sequential modules, such as counters and registers.
 5. Analyze and design simple systems composed of programmable logic devices.

Text Book:

- **Digital Design and Computer Architecture, ARM Edition.** Authors: Sarah Harris David Harris or Digital Design and Computer Architecture, 2nd Edition. Authors: Sarah Harris David Harris.
- **Digital Design and Computer Architecture: ARM Edition, is available for free to the students through the LBCC Library's Ebook Central database.** <http://bit.ly/digides>

Laboratory:

Each lab report will be graded on conformance with specific criteria, which will be reviewed during the first week's lab session. Lab reports are due for grading at the beginning of the next lab, with dates indicated in Moodle.

Links to the experimental procedures can be found on the course schedule, and should be reviewed carefully before coming to lab.

Grading:

Assignment:	Number:	Percentage:
Labs	5	100%

- 90-100% A, 80-89.9% B, 70-79.9% C, 60-69.9% D, < 59.9% F

Inservice/Holidays:

- School Inservice: LBCC will be closed (**Friday, Apr 1, 2022**)
- Memorial Day: LBCC will be closed (**Monday, May 30, 2022**)

Class Climate Survey:

- Student feedback is important to improve this course and to help the instructor know how to adjust teaching methods. Your feedback is taken seriously and does influence future versions of the course. The evaluations are anonymous, and links to the evaluations will be emailed to your student LBCC email account after the 5th week of the term. I encourage you take this opportunity to provide constructive feedback on the class. Thank you in advance for your input!
- **Extra Credit will be given for those who completing the Class Climate Survey.** Since the survey is anonymous you are asked to attach a screen shot showing that you completed the survey (Not a screen shot of your answers). A place to turn this in can be found on week 7 of Moodle.

Academic Integrity:

- You are expected to turn in your own work and not take credit for the work of others.
- For Homework and Lab assignments, you may work together and discuss the problems with your classmates, but you are expected to turn in your own work. If you turn in something that is not your work, it is considered cheating (This includes copying and sharing computer files).
- **Depending on the severity of the incident, those caught cheating and those who aid them will receive a score of zero for that assignment or fail the class and will be reported to Jill Childress, Ed. D. | Manager, Student Conduct and Retention.**

Computer & Software Requirements:

- You will need a computer capable of running the Quartus Prime Lite software, ModelSim and programming the DE10-Lite FPGA. There is only a Windows and Linux version available for Quartus Prime Lite.
 - Quartus Prime Lite
 - <https://fpgasoftware.intel.com/?edition=lite>
- To use a Mac computer, a windows environment would need to be installed on the computer to run the software (Oracle's VirtualBox).
 - <https://www.virtualbox.org/>
- You should install these programs the first week to determine if your computer can run the programs correctly.
- If you are considering purchasing a new computer, I would recommend a Windows-based Laptop with an Intel i7 processor, 16 GB of RAM, and at least a 500 GB hard drive. MacOS computers are good computers too but are limited when it comes to compatibility for Engineering software.

College Policies

COVID-19 CLASSROOM REQUIREMENTS FOR ALL STUDENTS AND FACULTY

Linn-Benton Community College has established rules and policies to make the return to the classroom as safe as possible. It is required for everyone to follow all of the campus rules and policies. To participate in this class, LBCC requires all students to comply with the following:

<https://www.linnbenton.edu/about-lbcc/college-services/safety/covid19/index.php>

WHERE TO REPORT A POSITIVE CASE OF COVID AND HOW TO KNOW IF YOU NEED TO QUARANTINE

In the event of a positive diagnosis of coronavirus, we appreciate your support in reporting it to our Office of Finance and Operations by contacting floms@linnbenton.edu. College administration will then work with local health authorities to begin contact tracing, and others who may have been exposed will be notified. The identity of the individual or individuals infected will be kept confidential, but you will be informed if a quarantine is necessary. If you are not informed about a close contact, you do not need to quarantine.

Drop/Withdraw Policy:

If you are withdrawing from the class, you must file a Schedule Change Form with Registration or use WebRunner. If you formally drop the class **before Monday of the second week of the term**, you will receive a tuition refund. If you withdraw after the Monday of the second week of instruction through the seventh week a ‘W’ will show up on your transcript. **No withdrawals are allowed after the end of the seventh week**. An instructor may not assign a “W” grade.

If you received financial aid or veteran’s benefits, PLEASE talk with associates at the appropriate office to determine what effects on eligibility dropping a course will have. Don’t jeopardize your eligibility!! You can contact the Financial Aid Office by calling (541) 917-4850 or by visiting the Financial Aid Office in Takena Hall.

If you stop attending the course without formally withdrawing you will continue to accumulate grades (zeroes for all assignments not turned in) and will receive the grade assigned by the instructor. You

will also be held accountable for all charges on your account.

LBCC Comprehensive Statement of Nondiscrimination:

Linn-Benton Community College [does not discriminate](#) based on race, color, religion, ethnicity, use of native language, national origin, sex, sexual orientation, gender, gender identity, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws in its programs or activities. For further information see [Board Policy 1015](#) and [Administrative Rule 1015-01](#). The following staff members have been designated to handle inquiries regarding the nondiscrimination policies:

For concerns or inquiries regarding disability accessibility and accommodations:

Contact: Carol Raymundo, Director of Center for Accessibility Resources
RCH-101, Albany Campus, Albany, OR 97321
(541) 917-4789
raymundo@linnbenton.edu

For concerns or complaints about the College or an LBCC staff member:

Contact: Scott Rolen, Director of Human Resource Development and Support and Title IX Coordinator
CC-108, Albany Campus, Albany, OR 97321
(541) 917-4425
rolens@linnbenton.edu

For concerns or complaints about a student:

Contact: Jill Childress, Manager for Student Conduct and Retention and Title IX Coordinator
WH-215, Albany Campus, Albany, OR 97321
(541) 917-4806
childrj@linnbenton.edu

Request for Special Needs or Accommodations:

Direct questions about or requests for accommodations to the Center for Accessibility Resources, 541-917-4789 or cfar@linnbenton.edu at least three business days in advance for special events and as soon as possible for classroom or other emerging requests. LBCC will make every effort to honor requests. LBCC is an equal opportunity educator and employer.

Student Resources:

LBCC has many resources to help our students be successful and overcome difficulties so that you can focus on learning. If you have a need, please contact your advisor for assistance and they can help direct you to the services you need. A list of some of these resources can be found in Aviso or the link below. <https://linnbenton.avisoapp.com/aviso/app/resourceGuide/index>

Changes to the Syllabus

I reserve the right to change the contents of this syllabus due to unforeseen circumstances. You will be given notice of relevant changes in class, or through LBCC e-mail.