

Clackamas Community College
Online Course/Outline Submission System

Section #1 General Course Information**Department:**Engineering**Submitter**

First Name: Eric
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Course Prefix and Number:ENGR - 271**# Credits:**4**Contact hours**

Lecture (# of hours): 33
Lec/lab (# of hours):
Lab (# of hours): 33
Total course hours: 66

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

Course Title:Digital Systems**Course Description:**

The second course in digital design covers synchronous state machine circuits, microprocessor architecture, shift register devices, and the design of memory systems.

Type of Course:Lower Division Collegiate**Reason for the new course:**

This is a new transfer course for electrical and computer engineering majors.

Is this class challengeable?**No**

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

Does this course map to any general education outcome(s)?

No

Is this course part of an AAS or related certificate of completion?

No

Are there prerequisites to this course?

Yes

Pre-reqs:ENGR-171

Have you consulted with the appropriate chair if the pre-req is in another program?

No

Are there corequisites to this course?

No

Are there any requirements or recommendations for students taken this course?

No

Are there similar courses existing in other programs or disciplines at CCC?

Yes

Have you talked with the appropriate chair?

Yes (A 'Yes' certifies you have talked with the chair and have received approval.)*

Will this class use library resources?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit:No

When do you plan to offer this course?

✓ Spring

Is this course equivalent to another?

If yes, they must have the same description and outcomes.

No

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

Upon successful completion of this course, students should be able to:

1. design synchronous state machines through the application of Karnaugh maps,
2. design simple sequential logic circuits,
3. identify and demonstrate the ways in which digital system design is altered based on testability concepts,
4. accurately ascertain function, and input and output voltage levels and timing information from data sheets;
5. employ Verilog HDL to specify synchronous state machines,
6. select appropriate memory devices for large memory systems based on design needs.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Latches and flip flops.
2. Shift Register.
3. Synchronous state machine circuits.
4. Memory systems design and architecture.
5. Testability design.
6. Transmission line effects in high speed digital systems .

Does the content of this class relate to job skills in any of the following areas:

- | | |
|--------------------------------------|-----------|
| 1. Increased energy efficiency | No |
| 2. Produce renewable energy | No |
| 3. Prevent environmental degradation | No |

4. Clean up natural environment **No**
5. Supports green services **No**

Percent of course:0%

Section #2 Course Transferability

Concern over students taking many courses that do not have a high transfer value has led to increasing attention to the transferability of LDC courses. The state currently requires us to certify that at least one OUS school will accept a new LDC course in transfer. Faculty should communicate with colleagues at one or more OUS schools to ascertain how the course will transfer by answering these questions.

1. Is there an equivalent lower division course at the University?
2. Will a department accept the course for its major or minor requirements?
3. Will the course be accepted as part of the University's distribution requirements?

If a course transfers as an elective only, it may still be accepted or approved as an LDC course, depending on the nature of the course, though it will likely not be eligible for Gen Ed status.

Which OUS schools will the course transfer to? (Check all that apply)

- PSU (Portland State University)**
 OIT (Oregon Institute of Technology)

Identify comparable course(s) at OUS school(s)

PSU - ECE 271/271L
OIT - EE 133

How does it transfer? (Check all that apply)

- required or support for major**

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First term to be offered:

Specify term: Spring 2015
