

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: Manufacturing

Submitter

First Name: **Jim**

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Email: **jims**

Course Prefix and Number: EET - 230

Credits: 3

Contact hours

Lecture (# of hours): 33

Lec/lab (# of hours):

Lab (# of hours):

Total course hours: 33

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: Laser and Fiber Optics

Course Description:

This course focuses on basic theory and practice of optical communication, lasers and fiber optics. Students study optical signals, optical fibers, optical components, testing and instrumentation, optical networks, etc. as well as general characteristics of LEDs, lasers, laser excitation, semiconductor lasers, etc. related to optical communication.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

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?

Yes

Name of degree(s) and/or certificate(s): Electronics Engineering Technology programs

Are there prerequisites to this course?

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?

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

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: Yes

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. demonstrate a conceptual understanding of fiber optic communication and fiber illumination,
2. demonstrate a conceptual understanding of lasers, laser excitation, and laser sources;
3. describe optical modes, polarization, reflection, and refractive index;
4. evaluate basic specifications for optical: fiber, components, test instrumentation, and networks;
5. demonstrate a conceptual understanding of time and wavelength multiplexing of signals.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Introduction to fiber optics, components, and communication.
2. Optical fiber, properties, materials, manufacture, and cabling.
3. Light sources, transmitters and receivers.
4. Repeaters, regenerators, and optical amplifiers.
5. Connectors, splices and couplers.
6. Optical switches, modulators, and other active components.
7. Troubleshooting and test equipment.
8. System and optical networking concepts.
9. Fiber systems standards and networks.

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%

First term to be offered:

Next available term after approval

:

