Curriculum Committee Agenda

November 5, 2021 (8-9:30am)

	Presenter	Action
1. Welcome and Introductions	**Chair**	
2. Approval of Minutes	**Chair**	Approval
3. Consent Agenda a. Course Number Changes b. Course Title Change c. Reviewed Outlines for Approval	**Chair**	Approval
4. Course and Program Approvals a. **AS Engineering OSU Amendments (10)** b. **AS Biology OSU Amendment** c. **Criminal Justice** a. Course Inactivation: CJA-243 b. Amendments: Criminal Justice AAS & Criminal Justice AAS, Corrections Option	**Megan Feagles (for Eric Lee)** **Megan Feagles (for SCNC dept)** **Sharron Furno**	Approval/22.SU Approval/22.SU Approval/22.SU
5. Old Business a.		
6. New Business a.		
7. Closing Comments a.		

Curriculum Committee Minutes

October 15, 2021 (8-9:30am)

Present: ASG (Chris Sanchez), Dustin Bare, Nora Brodnicki, George Burgess, Rick Carino, Elizabeth Carney, Amanda Coffey, Jeff Ennenga, Megan Feagles (Recorder), Eden Francis, Sharron Furno, Sue Goff, Dawn Hendricks, Shalee Hodgson, Kerrie Hughes (Alternate Chair), Jason Kovac, Kara Leonard, Alice Lewis, Mike Mattson, Patricia McFarland, Tracy Nelson, Scot Pruyn (Chair), Lisa Reynolds, Cynthia Risan, Terrie Sanne, Charles Siegfried, Tara Sprehe, Sarah Steidl, Dru Urbassik, Andrea Vergun, Helen Wand, Jim Wentworth-Plato
Guests: Cole Chatterton, Bev Forney, John Phelps, MaryJean Williams
Absent: David Plotkin, Casey Sims

1. **Welcome & Introductions**

2. **Approval of Minutes**
   a. Approval of the October 1, 2021 minutes
   Motion to approve, approved

3. **Consent Agenda**
   a. Course Number Changes
   b. Course Title Change
   c. Reviewed Outlines for Approval
   Motion to approve, approved

4. **Course and Program Approvals**
   a. **Course Inactivations**
      i. Megan Feagles presented for Shelly Tracy
      ii. UG-113, 123, 221
         1. The rest of the UG courses are planned for inactivation in 2022 so the department is asking to inactivate these as well. The program they were part of was suspended years ago.

   Motion to approve, approved
   b. **New Courses**
      i. BA-230
         1. Bev Forney presented
         2. From course outline: this key marketing course is the first of its kind at CCC and in line with this same course offering at community colleges within the state and is in fact the focus of state university degrees in Business Marketing.

   Motion to approve, approved
      ii. CJA-216
         1. Sharron Furno presented
         2. From course outline: Given the current climate in law enforcement, this course is necessary to address personal biases and how they impact duties as a police officer.
         3. Going to eventually replace Drugs, Crime, and the Law and be added to programs.
         4. Elizabeth Carney recommended against using the term “demonstrate understanding” in the Student Learning Outcomes. “define” might be a better, more assessable option.
         5. Elizabeth will work with Sharron to adjust the SLOs.

   Motion to approve, approved
   c. **Program Learning Outcomes**
      i. Welding Technology AAS
         1. John Phelps presented
         2. Result of working with Elizabeth and Assessment Team over the past few years.
   d. **Program Amendments**
      i. AAS Early Childhood Education & Family Studies
         1. Dawn Hendricks presented
         2. Removing ECE-144 and ED-235 from the electives since they are scheduled for inactivation in 2022.

   Motion to approve, approved
      ii. AAS DMC
         1. Nora Brodnicki presented

2. Adding EFA courses to the list of acceptable elective courses.

Motion to approve, approved

5. Old Business

a. Review Teams/Sub-Committees Process Sharing
   i. AFAC
      1. Tracy Nelson presented
      2. Team looks over outlines individually and sends feedback to Tracy. Tracy reaches out to course submitter with any feedback.
   ii. Arts/Sciences
      1. Lisa Reynolds presented
      2. Not yet met as a group, but individuals are working on reviewing outlines.
      3. Lisa assigns a lead reviewer for each outline. The lead reviewer reaches out as needed if they have questions or need feedback.
   iii. TAPS
      1. Shalee Hodgson presented
      2. Meet as a team every 2 weeks and go through the outlines together. Shalee usually follows up with the course submitter if necessary.

b. Check-In Gen Ed Sub-Committee
   i. Lisa Reynolds presented
   ii. Elizabeth, Scot, Nora, Trish, Sharron
   iii. Working on adapting the Cultural Literacy framework for the other Gen Ed areas.
   iv. Going to Assessment Committee meetings to gather info from those team leads.
   v. Working on training and communication for faculty

c. Check-In Course Review Guidebook Sub-Committee
   i. Elizabeth Carney presented
   ii. Just starting this work. Figuring out who to involve

d. Vote on Revised Charter
   i. Scot Pruyn presented
   ii. Changed “part-time” to “associate”. Updated membership info.

Motion to approve, approved

6. New Business

a.

7. Closing Comments

a.

-Meeting Adjourned-

Next Meeting: November 5, 2021 (8-9:30am)

Clackamas Community College

CONSENT AGENDA

November 5, 2021

1. Course Title Change

Course	Current Title	Proposed Title

2. Course Number Change

Course	Title	Proposed Course Number

3. Outlines Reviewed for Approval

Course	Title	Implementation
APR-113UW	Basic Substation Wireman III	2022/WI
APR-121UM	Metering: Fundamentals I	
APR-121UW	Fundamental Substation Wireman I	
APR-122UL	Outside Electrical Fundamental Theory II	
APR-122UM	Metering: Fundamentals II	
APR-122UW	Fundamental Substation Wireman II	
APR-123UL	Outside Electrical Fundamental Theory III	
APR-123UM	Metering: Fundamentals III	
APR-123UW	Fundamental Substation Wireman III	
APR-128UL	Transformer Connections II	
APR-138UL	Transformer Connections III	
APR-231UL	Outside Electrical Advanced Theory I	
APR-231UM	Metering: Advanced I	
APR-231UW	Advanced Substation Wireman I	
APR-232UL	Outside Electrical Advanced Theory II	
APR-232UM	Metering: Advanced II	
APR-232UW	Advanced Circuit Theory & Troubleshooting I	
APR-233UL	Outside Electrical Advanced Theory III	
APR-233UM	Metering: Advanced III	
APR-233UW	Advanced Circuit Theory & Troubleshooting II	
ART-297	Professional Practices and Artist's Skills	
BA-222	Financial Management	
BA-228	Computerized Accounting	
BI-176	Integrated Science Inquiry	
BI-177	Integrated Science Inquiry	
BI-234	Introductory Microbiology	
COMM-280	Speech/CWE	
CS-234J	jQuery Web Development	
CS-234P	PHP/MySQL Web Development	

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 113UW

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Basic Substation Wireman III

Course Description:

Basic Substation Wireman III continues student training with the study of substation construction from prints to superstructure and bus design. Students will learn about various types of substation prints and drawings including single-line diagrams and schematics. This course will explore attributes of substation construction including foundations, platforms, ground grids, steel structures and the use of a boom truck and lift calculations. This course is part of the NJATC substation curriculum. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrician Apprenticeship Technologies AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-112UW

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?

Yes

Recommendations:

Requirements: Student Petition

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 Only

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. identify various types of substation equipment,
2. explain the processes involved in substation construction which include equipment foundations, bus, jumpers and ground grids;
3. identify basic types of prints, symbols, conventions, and abbreviations;
4. explain the purpose of construction measuring devices such as transits and levels,
5. explain spill prevention and counter measures,
6. describe insulated platforms and boom truck set up,
7. calculate safe lifts for fiberglass boom,
8. demonstrate (with a team) the construction of a steel structure.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Substation equipment
2. Substation construction site layout and preparation.
3. Introduction to blueprints & specifications.
4. Single-line, schematic and electrical drawing diagrams.
5. Symbols, conventions and abbreviation's.
6. Introduction to measuring and leveling devices.
7. Spill prevention containment systems.
8. Insulated Platforms.
9. Boom capacities and load charts.
10. Steel superstructure assembly and erection.

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
:

Clackamas Community College

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 121UM

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Metering: Fundamentals I

Course Description:

This course is designed to instruct second-year apprentices on the fundamentals of AC theory including the following: DC review, trigonometry review, Resistive-Capacitive (RC), Resistive-Inductive (RL), Resistive-Capacitive-Inductive (RLC) circuits, series and parallel resonance. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-113UM

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?

Yes

Recommendations:

Requirements: Student Petition.

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

No

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 Only

Audit: No

When do you plan to offer this course?

✓ **Fall**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. explain the separation of voltage and current in an inductive or capacitive circuit,
2. compute missing values for any AC or DC combination circuit,
3. explain the nature of inductors and capacitors and their behavior in a circuit,
4. relate and explain AC quantities to measured/metered values.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. DC review.
2. AC Theory introduction.
3. Trigonometry and the power triangle.
4. AC Theory applications.

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:

Specify term: Fall 2014

Clackamas Community College

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 121UW

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Fundamental Substation Wireman I

Course Description:

Fundamental Substation Wireman I continues to explore high voltage substation equipment including transformers, switches, and reactive equipment. Students will also build on their knowledge of Direct Current (DC) theory while beginning the study of the fundamentals of Alternating Current (AC) theory. This course is part of the NJATC substation curriculum. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-113UW

Have you consulted with the appropriate chair if the pre-req is in another program?
Yes (A 'Yes' certifies you have talked with the chair and have received approval.)*

Are there corequisites to this course?

No

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

Yes

Recommendations:

Requirements: Student Petition.

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 Only

Audit: No

When do you plan to offer this course?

✓ **Fall**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. identify and describe the function of common types of high voltage substation equipment,
2. explain the importance of protecting equipment from high currents and voltages,
3. determine how current, resistance and voltage react in combination DC circuits;
4. calculate power in a DC combination circuit,
5. recognize the differences of DC and AC,
6. describe how AC and DC generators work,
7. explain how 3-phase systems operate,
8. identify physical factors that affect inductance.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Substation Equipment Overview.
2. Applications of DC Theory.
3. Fundamentals of Alternating Current.
4. Introduction to Three-Phase 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%

First term to be offered:

Specify term: Fall 2014

Clackamas Community College

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Section #1 General Course Information

Department: ASHP

Submitter

First Name: Joel
Last Name: Wallace
Phone: 0000
Email: joelw

Course Prefix and Number: APR - 122UL

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Outside Electrical Fundamental Theory II

Course Description:

Instruct second-year, second term apprentices on outside electrical apprenticeship related training as it applies to math, construction standards, vectors and safe work practices in electrical energy applications. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-111UL, APR-112UL, and APR-113UL

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?

Yes

Recommendations:

Requirements: Student Petition

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

No

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: Yes

When do you plan to offer this course?

✓ **Not every term**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. utilize vectors, introduction to and practical application of vectors;
2. identify and apply construction standards based on the National Electric Safety Code (NESC);
3. demonstrate the use of a level and transit,
4. demonstrate the use of staking sheets and stakes.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. AC theory.
2. Distribution.
3. Construction standards.
4. National Electric Safety Code (NESC).

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
:

Clackamas Community College

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 122UM

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Metering: Fundamentals II

Course Description:

This course is designed to instruct second-year apprentices on the graphic representation of system parameters (i.e. currents & voltages) and the various transformer line-ups that create those parameters. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-121UM

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?

Yes

Recommendations:

Requirements: Student Petition.

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

No

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 Only

Audit: No

When do you plan to offer this course?

✓ **Winter**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. show connections made for all transformer line-ups,
2. derive and draw system phasors for all possible transformer line-ups,
3. accurately perform power calculations using phasors,
4. effectively calculate neutral current, given phase current values.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Transformer construction and function.
2. System and service vectors.
3. Pulse weights and rates.
4. Analog outputs.
5. Quadrant metering.
6. Series test vectors.

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:

Specify term: Winter 2015

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 122UW

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Fundamental Substation Wireman II

Course Description:

Fundamental Substation Wireman II identifies the role that transformers play in substations and takes a closer look at on-the-job safety. Included will be information on transformer construction, connections, tap changers and protection, as well as an introduction to transformer test instruments. Safety aspects will include lock-out/tag-out procedures, transformer hazards, grounding and step and touch potentials. Safety will be covered in greater detail, focusing on protective grounding live-line tools and arc flash compliance. This course is part of the NJATC substation curriculum. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-121UW

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?

Yes

Recommendations:

Requirements: Student Petition.

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 Only

Audit: No

When do you plan to offer this course?

✓ **Winter**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. describe lock-out/tag-out procedures,
2. explain how transformers are installed and connected to the system,
3. list transformer and other test instruments,
4. explain how transformer tap changers work,
5. identify the hazards of step and touch potential,
6. explain how power factor and harmonics affect the power system,
7. recall OSHA resources pertaining to substation safety,
8. describe the processes of substation safety such as, applying personal protective grounds, vehicle grounding, and applying rubber protective devices;
9. explain how to use live line tools,
10. recall substation distribution circuit operation,
11. describe substation operations and maintenance procedures.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Safety awareness on the job.
2. Lock-out /Tag-out - substation applications.
3. Introduction to transformers.
4. Introduction to test instruments.
5. Conducting transformer load checks.
6. Transformers – three-phase
7. Specific hazards working with transformers
8. Grounding in substations.
9. Step and touch Potential.
10. OSHA 1910.269 pu) (Substations).
11. Arc Flash compliance.
12. Applying Rubber Protective Devices.
13. Live Line Tools – Introduction, Identification, and Care.
14. Substations – Operations and Maintenance.
15. Safety in Substations and Switchyards.

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:

Specify term: Winter 2015

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 123UL

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Outside Electrical Fundamental Theory III

Course Description:

Instruct the second year apprentice on cable applications, steps to restoring service, identification and care of hot line tools, lifting and digging operations with a mobile crane, traffic signal industry overview and basics of street lighting maintenance. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrician Apprenticeship Technologies AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-122UL

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?

Yes

Recommendations:

Requirements: Student Petition.

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

No

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. identify and select appropriate cable; both type, and size, for applications involving terminations, splicing, and use of a meggar (type of meter);
2. name indicators of faults, and ways to locate them and restore electrical service;
3. identify hot line tools and explain their use and proper care,
4. calculate boom capacity of a load when using a mobile crane,
5. demonstrate lifting and digging operations with a mobile crane/boom truck (digger derrick);
6. name safety rules to be followed when working in a confined space doing underground installations,
7. explain the fundamentals of traffic signal cabinets, hardware, equipment, phasing and other traffic control devices;
8. explain the fundamentals of street lighting including: time and control, light control, lamps, trouble shooting and series circuits.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Cable splicing I-XII.
2. Distribution test instruments.
3. Hotsticks.
4. Mobile cranes/booms.
5. Confined space/underground installations.
6. Introduction to the Manual of Uniform Traffic Control Devices.
7. Street lighting.

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
:

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 123UM

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Metering: Fundamentals III

Course Description:

This course is designed to instruct second-year apprentices on the fundamentals of power calculations based on mathematical and planar approaches. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-122UM

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?

Yes

Recommendations:

Requirements: Student Petition.

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 Only

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. calculate various power values mathematically,
2. compare mathematical results to vectoral calculations,
3. pass a final exam demonstrating full understanding of Metering Fundamentals I thru III.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Meter forms and construction.
2. Meter vectors.
3. Power calculations.
4. Applying meter vectors to power measurement.
5. Vector addition (neutral imbalance).
6. Pulse weights and rates.
7. Series test vectors.
8. Analog outputs.
9. Quadrant metering.

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:

Specify term: Spring 2015

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 123UW

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Fundamental Substation Wireman III

Course Description:

Fundamental Substation Wireman III students will develop a journey level understanding of cable splicing, fiber optic cables and power transformer maintenance while beginning detailed studies of other major substation equipment. This course is part of the NJATC substation curriculum. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-122UW

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?

Yes

Recommendations:

Requirements: Student Petition.

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 Only

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. describe a power transformer inspection,
2. perform a transformer turns ratio, power factor, insulation and resistance test;
3. explain the basics of Sulfur Hexafluoride (SF6) gas handling and leak detection,
4. cite EPA Oil leak requirements,
5. demonstrate cable splicing,
6. perform fiber optic cable installation,
7. explain how to test power transformer pressure relays,
8. list the steps to maintain a transformer tap changer,
9. describe various types of power circuit breaker operating mechanisms,
10. explain how power circuit breakers are inspected, maintained, and tested;
11. list procedures to troubleshoot capacitor banks and substation bus,
12. identify typical substation bus configurations,
13. explain how static vikt-amphere reactive (VAR) compensators maintain system voltage and reactive levels.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Cable splicing overview.
2. Fiber optics overview.
3. Power transformer principles.
4. Inspection and tests.
5. Power transformers – tap changers.
6. Transformer Turns Ratio (TTR).
7. Transformer oil quality, filtration. analysis and breakdown test.
8. SF6 Gas applications and regulations for use.
9. Circuit breaker operation and maintenance.
10. Capacitor banks and substation bus configurations.

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:

Specify term: Spring 2015

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 128UL

 # Credits: 1

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 24
Lab (# of hours):
Total course hours: 24

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: Transformer Connections II

Course Description:

Instruct apprentices or journey-level workers on the fundamentals of transformer bank connections: delta-delta, wye-wye, wye-delta, open-delta, open-delta-wye and single-phase regulators and conditions that can cause backfeed. Transformer training is required to be taken each of the three years of a line apprenticeship in order to meet degree requirements. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship Technologies AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-118UL

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?

Yes

Recommendations:

Requirements: Student Petition.

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

No

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?

✓ **Not every term**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. identify proper transformer bank connections,
2. explain the results of wrong polarity, wrong taps and wrong connections;
3. implement safety procedures in connections of transformer banks and regulators,
4. perform voltage and current readings,
5. explain the relationship between mathematics and electricity in a distribution environment.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Vectoring.
2. Single phase theory.
3. Transformer concepts.
4. Transformer connections.
5. Installing transformers.
6. Voltage ratings.

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
:

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 138UL

 # Credits: 1

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 24
Lab (# of hours):
Total course hours: 24

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: Transformer Connections III

Course Description:

Instruct apprentices or journey-level workers on the fundamentals of transformer bank connections: delta-delta, wye-wye, wye-delta, open-delta, open-delta-wye and single-phase regulators and conditions that can cause backfeed. Transformer training is required to be taken each of the three years of a line apprenticeship in order to meet degree requirements. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship Technologies AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-128UL

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?

Yes

Recommendations:

Requirements: Student Petition.

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

No

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?

✓ **Not every term**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. identify proper transformer bank connections,
2. explain the results of wrong polarity, wrong taps and wrong connections;
3. implement safety procedures in connections of transformer banks and regulators,
4. perform voltage and current readings,
5. explain the relationship between mathematics and electricity in a distribution environment.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Vectoring.
2. Single phase theory.
3. Transformer concepts.
4. Transformer connections.
5. Installing trasnformers.
6. Voltage ratings.

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
:

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 231UL

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Outside Electrical Advanced Theory I

Course Description:

Instruct third year, first term apprentices on outside electrical apprenticeship training as it applies to distribution circuits and capacitors, inductance, AC theory, transformers single and three phase voltages and connections, troubleshooting and testing, personal protective grounding, National Electric Safety Code (NESC) standards, and safe work practices. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrician Apprenticeship Technologies AAS

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?

Yes

Recommendations:

Requirements: Second-year outside electrical theory. Student Petition.

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

No

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?

✓ **Fall**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. name the types of circuits used for distribution,
2. explain the function of capacitors,
3. explain inductive reactance and capacitive reactance,
4. apply A/C theory to tasks in the field,
5. identify and explain the individual characteristics of instrument transformers and special transformers (buck and boost),
6. implement troubleshooting techniques and testing of line equipment (transformers and insulators) including three phase transformer banks,
7. name the 12 types of personal protective grounding applications,
8. adhere to the requirements set forth by the National Electric Safety Code for safe work practices.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Distribution circuits and capactors.
2. Inductance.
3. AC theory terms and definitions.
4. Transformers.
5. Troubleshooting.
6. Personal protective grounding.
7. National Electric Safety Code standards.

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
:

Clackamas Community College

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 231UM

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Metering: Advanced I

Course Description:

This course will instruct third-year apprentices on the subject of advanced metering including the following: history of metering (past, present, and future), review of meter vectoring, polyphase vectoring, self-contained meters, instrument rated meters, instrument transformers (current and voltage) and their application. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-123UM

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?

Yes

Recommendations:

Requirements: Student Petition.

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

No

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 Only

Audit: No

When do you plan to offer this course?

✓ **Fall**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. apply the theory of electrical metering equipment used by the electrical industries,
2. define use of measuring instruments,
3. explain the function of instrument transformers,
4. describe advanced metering and demand metering,
5. explain single phase and polyphase vectors and how they pertain to revenue metering and electrical service,
6. apply proper selection of self contained and instrument rated meters, (and instrument transformers) to meet customer and utility needs;
7. demonstrate proper wiring and use of test switches for metering conductors,
8. apply the basic theory of electricity and electrical metering equipment used by the electrical industries,
9. draw and interpret single and polyphase vectors,
10. select proper meters and draw the necessary instrument transformers, wiring, and test switches, if necessary, for residential, commercial, and industrial services.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Single and polyphase meter vectors (phasors).
2. Review of metering fundamentals vectoring.
3. Effect of customer equipment on vectors.
4. Generic watthour meters.
5. Types of meter.
6. Meter selection for customer load.
7. Meter conductors, test switches,and sockets.

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:

Specify term: FAll 2014

Clackamas Community College

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 231UW

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Advanced Substation Wireman I

Course Description:

Advanced Substation Wireman I students will learn about local union by-laws, worker benefits, and labor management relations and their responsibilities as a journey-level worker. Also non-standard equipment such as static volt-ampere reactive (VAR) compensators, gas insulation stations. Additional topics include System Control and Data Acquisition (SCADA), and alternative energy sources. This course is part of the NJATC substation curriculum. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrician Apprenticeship Technologies AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-123UW

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?

Yes

Recommendations:

Requirements: Student Petition.

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 Only

Audit: No

When do you plan to offer this course?

✓ **Fall**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. summarize union by-laws and labor management relations.
2. distinguish the responsibilities of a journey-level worker,
3. identify substation control room equipment,
4. explain the function of static VAR compensators,
5. explain how protective relays and meters are tested, calibrated and maintained;
6. describe the role of System Control and Data Acquisition (SCADA),
7. explain how substation batteries, chargers, and inverters are connected and maintained;
8. describe the function of gas insulation stations,
9. identify the protocol to safely commission and energize a substation,
10. name alternative energy sources.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Almost a journeyman.
2. Understanding your local union by-laws.
3. Labor management relations/Labor Management Cooperation Council (LMCC).
4. Substation control rooms and system overview.
5. Control equipment.
6. System Control and Data Acquisition (SCADA).
7. Substation batteries.
8. Commissioning and energizing a substation.
9. Alternative energy sources.

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
:

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 232UL

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Outside Electrical Advanced Theory II

Course Description:

Instruct third year, second term apprentices on outside electrical apprenticeship training as it applies to distribution capacitors, capacitor switching, breakers and switches, rubber protective devices, live-line tools, live-line work practices, primary and single-phase revenue metering, substation safety procedures, substation construction and advanced math applications. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship Technologies AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-231UL

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?

Yes

Recommendations:

Requirements: Second-year outside electrical theory. Student Petition.

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

No

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?

✓ **Winter**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. explain the function of primary fusing, breakers and switches, regulators and switching circuits (overhead and underground);
2. identify and name types of rubber protective devices when working near live-lines,
3. identify live-line tools and explain the use of each,
4. demonstrate insulator and cross arm changes and tower insulator changes as it applies to live-line work,
5. explain the difference between metering and single-phase revenue meeting,
6. list required substation safety procedures,
7. apply construction standards to their work,
8. calculate fault current.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Components of distribution.
2. Rubber protective devices.
3. Live-line tools.
4. Live-line work practices.
5. Metering.
6. Substation safety procedures.
7. Substation construction.
8. Advanced math applications.

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
:

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 232UM

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Metering: Advanced II

Course Description:

Designed to instruct third-year apprentices on the subject of advanced fundamentals of metering including the following: rates and tariffs, demand metering, Kilovolt-Ampere-Reactance (KVAR) and Kilovolt Amps (KVA) metering, special metering (compensation metering, bidirectional flow (net metering), and totalization, pulse metering (pulse weights, pulse initiation, and totalization). Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrician Apprenticeship Technologies AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-231UM

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?

Yes

Recommendations:

Requirements: Student Petition.

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 Only

Audit: No

When do you plan to offer this course?

✓ **Winter**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. select the proper type of electrical meter to measure the customer's use of electrical energy in accordance with the utilities rate and tariff structure,
2. select the appropriate types of metering equipment to totalize the output of more than one electrical meter,
3. identify and describe pulse metering output (with appropriate pulse weight for 2 and 3 wire systems) for customer monitoring use.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Meter sselection and programming.
2. Rates and Tariffs structure and program selection.
3. Demand metering (KWH and KVAR).
4. Harmonics and KVA demand.
5. Transformer loss compensation and calculations.
6. Totalization and totalizers.
7. Remote Communication (RF, Modem, PLC, Ethernet).
8. AMI and the Smart Grid.
9. Meter Lab.

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
:

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 232UW

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Advanced Circuit Theory & Troubleshooting I

Course Description:

This course is designed to instruct third year wireman students on the advanced theory and application of outside electrical substation related training as it applies to a working understanding of algebra, electron theory and all aspects of AC & DC electric circuit evaluation, reading substation construction prints, National Electric Code (NEC) codes for construction and safe work practices. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrician Apprenticeship Technologies AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-231UW

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?

Yes

Recommendations:

Requirements: Student Petition

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

No

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 Only

Audit: No

When do you plan to offer this course?

✓ **Winter**

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. demonstrate proficiency in reading substation prints,
2. apply wiring standards: auxiliary transformers, control switches, auxiliary relays and personal grounds;
3. apply NEC codes in construction applications,
4. follow safe work practices.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Substation print reading.
2. Substation circuits, relays, and grounds.
3. National Electric Code construction standards.
4. Safety on the job.
5. IBEW test.

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
:

Clackamas Community College

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 233UL

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Outside Electrical Advanced Theory III

Course Description:

Instruct third year, third term apprentices on outside electrical apprenticeship training as it applies to primary fusing and fuse principles, reclosers and sectionalizers, substation equipment, line fault current and voltage regulation, capacitors, power factor/harmonics, fiber optics including: fiber type, cable type, codes and standards, aerial construction, and underground construction, alternative energy sources and journeymen responsibilities. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship Technologies AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-232UL

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?

Yes

Recommendations:

Requirements: Second-year outside electrical theory. Student Petition.

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

No

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. describe what primary fusing is and explain fuse principles,
2. explain the function of sectionalizers and reclosers (mechanical and electronic),
3. name the key equipment components in a substation and state their function including: oil circuit breakers, batteries, air switches and substation control equipment;
4. demonstrate how to test for line faults,
5. demonstrate capacitor switching,
6. explain power factors and power harmonics,
7. name fiber and cable optics types,
8. cite codes and standards for fiber optic construction application both aerial and underground,
9. present pros and cons to alternate energy sources including wind and photvoltaic,
10. state their responsibility as a journeyman to the community, the company and commit to follow the National Electric Safety Code (NESC) for safe work practices.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Primary fusing/fuse principles.
2. Reclosers and sectionalizers.
3. Substation equipment.
4. Fault current, voltage regulation and testing for line faults.
5. Capacitors.
6. Power factor/harmonics.
7. Fiber optics.
8. Alternate energy: wind and photovoltaic.
9. Journeyman responsibilities.

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
:

Clackamas Community College

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 233UM

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Metering: Advanced III

Course Description:

This course is designed to instruct third-year apprentices on the subject of advanced fundamentals of metering including the following: meter software programs (error codes, service test editing, interpretation of instrumentation vectors, interval data, and programming), meter communications, general system troubleshooting, power quality and harmonics, Automated Meter Infrastructure (AMI)/Automated Meter Reading (AMR) and the Smart Grid. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-232UM

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?

Yes

Recommendations:

Requirements: Student Petition.

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

No

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 Only

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. use meter software to diagnose meter error codes, edit service tests, download interval data, and reprogram meters;
2. use communication test equipment to diagnose meter communication problems,
3. perform basic electrical system troubleshooting to determine the best course for correcting service problems,
4. use test equipment to measure electrical harmonics and gauge their effect on the meter,
5. explain the difference between AMI and AMR, and their function within the Smart Grid;
6. describe the purpose and steps taken to perform in service testing.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Meter software applications.
2. Establishing ommunication (optical, modem, or Ethernet).
3. Interval data downloading and transfer.
4. Meter diagnostics, vector interpretation, and meter error codes.
5. Service test interpretation and editing.
6. Service troubleshooting.
7. Harmonics and Power Quality.
8. Integrated Site testing.
9. Third Year review.

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:

Specify term: Spring 2015

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly
Last Name: Tracy
Phone: 0945
Email: shellyt

Course Prefix and Number: APR - 233UW

 # Credits: 5

Contact hours

Lecture (# of hours): 55
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 55

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: Advanced Circuit Theory & Troubleshooting II

Course Description:

This course is designed to instruct third-year wireman students on the advanced theory and application of outside electrical substation related training as it applies to a working understanding of algebra, electron theory and all aspects of AC & DC electric circuit evaluation, reading substation construction prints, National Electric Code (NEC) codes for construction and safe work practices. Required: Student Petition.

Type of Course: Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

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): Electrical Apprenticeship AAS

Are there prerequisites to this course?

Yes

Pre-reqs: APR-232UW

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?

Yes

Recommendations:

Requirements: Student Petition.

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 Only

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. demonstrate proficiency in reading substation prints,
2. explain general plant and substation control schemes as they relate to: lighting, motor control, transmission& feeder breakers and capacitor banks;
3. cite standards for substation construction,
4. describe substation maintenance practices,
5. pass written tests on Motor Operator responsibilities, load shed controls, alarm circuits and Remote Terminal Unit (RTU)circuits, Programmable Logic Controller (PLC) basics, distribution systems, fuses and protective relays, breaker mechanisms and voltage regulators.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Substation print reading.
2. Substation control schemes.
3. NEC construction standards.
4. Substation maintenance.
5. Motor Operator responsibilities.

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:

Specify term: Spring 2015

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Art

Submitter

First Name: Nora
Last Name: Brodnicki
Phone: 3036
Email: norab

Course Prefix and Number: ART - 297

 # 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: Professional Practices and Artist's Skills

Course Description:

Professional practices relevant to emerging artists' careers. Format includes resume and portfolio preparation, developing resources and community connections, gaining exposure and representation for artwork, creating publicity, basic marketing and exhibition strategies, presenting and exhibiting work, business concerns, art market dynamics, guest lecturers and visiting artists, methods of art collecting with additional field trips to local galleries and professional artist studios.

Type of Course: Lower Division Collegiate

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?

No

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?

Yes

Recommendations: WR-121

Requirements:

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

No

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: Yes

When do you plan to offer this course?

✓ **Not every term**

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.define their artistic community and seek, develop, and apply its professional resources and connections to their professional artistic practice;
2.create and evaluate professional context(s) for accessing and viewing artwork;
3.assess, develop and apply educational, business, legal and financial concerns to their art career;
4.develop written documents for marketing, including personal and/or professional mission statement, professional artist resume, and professional artist's statement;
5.create and present appropriate visual documentation of artwork with up to date programs, image applications, technology, web sites, video, online exhibitions and alternative methods.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1.Researching and applying for exhibition opportunities.
2.Creating a resume, statement and portfolio of professional work.
3.Developing email lists and online followers.
4.Creating publicity using methods such as social media, evites, websites, flyers, mailers, print media listings, posters and mainstream media coverage.
5.Analyzing and applying basic marketing strategies.
6.Recognize and apply current artist’s financial and business concerns and practices. Issues may include establishing workspace/studio, health and safety concerns, record keeping, taxes, insurance, copyright, working freelance, contracts, commissions, consignments and grant preparation.
7.Discuss and develop strategies for continuing an art practice that may include:
• Continuing education.
• Teaching.
• Learning a trade or skill.
• Working in the art world.
• Applying for and creating public art.
• Working freelance or on commission.

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)

✓ **EOU (Eastern Oregon University)**
✓ **OSU (Oregon State University)**
✓ **OSU-Cascade**
✓ **PSU (Portland State University)**
✓ **SOU (Southern Oregon University)**
✓ **UO (University of Oregon)**
✓ **WOU (Western Oregon University)**

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

WOU= ART 318
PSU= ART 182

How does it transfer? (Check all that apply)

✓ **general elective**
:

First term to be offered:

Next available term after approval
:

Clackamas Community College

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Section #1 General Course Information

Department: Business & Computer Science: Business

Submitter

First Name: Joan
Last Name: San-Claire
Phone: 3013
Email: joan.san-claire@clackamas.edu

Course Prefix and Number: BA - 222

 # 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: Financial Management

Course Description:

Study of sources and uses of funds, financials, and cash flows; includes valuation of financial assets; long-term cash flows and budgeting; cost of capital; capital structure and dividend policy; working-capital management, ethics, and international business finance.

Type of Course: Lower Division Collegiate

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: BA-211

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?

No

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: Yes

When do you plan to offer this course?

✓ Not every year

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?

No

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. apply financial decision making to financial markets, using interest rate analysis, cash flow analysis, and financial ratio analysis;
2. prepare financial forecasting and budgeting based on time value principles,
3. analyze value-added principles in debt and equity choices, factoring risk and return, cash flows, and cost of capital;
4. compute time value of money and capital budgeting applications;
5. explain the financing mix, determine dividend policy, describe working capital management, and liquid asset management; link each concept to decision making of a CFO.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Foundations of finance.
2. Financial background.
3. Cash flows and financial analysis.
4. The financial system and interest.
5. Time value of money.
6. Valuation of bonds.
7. Valuation of stocks.
8. Risk and return.
9. Capital budgeting.
10. Cash flow estimation.
11. Risk and capital budgeting.
12. Cost of capital.
13. Capital structure and leverage.
14. Dividends.
15. Management of working capital.

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)

✓ **EOU (Eastern Oregon University)**
✓ **OIT (Oregon Institute of Technology)**
✓ **OSU (Oregon State University)**
✓ **PSU (Portland State University)**
✓ **UO (University of Oregon)**

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

How does it transfer? (Check all that apply)

✓ **general elective**
:

First term to be offered:

Specify term: not active currently (replaced by BA240)

Clackamas Community College

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Section #1 General Course Information

Department: Business & Computer Science: Business

Submitter

First Name: Joan
Last Name: San-Claire
Phone: 3013
Email: joan.san-claire@clackamas.edu

Course Prefix and Number: BA - 228

 # 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: Computerized Accounting

Course Description:

An introductory, hands-on experience with computer applications that are used for accounting in a Windows operating system environment, to include transaction entry for a full accounting cycle, from business setup through month-end close. (Note: Mac users can access Windows via Boot Camp.)

Type of Course: Lower Division Collegiate

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?

Yes

Name of degree(s) and/or certificate(s): Accounting Clerk Certificate, Accounting AAS, and Administrative Office Professional AAS

Are there prerequisites to this course?

Yes

Pre-reqs: BA-111 or BA-211

Have you consulted with the appropriate chair if the pre-req is in another program?
Yes (A 'Yes' certifies you have talked with the chair and have received approval.)*

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?

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?

✓ **Fall**

✓ **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. prepare general and special journal entries using an accounting software package for service and merchandising businesses;
2. demonstrate how to complete exercises using accounts receivable, accounts payable, invoicing, payroll, inventory, budgeting, and job cost systems;
3. prepare financial statements and complete financial statement analysis;
4. complete the computer accounting cycle using accounting software.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Integrated computerized accounting tour.
2. Setting up your accounting system
3. Cash-oriented business activities.
4. Additional business activities.
5. Preparing reports.
6. Adjusting entries.
7. Budgeting
8. Reporting business activities.

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)

✓ **EOU (Eastern Oregon University)**
✓ **PSU (Portland State University)**
✓ **OIT (Oregon Institute of Technology)**
✓ **OSU (Oregon State University)**
✓ **UO (University of Oregon)**

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

Offered at all Oregon Community Colleges as BA-228 Computerized Accounting
Not offered at Universities

How does it transfer? (Check all that apply)

✓ **general elective**
:

First term to be offered:

Next available term after approval
:

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Sciences

Submitter

First Name: Polly
Last Name: Schulz
Phone: 3358
Email: pollys

Course Prefix and Number: BI - 176

 # 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: Integrated Science Inquiry

Course Description:

An introductory laboratory course for liberal arts majors emphasizing an evolutionary approach to major topics in science through the use of integrated themes. The themes focus on the scientific discoveries and people that shape our understanding of the world. The course emphasizes an interdisciplinary perspective on science, collaborative scientific investigations and critical thinking. Themes have included: Human Evolution, Diseases of Africa, and the Lewis and Clark Expedition.

Type of Course: Lower Division Collegiate

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?

Yes

Check which General Education requirement:

✓ **Science & Computer Science**

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

No

Are there prerequisites to this course?

No

Are there corequisites to this course?

Yes

Co-reqs: BI-176L

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

Yes

Recommendations: WRD-098 or placement in WR-121

Requirements:

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

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?

✓ **Winter**

Is this course equivalent to another?

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

Yes

Course Number: ASC-176 Title: Integrated Science Inquiry

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 the ability to communicate and comprehend basic scientific principles and concepts important to an understanding of major ideas in science, (SC1)
2. describe the fundamental concepts of evolutionary biology and its role in shaping current scientific knowledge, (SC3)
3. critically evaluate and apply the key concepts of evolutionary biology to humans and human diseases, present possible solutions and generate further questions, (SC1)
4. demonstrate an ability to work individually and collaboratively to identify scientific resources, gather scientific information, critically analyze scientific information, explore ideas and present complex scientific issues; (SC2)
5. apply scientific and technical modes of inquiry to gather and critically evaluate information about various topics important to science and society; (SC2)
6. explore the limitations and consequences of science and its impact on human society, (SC3)
7. integrate the concepts of natural selection, population genetics, artificial selection, speciation and extinction to describe the relationship between humans and their environment. (SC1)

AAOT/ASOT GENERAL EDUCATION OUTCOMES

AAOT/ASOT GENERAL EDUCATION OUTCOMES

COURSE OUTLINE MAPPING CHART

Mark outcomes addressed by the course:

- Mark "C" if this course completely addresses the outcome. Students who successfully complete this course are likely to have attained this learning outcome.
- Mark "S" if this course substantially addresses the outcome. More than one course is required for the outcome to be completely addressed. Students who successfully complete all of the required courses are likely to have attained this learning outcome.
- Mark "P" if this course partially addresses the outcome. Students will have been exposed to the outcome as part of the class, but the class is not a primary means for attaining the outcome and assessment for general education purposes may not be necessary.

As a result of completing the AAOT/ASOT general education requirements, students will be able to:

WR: Writing Outcomes

P 1. Read actively, think critically, and write purposefully and capably for academic and, in some cases, professional audiences.

P 2. Locate, evaluate, and ethically utilize information to communicate effectively.

P 3. Demonstrate appropriate reasoning in response to complex issues.

SP: Speech/Oral Communication Outcomes

P 1. Engage in ethical communication processes that accomplish goals.

P 2. Respond to the needs of diverse audiences and contexts.

P 3. Build and manage relationships.

MA: Mathematics Outcomes:

P 1. Use appropriate mathematics to solve problems.

P 2. Recognize which mathematical concepts are applicable to a scenario, apply appropriate mathematics and technology in its analysis, and then accurately interpret, validate, and communicate the results.

AL: Arts and Letters Outcomes

1. Interpret and engage in the Arts & Letters, making use of the creative process to enrich the quality of life.

P 2. Critically analyze values and ethics within range of human experience and expression to engage more fully in local and global issues.

SS: Social Science Outcomes

P 1. Apply analytical skills to social phenomena in order to understand human behavior.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.

SC: Science or Computer Science Outcomes

S 1. Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models, and solutions and generate further questions.

S 2. Apply scientific and technical modes of inquiry, individually, and collaboratively, to critically examine the influence of scientific and technical knowledge on human society and the environment.

S 3. Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment.

CL: Cultural Literacy Outcome

P 1. Identify and analyze complex practices, values, and beliefs and the culturally and historically defined meanings of difference.

Outcomes Assessment Strategies:

✓ **General Examination**
✓ **Presentations**
✓ **Thesis/Research Project**
✓ **Criteria**
✓ **Rubrics**
✓ **Journal Writing**
✓ **Performances/Simulation**
:
✓ **Projects**
✓ **Writing Assignments**
✓ **Multiple Choice Test**

Major Topic Outline:

1. What makes something science.
a. How do you know what you know? Critical thinking in science.
b. Exploring misconceptions about science, scientific research and scientific methodologies.
2. Where did life come from?
a. Critical analysis of the evidence to support various scientific hypotheses on the origins of complex life on earth.
b. Describe the basis of multicellularity and the origins of multicellular organisms.
3. Introduction to Modern Genetics
a. An analysis of population genetics and genetic diversity.
b. Identify the source of mutations & diversity and its social implications.
c. Examine the link between developmental genetics and embryology.
4. Natural selection
a. Examine the importance of natural selection in shaping human population.
b. Use of natural selection models to explain, predict and examine changes in human populations.
c. Explore the interactions between natural selection, genetic drift and diversity in human populations.
5. Speciation and the fossil record.
a. Examine current scientific information on how species evolve.
b. Explore the relationship between speciation and extinction.
c. Critical analysis of the role of fossils and DNA analysis in tracing human evolution.
6. Why sex?
a. Examine the importance of meiosis and sexual reproduction in creating diversity.
b. Exploration of the role of sexual selection in shaping populations and behaviors.
c. Critical analysis of the role of innate versus learned behaviors.
d. Examination of various hypotheses to explain mate selection and sexual orientation.
7. Human Populations.
a. Exploration of the role of human migration in the dissemination of human traits and diseases.
b. Examination of the historical, social and biological perspectives on Race and their implications for human society.
8. Science and Society.
a. The impact of social and political decisions on science and/or science education.
9. Inquiry based investigations and presentations.
a. Practical application of course concepts to explain the human condition as outlined in the course theme, i.e. What makes us human? Human Evolution; Exploration of the impact of specific diseases on the peoples of Africa or other selected theme topics.

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)**

✓ **OSU (Oregon State University)** ✓ **UO (University of Oregon)**

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

PSU--ASC 201 Science Inquiry
all others currently transfers as Gen. Ed. Science course with lab.

How does it transfer? (Check all that apply)

✓ **general education or distribution requirement**

:

Provide evidence of transferability: (minimum one, more preferred)

✓ **Correspondence with receiving institution (mail, fax, email, etc.)**
✓ **Other. Please explain.**

An existing class already transferring.

First term to be offered:

Next available term after approval
:

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Sciences

Submitter

First Name: Polly
Last Name: Schulz
Phone: 3058
Email: pollys

Course Prefix and Number: BI - 177

 # 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: Integrated Science Inquiry

Course Description:

An introductory laboratory course for liberal arts majors emphasizing an evolutionary approach to major topics in science through the use of integrated themes. The themes focus on the scientific discoveries and people that shape our understanding of the world. The course emphasizes an interdisciplinary perspective on science, collaborative scientific investigations and critical thinking. Themes have included Evolution & Contemporary Issues, Africa, and the Lewis and Clark Expedition.

Type of Course: Lower Division Collegiate

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?

Yes

Check which General Education requirement:

✓ **Science & Computer Science**

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

No

Are there prerequisites to this course?

No

Are there corequisites to this course?

Yes

Co-reqs: BI-177L

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

Yes

Recommendations: WRD-098 or placement in WR-121

Requirements:

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

No

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: Yes

When do you plan to offer this course?

✓ **Fall**

Is this course equivalent to another?

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

Yes

Course Number: ASC-177 Title: Integrated Science Inquiry

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 the ability to communicate and comprehend basic scientific principles and concepts important to an understanding of modern biology, (SC1)
2. describe the fundamental concepts of evolutionary biology and its role in shaping current scientific knowledge, (SC3)
3. critically examine and evaluate existing and alternative scientific explanations for current scientific topics, (SC2) (SC3)
4. demonstrate an ability to work individually and collaboratively to gather and identify scientific resources, critically evaluate information and explore ideas about various topics important to modern science and society, (SC2)
5. apply mathematics and/or technology to accurately interpret, validate and communicate solutions to solve problems and test hypotheses; (SC1)
6. describe the limitations and consequences of human activity on society and the environment. (SC2) (SC3)

AAOT/ASOT GENERAL EDUCATION OUTCOMES

AAOT/ASOT GENERAL EDUCATION OUTCOMES

COURSE OUTLINE MAPPING CHART

Mark outcomes addressed by the course:

- Mark "C" if this course completely addresses the outcome. Students who successfully complete this course are likely to have attained this learning outcome.
- Mark "S" if this course substantially addresses the outcome. More than one course is required for the outcome to be completely addressed. Students who successfully complete all of the required courses are likely to have attained this learning outcome.
- Mark "P" if this course partially addresses the outcome. Students will have been exposed to the outcome as part of the class, but the class is not a primary means for attaining the outcome and assessment for general education purposes may not be necessary.

As a result of completing the AAOT/ASOT general education requirements, students will be able to:

WR: Writing Outcomes

P 1. Read actively, think critically, and write purposefully and capably for academic and, in some cases, professional audiences.

P 2. Locate, evaluate, and ethically utilize information to communicate effectively.

P 3. Demonstrate appropriate reasoning in response to complex issues.

SP: Speech/Oral Communication Outcomes

P 1. Engage in ethical communication processes that accomplish goals.

P 2. Respond to the needs of diverse audiences and contexts.

P 3. Build and manage relationships.

MA: Mathematics Outcomes:

P 1. Use appropriate mathematics to solve problems.

P 2. Recognize which mathematical concepts are applicable to a scenario, apply appropriate mathematics and technology in its analysis, and then accurately interpret, validate, and communicate the results.

AL: Arts and Letters Outcomes

1. Interpret and engage in the Arts & Letters, making use of the creative process to enrich the quality of life.

P 2. Critically analyze values and ethics within range of human experience and expression to engage more fully in local and global issues.

SS: Social Science Outcomes

P 1. Apply analytical skills to social phenomena in order to understand human behavior.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.

SC: Science or Computer Science Outcomes

S 1. Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models, and solutions and generate further questions.

S 2. Apply scientific and technical modes of inquiry, individually, and collaboratively, to critically examine the influence of scientific and technical knowledge on human society and the environment.

S 3. Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment.

CL: Cultural Literacy Outcome

P 1. Identify and analyze complex practices, values, and beliefs and the culturally and historically defined meanings of difference.

Outcomes Assessment Strategies:

:

Major Topic Outline:

1. What makes something science.
a. How do you know what you know? Critical thinking in science.
b. Exploring misconceptions about science, scientific research and scientific methodologies.
2. Introduction to Modern Genetics
a. Applying the concepts of population genetics and genetic diversity to explore important topics in science.
b. Mutation, diversity and its implications for disease and the ecosystem.
3. Natural and Sexual selection.
a. Examine the importance of natural selection in shaping populations and the environment.
b. Use of selection models to explain, predict and examine changes in populations and the environment.
4. Artificial selection.
a. The role of humans in emerging diseases.
b. The impact of human activities on the environment.
5. Sexual Selection & innate behaviors
a. The role of sexual selection in shaping populations and behaviors.
b. Critical analysis of the role of innate versus learned behaviors.
6. Science and Society.
a. Understanding the human condition through applying scientific models and concepts to various topics important to society.
b. Critical analysis of evidence for the support of various scientific hypotheses and alternate scientific explanations.
c. Fact check---Critical analysis of scientific topics presented in the media.
d. The impact of social and political decisions on science.
7. Inquiry based investigations and presentations.
a. Practical application of course concepts in examining current scientific knowledge as outlined in the course theme, i.e. Why Evolution Matters? The Plants and Ecosystems of Africa or other selected theme topics.

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)**

✓ **OSU (Oregon State University)** ✓ **UO (University of Oregon)**

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

PSU--Transfers as ASC 202 Science Inquiry. UO---maps to BI-140M
All others transfers as Gen. Ed Science with lab class.

How does it transfer? (Check all that apply)

✓ **general education or distribution requirement**

:

Provide evidence of transferability: (minimum one, more preferred)

✓ **Correspondence with receiving institution (mail, fax, email, etc.)**
✓ **Other. Please explain.**

Existing class. Already transfers.

First term to be offered:

Next available term after approval
:

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Sciences

Submitter

First Name: Polly
Last Name: Schulz
Phone: 3358
Email: pollys

Course Prefix and Number: BI - 234

 # 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: Introductory Microbiology

Course Description:

An introductory microbiology lab course required for health science and science majors. Includes characteristics, physiology and growth requirements of microorganisms, interactions between humans and microorganisms, immunology, infection, and principles of microbial control. This course emphasizes critical thinking and analytical skills in a collaborative laboratory environment.

Type of Course: Lower Division Collegiate

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?

Yes

Check which General Education requirement:

✓ **Science & Computer Science**

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

No

Are there prerequisites to this course?

Yes

Pre-reqs: BI-101, BI-112 or BI-211; and CH-104, CH-112 or CH-221

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

No

Are there corequisites to this course?

Yes

Co-reqs: BI-234L

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

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?

✓ **Fall**
✓ **Winter**
✓ **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 the ability to communicate and comprehend basic scientific principles and concepts important to an understanding of microbiology; (SC1)
2. critically examine and assess the strengths and weaknesses of scientific theories and/or hypotheses important to an understanding of microbiology principles; (SC3)
3. apply scientific and technical modes of inquiry, including use of common electronic and lab equipment,to gather data, critically evaluate information and explore the limitations and consequences of human actions on infectious disease and disease transmission. (SC2) (SC3)

AAOT/ASOT GENERAL EDUCATION OUTCOMES

AAOT/ASOT GENERAL EDUCATION OUTCOMES

COURSE OUTLINE MAPPING CHART

Mark outcomes addressed by the course:

- Mark "C" if this course completely addresses the outcome. Students who successfully complete this course are likely to have attained this learning outcome.
- Mark "S" if this course substantially addresses the outcome. More than one course is required for the outcome to be completely addressed. Students who successfully complete all of the required courses are likely to have attained this learning outcome.
- Mark "P" if this course partially addresses the outcome. Students will have been exposed to the outcome as part of the class, but the class is not a primary means for attaining the outcome and assessment for general education purposes may not be necessary.

As a result of completing the AAOT/ASOT general education requirements, students will be able to:

WR: Writing Outcomes

P 1. Read actively, think critically, and write purposefully and capably for academic and, in some cases, professional audiences.

P 2. Locate, evaluate, and ethically utilize information to communicate effectively.

P 3. Demonstrate appropriate reasoning in response to complex issues.

SP: Speech/Oral Communication Outcomes

P 1. Engage in ethical communication processes that accomplish goals.

2. Respond to the needs of diverse audiences and contexts.

3. Build and manage relationships.

MA: Mathematics Outcomes:

P 1. Use appropriate mathematics to solve problems.

P 2. Recognize which mathematical concepts are applicable to a scenario, apply appropriate mathematics and technology in its analysis, and then accurately interpret, validate, and communicate the results.

AL: Arts and Letters Outcomes

1. Interpret and engage in the Arts & Letters, making use of the creative process to enrich the quality of life.

P 2. Critically analyze values and ethics within range of human experience and expression to engage more fully in local and global issues.

SS: Social Science Outcomes

P 1. Apply analytical skills to social phenomena in order to understand human behavior.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.

SC: Science or Computer Science Outcomes

S 1. Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models, and solutions and generate further questions.

S 2. Apply scientific and technical modes of inquiry, individually, and collaboratively, to critically examine the influence of scientific and technical knowledge on human society and the environment.

S 3. Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment.

CL: Cultural Literacy Outcome

1. Identify and analyze complex practices, values, and beliefs and the culturally and historically defined meanings of difference.

Outcomes Assessment Strategies:

✓ **General Examination**
✓ **Projects**
✓ **Writing Assignments**
✓ **Industry Standards**
✓ **Multiple Choice Test**
✓ **Criteria**
✓ **Rubrics**
✓ **Pre-Post Assessment**
✓ **Other Assessment Tools**: Lab assignments

Major Topic Outline:

1, Overview of microorganisms and their characteristics.
2. Scientific Methodology & Measurements in microbiology.
3. Bacteria identification & classification.
4. Mutation, diversity, artificial selection and the bacterial genome.
5. Viruses & bacteriophage.
6. The dynamics of bacterial growth & nutritional requirements.
7. Bacteria metabolism and pathogenicity factors.
8. Innate and adaptive Immunity and the human immune system to microorganism.
9. Common eukaryotic pathogens in human health.
9. Antimicrobial methods.

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)

✓ **EOU (Eastern Oregon University)**
✓ **OIT (Oregon Institute of Technology)**
✓ **OSU (Oregon State University)**
✓ **OSU-Cascade**
✓ **PSU (Portland State University)**
✓ **SOU (Southern Oregon University)**
✓ **UO (University of Oregon)**
✓ **WOU (Western Oregon University)**

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

BI-234 Microbiology

How does it transfer? (Check all that apply)

✓ **required or support for major**
✓ **general education or distribution requirement**
✓ **general elective**
:

Provide evidence of transferability: (minimum one, more preferred)

✓ **Other. Please explain.**

legacy class offered at all colleges. Lab credits may vary.

First term to be offered:

Next available term after approval
:

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: COTA

Submitter

First Name: Alice
Last Name: Lewis
Phone: 3156
Email: alicel@clackamas.edu

Course Prefix and Number: COMM - 280

 # Credits: 6

Contact hours

Lecture (# of hours):
Lec/lab (# of hours):
Lab (# of hours): 216
Total course hours: 216

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: Speech/CWE

Course Description:

Cooperative work experience. Provides students with on-the-job experience in the field of communications. Variable Credit: 2-6 credits. Required: Student Petition.

Type of Course: Lower Division Collegiate

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

Yes

Up to how many credits can this course be repeated to satisfy a degree requirement?

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?

No

Are there corequisites to this course?

Yes

Co-reqs: CWE-281

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

Yes

Recommendations:

Requirements: Student Petition

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

No

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: Yes

When do you plan to offer this course?

✓ **Summer**
✓ **Fall**
✓ **Winter**
✓ **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. apply academic knowledge, skills, and abilities to a work environment specific to their program of study;
2. demonstrate appropriate work habits (time management, interpersonal relationships, attendance, professional appearance, and problem solving) for their work environment;
3. apply career management strategies such as interviewing, resume writing, networking, and portfolio development.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Students earn cooperative education credit by working in jobs that are directly related to their program in communication studies.
2. Students, in cooperation with their instructor and supervisor, will set and accomplish meaningful and measurable learning objectives that will improve their on-the-job performance.
3. Students and CWE instructor will attend regular, scheduled meetings to discuss CWE content.
4. Student will attend CWE seminar lecture.

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)

✓ **OIT (Oregon Institute of Technology)**
✓ **OSU (Oregon State University)**
✓ **OSU-Cascade**
✓ **PSU (Portland State University)**
✓ **SOU (Southern Oregon University)**
✓ **UO (University of Oregon)**

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

U of O FE-200T Field Experience

How does it transfer? (Check all that apply)

✓ **general elective**
✓ **other (provide details)**: Verified through transferabillity information listed on colleges' websites

First term to be offered:

Next available term after approval
:

Clackamas Community College

Online Course/Outline Submission System

Show changes since last approval in red Print Edit Delete Back
Reject Publish

Section #1 General Course Information

Department: Business & Computer Science: Computer Science

Submitter

First Name: Debra
Last Name: Carino
Phone: 3170
Email: dcarino

Course Prefix and Number: CS - 234J

 # 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: jQuery Web Development

Course Description:

In-depth exploration of creating dynamic websites using the jQuery function library and other JavaScript frameworks. Topics include creating AJAX applications, XML and JSON data formats, creating and interacting with NoSql databases.

Type of Course: Lower Division Collegiate

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)?

Yes

Check which General Education requirement:

✓ **Mathematics**

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

No

Are there prerequisites to this course?

Yes

Pre-reqs: CS-133S or previous HTML and programming experience

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?

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. describe the document object model and use the DOM to dynamically alter aspects of web pages efficiently via the use of jQuery;
2. create a basic page that uses JavaScript to make dynamic calls to server-side scripts via the XMLHttpRequest object;
3. install and use a JavaScript/AJAX toolkit similar to JQuery when creating AJAX applications;
4. create interesting and useful visual, navigation, and mobile-friendly effect via the use of jQuery;
5. create NoSql database and use a current JavaScript framework to interact with the database via created web page.

AAOT/ASOT GENERAL EDUCATION OUTCOMES

AAOT/ASOT GENERAL EDUCATION OUTCOMES

COURSE OUTLINE MAPPING CHART

Mark outcomes addressed by the course:

- Mark "C" if this course completely addresses the outcome. Students who successfully complete this course are likely to have attained this learning outcome.
- Mark "S" if this course substantially addresses the outcome. More than one course is required for the outcome to be completely addressed. Students who successfully complete all of the required courses are likely to have attained this learning outcome.
- Mark "P" if this course partially addresses the outcome. Students will have been exposed to the outcome as part of the class, but the class is not a primary means for attaining the outcome and assessment for general education purposes may not be necessary.

As a result of completing the AAOT/ASOT general education requirements, students will be able to:

WR: Writing Outcomes

1. Read actively, think critically, and write purposefully and capably for academic and, in some cases, professional audiences.

2. Locate, evaluate, and ethically utilize information to communicate effectively.

3. Demonstrate appropriate reasoning in response to complex issues.

SP: Speech/Oral Communication Outcomes

1. Engage in ethical communication processes that accomplish goals.

2. Respond to the needs of diverse audiences and contexts.

3. Build and manage relationships.

MA: Mathematics Outcomes:

P 1. Use appropriate mathematics to solve problems.

P 2. Recognize which mathematical concepts are applicable to a scenario, apply appropriate mathematics and technology in its analysis, and then accurately interpret, validate, and communicate the results.

AL: Arts and Letters Outcomes

1. Interpret and engage in the Arts & Letters, making use of the creative process to enrich the quality of life.

2. Critically analyze values and ethics within range of human experience and expression to engage more fully in local and global issues.

SS: Social Science Outcomes

1. Apply analytical skills to social phenomena in order to understand human behavior.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.

SC: Science or Computer Science Outcomes

1. Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models, and solutions and generate further questions.

2. Apply scientific and technical modes of inquiry, individually, and collaboratively, to critically examine the influence of scientific and technical knowledge on human society and the environment.

3. Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment.

Outcomes Assessment Strategies:

:

Major Topic Outline:

1. JavaScript concept review.
a. OOP.
b. Variables.
c. Operators.
d. Functions.
e. Control structures.
f. Events.
2. JavaScript/AJAX toolkits.
a. JQuery.
a1. Installation/configuration.
a2. Calling functions.
3. Using jQuery to access the JavaScript document object model (DOM) and browser object models (BOM).
a. DOM hierarchy.
a1. Modifying pages.
a2. Inserting/deleting/updating elements.
a3. Styles.
3. Introduction to AJAX.
a. Information flow.
b. Basic operation.
c. XMLHttpRequest object.
d. Callback.
4. AJAX data formats.
a. XML.
b. JSON.
5. Using an API.
a. Google search.
b. Google maps.
6. AJAX programming projects.

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)

✓ **EOU (Eastern Oregon University)**
✓ **OIT (Oregon Institute of Technology)**
✓ **OSU (Oregon State University)**
✓ **OSU-Cascade**
✓ **PSU (Portland State University)**
✓ **SOU (Southern Oregon University)**
✓ **UO (University of Oregon)**
✓ **WOU (Western Oregon University)**

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

How does it transfer? (Check all that apply)

✓ **general elective**
:

Provide evidence of transferability: (minimum one, more preferred)

First term to be offered:

Next available term after approval
:

Clackamas Community College

Online Course/Outline Submission System

Show changes since last approval in red Print Edit Delete Back
Reject Publish

Section #1 General Course Information

Department: Business & Computer Science: Computer Science

Submitter

First Name: Debra
Last Name: Carino
Phone: 3170
Email: dcarino

Course Prefix and Number: CS - 234P

 # 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: PHP/MySQL Web Development

Course Description:

Use PHP and MySQL to develop dynamic web sites for use on the Internet. Develop web sites ranging from simple online information forms to complex online applications. Introduce programming fundamentals including variables, control structures, functions and objects. Applications developed use MySQL as the backend database and will explore database connectivity, querying, and security.

Type of Course: Lower Division Collegiate

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)?

Yes

Check which General Education requirement:

✓ **Mathematics**

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

Yes

Name of degree(s) and/or certificate(s): Computer Science AAS & Certificate

Are there prerequisites to this course?

Yes

Pre-reqs: CS-125H or equivalent experience

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?

Yes

Recommendations: CS-275

Requirements:

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

No

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: 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. describe the server-side request-response model for web development;
2. develop functional PHP scripts to;
a. collect and validate form data,
b. complete mathematical calculations,
c. manage cookies,
d. interact with server resources, including MySQL databases,
3. describe and implement a variety of debugging techniques;
4. compose MySQL statements to;
a. retrieve desired data from an existing database;
b. insert records into existing database,
c. update records in an existing database,
d. delete records from an existing database,
5. describe the security concerns surrounding database driven web applications and implement defensive strategies.

AAOT/ASOT GENERAL EDUCATION OUTCOMES

AAOT/ASOT GENERAL EDUCATION OUTCOMES

COURSE OUTLINE MAPPING CHART

Mark outcomes addressed by the course:

- Mark "C" if this course completely addresses the outcome. Students who successfully complete this course are likely to have attained this learning outcome.
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As a result of completing the AAOT/ASOT general education requirements, students will be able to:

WR: Writing Outcomes

1. Read actively, think critically, and write purposefully and capably for academic and, in some cases, professional audiences.

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1. Engage in ethical communication processes that accomplish goals.

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1. Apply analytical skills to social phenomena in order to understand human behavior.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.

SC: Science or Computer Science Outcomes

1. Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models, and solutions and generate further questions.

2. Apply scientific and technical modes of inquiry, individually, and collaboratively, to critically examine the influence of scientific and technical knowledge on human society and the environment.

3. Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment.

Outcomes Assessment Strategies:

:

Major Topic Outline:

1. The server-side request-response model.
2. Programming with PHP.
a. Where to add PHP to HTML pages.
b. Using server-side includes.
c. Using require and require-once.
3. PHP and calculations.
a. Variables.
b. Mathematical operators.
c. Mathematical functions.
d. Order of operations.
4. PHP and form data.
a. Collecting user input.
b. Data validation techniques.
5. PHP control structures.
a. Logical structures.
b. Looping structures.
c. Functions.
6. PHP and MySQL database connectivity.
a. Reading from the database.
b. Writing to the database.
c. Updating the database.
d. Deleting from the database.
7. Database security.
a. SQL injection attacks.
b. Sanitizing user input.
c. Permissions and roles.
d. Using stored procedures.

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.

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

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

How does it transfer? (Check all that apply)

:

Provide evidence of transferability: (minimum one, more preferred)

First term to be offered:

Next available term after approval

:

Clackamas Community College

Program Amendments

November 5, 2021

Program	Implementation
AS, Biological Engineering, OSU	2022/SU
AS, Chemical Engineering, OSU	2022/SU
AS, Civil Engineering, OSU	2022/SU
AS, Construction Engineering Management, OSU	2022/SU
AS, Ecological Engineering, OSU	2022/SU
AS, Electrical Engineering, OSU	2022/SU
AS, Energy Systems Engineering, OSU	2022/SU
AS, Environmental Engineering, OSU	2022/SU
AS, Industrial/Manufacturing Engineering, OSU	2022/SU
AS, Mechanical Engineering, OSU	2022/SU

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
Salem, OR 97310-0203

Office of Educational Improvement & Innovation
Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE ASSOCIATE OF SCIENCE AREA OF EMPHASIS AMENDMENT FORM

This form should be completed electronically and the boxes will expand to accommodate text.

College:	Clackamas Community College	Date	

CAREER LEARNING AREA	
☐ Ag, Food & Natural Resource Systems	☐ Health Services
☐ Arts, Information & Communications	☐ Human Resources
☐ Business & Management	√ Industrial & Engineering Systems

PROGRAM INFORMATION

APPROVED Program Title	***APPROVED*** CIP Code (Include 7th & 8th digits used for OCCURS reporting.)			***APPROVED*** Recognition Award	Current Credits
	6-digit CIP	*7th digit*	*8th digit*		
AS Area of Emphasis Title: **Engineering – Biological Engineering** AS.OSUBIOLENGR				**Associate of Applied Science Area of Emphasis**	**107**
Partnering Institution Name **Oregon State University**					

Last amendment approved on 01.29.21

TYPE OF PROGRAM AMENDMENT

(Check **ALL** That Apply)

☐ **New Agreement**	☐ **Curriculum Revision**	☐ **Revision in Program Credits**	
		***Proposed* Total Credits:**	
☐ ***SUSPENSION* of Program**	*Reason for Suspension:*		
Suspension Effective Date:			

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				***PROPOSED CURRICULUM 22-23*** [List only course(s) to be amended]			
Course Number	**Course Title**	**Clock Hours**	**Credits**	**Course Number**	**Course Title**	**Clock Hours**	**Credits**
Program Requirements – 1st Year							
Fall Term							
COMM-111	Public Speaking	44	4				
ENGR-111	Introduction to Engineering	33	3				
MTH-251	Calculus I	55	5				
WR-121	English Composition	44	4				
Winter Term							
BI-204	Elementary Microbiology	66	4				
CH-221	General Chemistry	77	5				
ENGR-112	Engineering Programming	33	3				
MTH-252	Calculus II	55	5				
Spring Term							
CH-222	General Chemistry	77	5				
MTH-254	Vector Calculus	55	5				
WR-227	Technical Report Writing	44	4				
Summer Term							
CH-223	General Chemistry	77	5				
MTH-256	Differential Equations	44	4				
--	Social Process elective		4				
Program Requirements – 2nd Year							
Fall Term							
CH-241	Organic Chemistry I	77	5				
ENGR-211	Statics	44	4				
PH-211	General Physics with Calculus	77	5				
Winter Term							
CH-242	Organic Chemistry II	77	5				
MTH-253	Calculus III	55	5				
PH-212	General Physics with Calculus	77	5				
Spring Term							
CH-243	Organic Chemistry III	77	5				
ENGR-201	Electrical Fundamentals	66	4				
PH-213	General Physics with Calculus	77	5				
--	Western Culture elective		4				
Social Processes Elective							
ANT-103; **EC**-201, 202; **HST**-101, 102, 103; **PS**-201, 204, 205, 225; **PSY**-110, 200, 205, 219, 231; **SOC**-204, 205, 206;				PSY-110 scheduled for inactivation 06.30.22			
Western Culture Elective							
ART-204, 205, 206; **ENG**-107, 108, 109, 201, 202, 204, 205, 250, 251, 253, 254, 255; **GEO**-208; **HST**-101, 102, 103, 132, 201, 202, 203; **PHL**-102; **R**-204;							
Optional: While not required for the A.S. degree, students may complete additional coursework at CCC that will meet requirements for the Bachelor of Science degree at Oregon State University. The Bachelor of Science degree requires the completion of one course from each category below.							

Cultural Diversity Elective	
ANT-231, 232; **ENG**-213, 252; **R-**101, 102, 103, 210;	**ANT**-~~231~~, 232; **ENG**-213, 252; **GEO-**110; **R-**101, 102, 103, 210;
Literature and the Arts Elective	
ART-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;	**ART**-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 226, 230, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;
Difference, Power, and Discrimination Elective	
HST-201, 202, 203; **SOC**-225	
Physical Education Elective	
HPE-295	

TOTAL *CURRENT* CREDITS:	107	**TOTAL *PROPOSED* CREDITS:**	
College Contact		**Telephone No.**	
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* CTE Dean Signature		**Date**	**10/19/21**

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
Salem, OR 97310-0203

Office of Educational Improvement & Innovation
Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE ASSOCIATE OF SCIENCE AREA OF EMPHASIS AMENDMENT FORM

This form should be completed electronically and the boxes will expand to accommodate text.

College:	Clackamas Community College	Date	

CAREER LEARNING AREA	
☐ Ag, Food & Natural Resource Systems	☐ Health Services
☐ Arts, Information & Communications	☐ Human Resources
☐ Business & Management	√ Industrial & Engineering Systems

PROGRAM INFORMATION

APPROVED Program Title	***APPROVED*** CIP Code (Include 7th & 8th digits used for OCCURS reporting.)			***APPROVED*** Recognition Award	Current Credits
	6-digit CIP	*7th digit*	*8th digit*		
AS Area of Emphasis Title: **Engineering – Chemical Engineering** AS.OSUCHEMENGR				**Associate of Applied Science Area of Emphasis**	**103**
Partnering Institution Name **Oregon State University**					

Last amendment approved on 01.29.21

TYPE OF PROGRAM AMENDMENT

(Check **ALL** That Apply)

☐ **New Agreement**	☐ **Curriculum Revision**	☐ **Revision in Program Credits**	
		***Proposed* Total Credits:**	
☐ ***SUSPENSION* of Program**	*Reason for Suspension:*		
Suspension Effective Date:			

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				***PROPOSED CURRICULUM 22-23*** [List only course(s) to be amended]			
Course	**Title**	**Hours**	**Credits**	**Course**	**Title**	**Hours**	**Credits**
Program Requirements – 1st Year							
Fall Term							
COMM-111	Public Speaking	44	4				
ENGR-111	Introduction to Engineering	33	3				
MTH-251	Calculus I	55	5				
WR-121	English Composition	44	4				
Winter Term							
CH-221	General Chemistry	77	5				
ENGR-112	Engineering Programming	33	3				
MTH-252	Calculus II	55	5				
WR-227	Technical Report Writing	44	4				
Spring Term							
CH-222	General Chemistry	77	5				
MTH-254	Vector Calculus	55	5				
--	Social Processes elective		4				
Summer Term							
CH-223	General Chemistry	77	5				
MTH-256	Differential Equations	44	4				
Program Requirements – 2nd Year							
Fall Term							
CH-241	Organic Chemistry I	77	5				
ENGR-211	Statics	44	4				
PH-211	General Physics with Calculus	77	5				
Winter Term							
CH-242	Organic Chemistry II	77	5				
MTH-253	Calculus III	55	5				
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CH-243	Organic Chemistry III	77	5				
ENGR-201	Electrical Fundamentals	66	4				
PH-213	General Physics with Calculus	77	5				
--	Western Culture elective		4				
Social Processes Elective							
ANT-103; **EC**-201, 202; **HST**-101, 102, 103; **PS**-201, 204, 205, 225; **PSY**-110, 200, 205, 219, 231; **SOC**-204, 205, 206;				PSY-110 scheduled for inactivation 06.30.22			
Western Culture Elective							
ART-204, 205, 206; **ENG**-107, 108, 109, 201, 202, 204, 205, 250, 251, 253, 254, 255; **GEO**-208; **HST**-101, 102, 103, 132, 201, 202, 203; **PHL**-102; **R**-204;							
Optional: While not required for the A.S. degree, students may complete additional coursework at CCC that will meet requirements for the Bachelor of Science degree at Oregon State University. The Bachelor of Science degree requires the completion of one course from each category below.							
Cultural Diversity Elective							

ANT-231, 232; **ENG**-213, 252; **R**-101, 102, 103, 210;	**ANT**-~~231~~, 232; **ENG**-213, 252; **GEO**-110; **R-**101, 102, 103, 210;
Literature and the Arts Elective	
ART-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;	**ART**-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 226, 230, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;
Difference, Power, and Discrimination Elective	
HST-201, 202, 203; **SOC**-225;	
Biological Science Elective	
BI-101, 102, 103, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;	**BI**-101, 102, 103, 165CL, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;
Physical Education Elective	
HPE-295;	

TOTAL *CURRENT* CREDITS:	103	**TOTAL *PROPOSED* CREDITS:**	
College Contact		**Telephone No.**	
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* CTE Dean Signature		**Date**	**10/19/21**

Oregon Department of Community Colleges and Workforce Development
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COMMUNITY COLLEGE ASSOCIATE OF SCIENCE AREA OF EMPHASIS AMENDMENT FORM

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College:	Clackamas Community College	Date	

CAREER LEARNING AREA	
☐ Ag, Food & Natural Resource Systems	☐ Health Services
☐ Arts, Information & Communications	☐ Human Resources
☐ Business & Management	√ Industrial & Engineering Systems

PROGRAM INFORMATION

APPROVED Program Title	***APPROVED*** CIP Code (Include 7th & 8th digits used for OCCURS reporting.)			***APPROVED*** Recognition Award	Current Credits
	6-digit CIP	*7th digit*	*8th digit*		
AS Area of Emphasis Title: **Engineering – Civil Engineering** AS.OSUCIVILENGR				**Associate of Applied Science Area of Emphasis**	**97**
Partnering Institution Name **Oregon State University**					

Last amendment approved on 01.15.21

TYPE OF PROGRAM AMENDMENT

(Check **ALL** That Apply)

☐ **New Agreement**	☐ **Curriculum Revision**	☐ **Revision in Program Credits**	
		***Proposed* Total Credits:**	
☐ ***SUSPENSION* of Program**	*Reason for Suspension:*		
Suspension Effective Date:			

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				***PROPOSED CURRICULUM 22-23*** [List only course(s) to be amended]			
Course	**Title**	**Hours**	**Credits**	**Course**	**Title**	**Hours**	**Credits**
Program Requirements – 1st Year							
Fall Term							
CH-221	General Chemistry	77	5				
ENGR-111	Introduction to Engineering	33	3				
MTH-251	Calculus I	55	5				
WR-121	English Composition	44	4				
Winter Term							
CDT-103	Computer-Aided Drafting I	66	3				
CH-222	General Chemistry	77	5				
ENGR-112	Engineering Programming	33	3				
MTH-252	Calculus II	55	5				
Spring Term							
COMM-111	Public Speaking	44	4				
EC-201	Principles of Economics: MICRO	44	4				
MTH-254	Vector Calculus	55	5				
WR-227	Technical Report Writing	44	4				
Summer Term							
GIS-201	Introduction to Geographic Information Systems	66	3				
MTH-256	Differential Equations	44	4				
Program Requirements – 2nd Year							
Fall Term							
ENGR-211	Statics	44	4				
PH-211	General Physics with Calculus	77	5				
--	Western Culture elective		4				
Winter Term							
ENGR-212	Dynamics	44	4				
MTH-253	Calculus III	55	5				
PH-212	General Physics with Calculus	77	5				
Spring Term							
ENGR-201	Electrical Fundamentals	66	4				
ENGR-213	Strength of Materials	44	4				
PH-213	General Physics with Calculus	77	5				
Western Culture Elective							
ART-204, 205, 206; **ENG**-107, 108, 109, 201, 202, 204, 205, 250, 251, 253, 254, 255; **GEO**-208; **HST**-101, 102, 103, 132, 201, 202, 203; **PHL**-102; **R**-204;							
Optional: While not required for the A.S. degree, students may complete additional coursework at CCC that will meet requirements for the Bachelor of Science degree at Oregon State University. The Bachelor of Science degree requires the completion of one course from each category below.							
Cultural Diversity Elective							
ANT-231, 232; **ENG**-213, 252; **R**-101, 102, 103, 210;				**ANT**-~~231~~, 232; **ENG**-213, 252; **GEO**-110; **R**-101, 102, 103, 210;			
Literature and the Arts Elective							

ART-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;	**ART**-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 226, 230, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;
Difference, Power, and Discrimination Elective	
HST-201, 202, 203; **SOC**-225;	
Biological Science Elective	
BI-101, 102, 103, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;	**BI**-101, 102, 103, 165CL, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;

TOTAL *CURRENT* CREDITS:	97	**TOTAL *PROPOSED* CREDITS:**	
College Contact		**Telephone No.**	
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* CTE Dean Signature		**Date**	**10/19/21**

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
Salem, OR 97310-0203

Office of Educational Improvement & Innovation
Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE ASSOCIATE OF SCIENCE AREA OF EMPHASIS AMENDMENT FORM

This form should be completed electronically and the boxes will expand to accommodate text.

College:	Clackamas Community College	Date	

CAREER LEARNING AREA	
☐ Ag, Food & Natural Resource Systems	☐ Health Services
☐ Arts, Information & Communications	☐ Human Resources
☐ Business & Management	√ Industrial & Engineering Systems

PROGRAM INFORMATION

APPROVED Program Title	***APPROVED*** CIP Code (Include 7th & 8th digits used for OCCURS reporting.)			***APPROVED*** Recognition Award	Current Credits
	6-digit CIP	*7th digit*	*8th digit*		
AS Area of Emphasis Title: Engineering – Construction Engineering Management AS.OSUCONENRMGT				Associate of Applied Science Area of Emphasis	91-93
Partnering Institution Name Oregon State University					

Elective credits changed during catalog edits, NOT APPROVED

Last amendment approved on 01.29.21

TYPE OF PROGRAM AMENDMENT

(Check **ALL** That Apply)

☐ New Agreement	☐ Curriculum Revision	☐ Revision in Program Credits	
		Proposed Total Credits:	
☐ ***SUSPENSION*** of Program	*Reason for Suspension:*		
Suspension Effective Date:			

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				***PROPOSED CURRICULUM 22-23*** [List only course(s) to be amended]			
Course Number	**Course Title**	**Clock Hours**	**Credits**	**Course Number**	**Course Title**	**Clock Hours**	**Credits**
Program Requirements – 1st Year							
Fall Term							
CH-221	General Chemistry	77	5				
ENGR-111	Introduction to Engineering	33	3				
MTH-251	Calculus I	55	5				
WR-121	English Composition	44	4				
Winter Term							
BA-226	Business Law I	44	4				
CDT-103	Computer-Aided Drafting I	66	3				
ENGR-112	Engineering Programming	33	3				
MTH-252	Calculus II	55	5				
Spring Term							
EC-201	Principles of Economics: MICRO	44	4				
EC-202	Principles of Economics: MACRO	44	4				
— —	Biological Science elective		4-5				
— —	Literature and the Arts elective		3-4				
Program Requirements – 2nd Year							
Fall Term							
ENGR-211	Statics	44	4				
HPE-295	Health & Fitness for Life	60	3				
PH-211	General Physics with Calculus	77	5				
Winter Term							
BA-215	Fundamentals of Accounting (online through OSU)		4				
PH-212	General Physics with Calculus	77	5				
PHL-102	Ethics	44	4				
— —	Cultural Diversity elective		4				
Spring Term							
COMM-111	Public Speaking	44	4				
ENGR-213	Strength of Materials	44	4				
ENGR-390	Engineering Economy (online through OSU)		3				
WR-227	Technical Report Writing	44	4				
Cultural Diversity Elective							
ANT-231, 232; **ENG**-213, 252; **R**-101, 102, 103, 210;				**ANT**-~~231~~, 232; **ENG**-213, 252; **GEO**-110; **R**-101, 102, 103, 210;			
Literature and the Arts Elective							
ART-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;				**ART**-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 226, 230, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;			
Biological Science Elective							
BI-101, 102, 103, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;				**BI**-101, 102, 103, 165CL, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;			
Catalog Notes							

Optional: While not required for the AS degree, students may complete additional coursework at CCC that will meet requirements for the Bachelor of Science degree at Oregon State University. The Bachelor of Science degree requires the completion of one course from the category below.					
Difference, Power, and Discrimination Elective					
HST-201**,** 202**,** 203; **SOC-**225**;**					
TOTAL *CURRENT* CREDITS:	91-93	**TOTAL *PROPOSED* CREDITS:**			
College Contact		**Telephone No.**			
E-Mail Address		**Fax No.**			
Chief Academic Officer *or* CTE Dean Signature			**Date**	**10/19/21**	

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
Salem, OR 97310-0203

Office of Educational Improvement & Innovation
Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE ASSOCIATE OF SCIENCE AREA OF EMPHASIS AMENDMENT FORM

This form should be completed electronically and the boxes will expand to accommodate text.

College:	**Clackamas Community College**	**Date**	

CAREER LEARNING AREA	
☐ **Ag, Food & Natural Resource Systems**	☐ **Health Services**
☐ **Arts, Information & Communications**	☐ **Human Resources**
☐ **Business & Management**	√ **Industrial & Engineering Systems**

PROGRAM INFORMATION

APPROVED **Program Title**	***APPROVED*** **CIP Code** (Include 7th & 8th digits used for OCCURS reporting.)			***APPROVED*** **Recognition Award**	**Current Credits**
	6-digit CIP	*7th digit*	*8th digit*		
AS Area of Emphasis Title: **Engineering – Ecological Engineering** AS.OSUECOLENGR				**Associate of Applied Science Area of Emphasis**	**102-103**
Partnering Institution Name **Oregon State University**					

Last amendment approved on 01.29.21

TYPE OF PROGRAM AMENDMENT
(Check **ALL** That Apply)

☐ **New Agreement**	☐ **Curriculum Revision**	☐ **Revision in Program Credits**
		Proposed **Total Credits:**
☐ ***SUSPENSION*** **of Program**	*Reason for Suspension:*	
Suspension Effective Date:		

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				***PROPOSED CURRICULUM 22-23*** [List only course(s) to be amended]			
Course	**Title**	**Hours**	**Credits**	**Course**	**Title**	**Hours**	**Credits**
Program Requirements – 1st Year							
Fall Term							
COMM-111	Public Speaking	44	4				
ENGR-111	Introduction to Engineering	33	3				
MTH-251	Calculus I	55	5				
WR-121	English Composition	44	4				
Winter Term							
CH-221	General Chemistry	77	5				
ENGR-112	Engineering Programming	33	3				
MTH-252	Calculus II	55	5				
--	Literature and the Arts Elective		3-4				
Spring Term							
CH-222	General Chemistry	77	5				
MTH-254	Vector Calculus	55	5				
WR-227	Technical Report Writing	44	4				
Summer Term							
CH-223	General Chemistry	77	5				
MTH-256	Differential Equations	44	4				
Program Requirements – 2nd Year							
Fall Term							
BI-211	General Biology for Science Majors (Cellular Biology)	77	5				
ENGR-211	Statics	44	4				
PH-211	General Physics with Calculus	77	5				
Winter Term							
BI-212	General Biology for Science Majors (Animal Biology)	77	5				
MTH-253	Calculus III	55	5				
PH-212	General Physics with Calculus	77	5				
Spring Term							
BI-213	General Biology for Science Majors (Plant Biology & Ecology)	77	5				
ENGR-213	Strength of Materials	44	4				
PH-213	General Physics with Calculus	77	5				
--	Western Culture elective		4				
Western Culture Elective							
ART-204, 205, 206; **ENG**-107, 108, 109, 201, 202, 204, 205, 250, 251, 253, 254, 255; **GEO**-208; **HST**-101, 102, 103, 201, 202, 203; **PHL**-102; **R**-204;							
Optional: While not required for the A.S. degree, students may complete additional coursework at CCC that will meet requirements for the Bachelor of Science Degree at Oregon State University. The Bachelor of Science degree requires the completion of one course from each category below							
Cultural Diversity Elective							
ANT-231, 232; **ENG**-213, 252; **R**-101, 102, 103, 210;				**ANT**-~~231~~, 232; **ENG**-213, 252; **GEO**-110;			

		R-101, 102, 103, 210;	
Literature and the Arts Elective			
ART-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;		**ART**-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 226, 230, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;	
Difference, Power, and Discrimination Elective			
HST-201, 202, 203; **SOC**-225;			
Physical Education Elective			
HPE-295;			
TOTAL *CURRENT* CREDITS:	102-103	**TOTAL *PROPOSED* CREDITS:**	
College Contact		**Telephone No.**	
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* CTE Dean Signature		**Date**	**10/19/21**

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
Salem, OR 97310-0203

Office of Educational Improvement & Innovation
Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE ASSOCIATE OF SCIENCE AREA OF EMPHASIS AMENDMENT FORM

This form should be completed electronically and the boxes will expand to accommodate text.

College:	Clackamas Community College	Date	

CAREER LEARNING AREA	
☐ Ag, Food & Natural Resource Systems	☐ Health Services
☐ Arts, Information & Communications	☐ Human Resources
☐ Business & Management	√ Industrial & Engineering Systems

PROGRAM INFORMATION

APPROVED Program Title	***APPROVED*** CIP Code (Include 7th & 8th digits used for OCCURS reporting.)			***APPROVED*** Recognition Award	Current Credits
	6-digit CIP	*7th digit*	*8th digit*		
AS Area of Emphasis Title: **Engineering – Electrical Engineering** AS.OSUELCOMPENGR				**Associate of Applied Science Area of Emphasis**	**102**
Partnering Institution Name **Oregon State University**					

Last amendment approved on 01.29.21

TYPE OF PROGRAM AMENDMENT

(Check **ALL** That Apply)

☐ **New Agreement**	☐ **Curriculum Revision**	☐ **Revision in Program Credits**	
		***Proposed* Total Credits:**	
☐ ***SUSPENSION* of Program**	*Reason for Suspension:*		
Suspension Effective Date:			

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				***PROPOSED CURRICULUM 22-23*** [List only course(s) to be amended]			
Course	**Title**	**Hours**	**Credits**	**Course**	**\ Title**	**Hours**	**Credits**
Program Requirements – First Year							
Fall Term							
CS-161	Computer Science I	44	4				
ENGR-111	Introduction to Engineering	33	3				
MTH-251	Calculus I	55	5				
WR-121	English Composition	44	4				
Winter Term							
CH-221	General Chemistry	77	5				
CS-162	Computer Science II	44	4				
ENGR-112	Engineering Programming	33	3				
MTH-252	Calculus II	55	5				
Spring Term							
CS-260	Data Structures	44	4				
MTH-253	Calculus III	55	5				
WR-227	Technical Report Writing	44	4				
--	Social Processes elective		4				
Summer Term							
COMM-111	Public Speaking	44	4				
MTH-256	Differential Equations	44	4				
Program Requirements – Second Year							
Fall Term							
ENGR-221	Electrical Circuit Analysis I	33	4				
MTH-254	Vector Calculus	55	5				
PH-211	General Physics with Calculus	77	5				
Winter Term							
ENGR-171	Digital Logic	66	4				
ENGR-222	Electrical Circuit Analysis II	66	4				
MTH-231	Elements of Discrete Mathematics	44	4				
PH-212	General Physics with Calculus	77	5				
Spring Term							
ENGR-223	Electrical Circuit Analysis III	66	4				
PH-213	General Physics with Calculus	77	5				
--	Western Culture elective		4				
Social Processes Elective							
ANT-103; **EC-**201, 202; **HST-**101, 102, 103; **PS**-201, 204, 205, 225; **PSY**-110, 200, 205, 219, 231; **SOC**-204, 205, 206;				PSY-110 scheduled for inactivation 06.30.22			
Western Culture Elective							
ART-204, 205, 206; **ENG**-107, 108, 109, 201, 202, 204, 205, 250, 251, 253, 254, 255; **GEO**-208; **HST-**101, 102, 103, 132, 201, 202, 203; **PHL**-102; **R-**204;							
Optional: While not required for the A.S. degree, students may complete additional coursework at CCC that will meet requirements for the Bachelor of Science degree at Oregon State							

University. The Bachelor of Science degree requires the completion of one course from each category below	
Cultural Diversity Elective	
ANT-231, 232; **ENG**-213, 252; **R**-101, 102, 103, 210;	**ANT**-~~231~~, 232; **ENG**-213, 252; **GEO**-110; **R**-101, 102, 103, 210;
Literature and the Arts Elective	
ART-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 250, 251, 252, 253, 254, 255, 260; **MUS**-105, 205, 206;	**ART**-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 226, 230, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;
Difference, Power, and Discrimination Elective	
HST-201, 202, 203; **SOC**-225;	
Biological Science Elective	
BI-101, 102, 103, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;	**BI**-101, 102, 103, 165CL, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;
Physical Education Elective	
HPE-295;	

TOTAL *CURRENT* CREDITS:	102	**TOTAL *PROPOSED* CREDITS:**	
College Contact		**Telephone No.**	
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* CTE Dean Signature		**Date**	**10/19/21**

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
Salem, OR 97310-0203

Office of Educational Improvement & Innovation
Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE ASSOCIATE OF SCIENCE AREA OF EMPHASIS AMENDMENT FORM

This form should be completed electronically and the boxes will expand to accommodate text.

College:	Clackamas Community College	Date	

CAREER LEARNING AREA	
☐ Ag, Food & Natural Resource Systems	☐ Health Services
☐ Arts, Information & Communications	☐ Human Resources
☐ Business & Management	√ Industrial & Engineering Systems

PROGRAM INFORMATION

APPROVED Program Title	***APPROVED*** CIP Code (Include 7th & 8th digits used for OCCURS reporting.)			***APPROVED*** Recognition Award	Current Credits
	6-digit CIP	*7th digit*	*8th digit*		
AS Area of Emphasis Title: **Engineering – Energy Systems Engineering** AS.OSUENERGYSYS				**Associate of Applied Science Area of Emphasis**	**96-98**
Partnering Institution Name **Oregon State University**					

Last amendment approved on 01.29.21

TYPE OF PROGRAM AMENDMENT

(Check **ALL** That Apply)

☐ **New Agreement**	☐ **Curriculum Revision**	☐ **Revision in Program Credits**	
		Proposed **Total Credits:**	
☐ ***SUSPENSION*** **of Program**	*Reason for Suspension:*		
Suspension Effective Date:			

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				***PROPOSED CURRICULUM 22-23*** [List only course(s) to be amended]			
Course	**Title**	**Hours**	**Credits**	**Course**	**Title**	**Hours**	**Credits**
Program Requirements – First Year							
Fall Term							
CH-221	General Chemistry	77	5				
ENGR-111	Introduction to Engineering	33	3				
MTH-251	Calculus I	55	5				
WR-121	English Composition	44	4				
Winter Term							
CH-222	General Chemistry	77	5				
ENGR-112	Engineering Programming	33	3				
MTH-252	Calculus II	55	5				
Spring Term							
COMM-111	Public Speaking	44	4				
EC-201	Principles of Economics: MICRO	44	4				
MTH-254	Vector Calculus	55	5				
WR-227	Technical Report Writing	44	4				
Summer Term							
MTH-256	Differential Equations	44	4				
Program Requirements – Second Year							
Fall Term							
BA-211	Financial Accounting	44	4				
ENGR-211	Statics	44	4				
ENGR-221	Electrical Circuit Analysis I	33	4				
PH-211	General Physics with Calculus	77	5				
Winter Term							
ENGR-212	Dynamics	44	4				
ENGR-222	Electrical Circuit Analysis II	66	4				
PH-212	General Physics with Calculus	77	5				
Spring Term							
PH-213	General Physics with Calculus	77	5				
--	Engineering elective		3-4				
--	Literature and the Arts Elective		3-4				
--	Western Culture elective		4				
Engineering Elective							
ENGR-115, 213, 223;							
Western Culture Elective							
ART-204, 205, 206; **ENG**-107, 108, 109, 201, 202, 204, 205, 250, 251, 253, 254, 255; **GEO**-208; **HST**-101, 102, 103, 132, 201, 202, 203; **PHL**-102; **R**-204;							
Literature and the Arts Elective							
ART-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;				**ART**-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 226, 230, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;			
Optional: While not required for the A.S. degree, students may complete additional coursework at CCC that will meet requirements for the Bachelor of Science degree at Oregon State							

University. The Bachelor of Science degree requires the completion of one course from each category below.	
Cultural Diversity Elective	
ANT-231, 232; **ENG**-213, 252; **R**-101, 102, 103, 210;	**ANT**-~~231~~, 232; **ENG**-213, 252; **GEO**-110; **R-**101, 102, 103, 210;
Difference, Power, and Discrimination Elective	
HST-201, 202, 203; **SOC**-225;	
Biological Science Elective	
BI-101, 102, 103, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;	**BI**-101, 102, 103, 165CL, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;
Physical Education Elective	
HPE-295;	

TOTAL *CURRENT* CREDITS:	96-98	**TOTAL *PROPOSED* CREDITS:**	
College Contact	Eric Lee	**Telephone No.**	X6163
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* CTE Dean Signature		**Date**	**10/19/21**

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
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Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE ASSOCIATE OF SCIENCE AREA OF EMPHASIS AMENDMENT FORM

This form should be completed electronically and the boxes will expand to accommodate text.

College:	Clackamas Community College	Date	

CAREER LEARNING AREA	
☐ Ag, Food & Natural Resource Systems	☐ Health Services
☐ Arts, Information & Communications	☐ Human Resources
☐ Business & Management	√ Industrial & Engineering Systems

PROGRAM INFORMATION

APPROVED Program Title	***APPROVED*** CIP Code (Include 7th & 8th digits used for OCCURS reporting.)			***APPROVED*** Recognition Award	Current Credits
	6-digit CIP	*7th digit*	*8th digit*		
AS Area of Emphasis Title: Engineering – Environmental Engineering AS.OSUENVIRENGR				**Associate of Applied Science Area of Emphasis**	**110**
Partnering Institution Name Oregon State University					

Last amendment approved on 01.29.21

TYPE OF PROGRAM AMENDMENT

(Check **ALL** That Apply)

☐ **New Agreement**	☐ **Curriculum Revision**	☐ **Revision in Program Credits**	
		***Proposed* Total Credits:**	
☐ ***SUSPENSION* of Program**	*Reason for Suspension:*		
Suspension Effective Date:			

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				***PROPOSED CURRICULUM 22-23*** [List only course(s) to be amended]			
Course	**Title**	**Hours**	**Credits**	**Course**	**Title**	**Hours**	**Credits**
Program Requirements – First Year							
Fall Term							
ENGR-111	Introduction to Engineering	33	3				
MTH-251	Calculus I	55	5				
WR-121	English Composition	44	4				
--	Social Processes elective		4				
Winter Term							
CH-221	General Chemistry	77	5				
ENGR-112	Engineering Programming	33	3				
MTH-252	Calculus II	55	5				
WR-227	Technical Report Writing	44	4				
Spring Term							
CH-222	General Chemistry	77	5				
ENGR-115	Engineering Graphics	33	3				
MTH-254	Vector Calculus	55	5				
--	Western Culture elective		4				
Summer Term							
CH-223	General Chemistry	77	5				
COMM-111	Public Speaking	44	4				
MTH-256	Differential Equations	44	4				
Program Requirements – Second Year							
Fall Term							
CH-241	Organic Chemistry I	77	5				
ENGR-211	Statics	44	4				
PH-211	General Physics with Calculus	77	5				
Winter Term							
CH-242	Organic Chemistry II	77	5				
ENGR-212	Dynamics	44	4				
PH-212	General Physics with Calculus	77	5				
Spring Term							
CH-243	Organic Chemistry III	77	5				
ENGR-213	Strength of Materials	44	4				
MTH-253	Calculus III	55	5				
PH-213	General Physics with Calculus	77	5				
Social Processes Elective							
ANT-103; **EC**-201, 202; **HST**-101, 102, 103; **PS**-201, 204, 205, 225; **PSY**-110, 200, 205, 219, 231; **SOC**-204, 205, 206;				PSY-110 scheduled for inactivation 06.30.22			
Western Culture Elective							
ART-204, 205, 206; **ENG**-107, 108, 109, 201, 202, 204, 205, 250, 251, 253, 254, 255; **GEO**-208; **HST**-101, 102, 103, 132, 201, 202, 203; **PHL**-102; **R**-204;							
Optional: While not required for the A.S. degree, students may complete additional coursework at CCC that will meet requirements for the Bachelor of Science degree at Oregon State							

University. The Bachelor of Science degree requires the completion of one course from each category below.	
Cultural Diversity Elective	
ANT-231, 232; **ENG**-213, 252; **R**-101, 102, 103, 210;	**ANT**-~~231~~, 232; **ENG**-213, 252; **GEO**-110; **R-**101, 102, 103, 210;
Literature and the Arts Elective	
ART-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 250, 251, 252, 253, 254, 255, 260; **MUS**-105, 205, 206;	**ART**-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 226, 230, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;
Difference, Power, and Discrimination Elective	
HST-201, 202, 203; **SOC**-225;	
Biological Science Elective	
BI-101, 102, 103, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;	**BI**-101, 102, 103, 165CL, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;
Physical Education Elective	
HPE-295;	

TOTAL *CURRENT* CREDITS:	110	**TOTAL *PROPOSED* CREDITS:**	
College Contact		**Telephone No.**	
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* CTE Dean Signature		**Date**	**10/19/21**

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
Salem, OR 97310-0203

Office of Educational Improvement & Innovation
Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE ASSOCIATE OF SCIENCE AREA OF EMPHASIS AMENDMENT FORM

This form should be completed electronically and the boxes will expand to accommodate text.

College:	Clackamas Community College	Date	

CAREER LEARNING AREA	
☐ Ag, Food & Natural Resource Systems	☐ Health Services
☐ Arts, Information & Communications	☐ Human Resources
☐ Business & Management	√ Industrial & Engineering Systems

PROGRAM INFORMATION

APPROVED Program Title	***APPROVED*** CIP Code (Include 7th & 8th digits used for OCCURS reporting.)			***APPROVED*** Recognition Award	Current Credits
	6-digit CIP	*7th digit*	*8th digit*		
AS Area of Emphasis Title: Engineering – Industrial/Manufacturing AS.OSUINDMFGENG				**Associate of Applied Science Area of Emphasis**	**92-93**
Partnering Institution Name Oregon State University					

Last amendment approved on 01.29.21

TYPE OF PROGRAM AMENDMENT

(Check **ALL** That Apply)

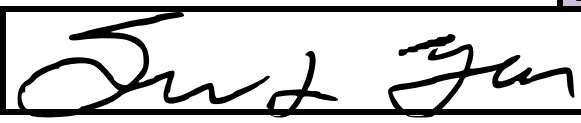
☐ **New Agreement**	☐ **Curriculum Revision**	☐ **Revision in Program Credits**	
		***Proposed* Total Credits:**	
☐ ***SUSPENSION* of Program**	*Reason for Suspension:*		
Suspension Effective Date:			

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				***PROPOSED CURRICULUM 22-23*** [List only course(s) to be amended]			
Course	**Title**	**Hours**	**Credits**	**Course**	**Title**	**Hours**	**Credits**
Program Requirements – First Year							
Fall Term							
COMM-111	Public Speaking	44	4				
ENGR-111	Introduction to Engineering	33	3				
MTH-251	Calculus I	55	5				
WR-121	English Composition	44	4				
Winter Term							
CH-221	General Chemistry	77	5				
ENGR-112	Engineering Programming	33	3				
MTH-252	Calculus II	55	5				
Spring Term							
CH-222	General Chemistry	77	5				
ENGR-115	Engineering Graphics	33	3				
MTH-254	Vector Calculus	55	5				
WR-227	Technical Report Writing	44	4				
Summer Term							
MTH-256	Differential Equations	44	4				
--	Social Processes elective		4				
Program Requirements – Second Year							
Fall Term							
ENGR-211	Statics	44	4				
PH-211	General Physics with Calculus	77	5				
--	Western Culture elective		4				
Winter Term							
ENGR-212	Dynamics	44	4				
PH-212	General Physics with Calculus	77	5				
--	Literature and the Arts Elective		3-4				
Spring Term							
ENGR-201	Electrical Fundamentals	66	4				
ENGR-213	Strength of Materials	44	4				
PH-213	General Physics with Calculus	77	5				
Social Processes Elective							
ANT-103; **EC**-201, 202; **HST**-101, 102, 103; **PS**-201, 204, 205, 225; **PSY**-110, 200, 205, 219, 231; **SOC**-204, 205, 206;				PSY-110 scheduled for inactivation 06.30.22			
Western Culture Elective							
ART-204, 205, 206; **ENG**-107, 108, 109, 201, 202, 204, 205, 250, 251, 253, 254, 255; **GEO**-208; **HST**-101, 102, 103, 132, 201, 202, 203; **PHL**-102; **R**-204;							
Literature and the Arts Elective							
ART-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;				**ART**-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 226, 230, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;			
Optional: While not required for the A.S. degree, students may complete additional coursework at CCC that will meet							

requirements for the Bachelor of Science degree at Oregon State University. The Bachelor of Science degree requires the completion of one course from each category below.	
Cultural Diversity Elective	
ANT-231, 232; **ENG**-213, 252; **R**-101, 102, 103, 210;	**ANT**-~~231~~, 232; **ENG**-213, 252; **GEO**-110; **R**-101, 102, 103, 210;
Difference, Power, and Discrimination Elective	
HST-201, 202, 203; **SOC**-225;	
Biological Science Elective	
BI-101, 102, 103, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;	**BI**-101, 102, 103, 165CL, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;
Physical Education Elective	
HPE-295;	

TOTAL *CURRENT* CREDITS:	92-93	**TOTAL *PROPOSED* CREDITS:**	
College Contact	Eric Lee	**Telephone No.**	X6163
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* CTE Dean Signature		**Date**	**10/19/21**

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
Salem, OR 97310-0203

Office of Educational Improvement & Innovation
Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE ASSOCIATE OF SCIENCE AREA OF EMPHASIS AMENDMENT FORM

This form should be completed electronically and the boxes will expand to accommodate text.

College:	Clackamas Community College	Date	

CAREER LEARNING AREA	
☐ Ag, Food & Natural Resource Systems	☐ Health Services
☐ Arts, Information & Communications	☐ Human Resources
☐ Business & Management	√ Industrial & Engineering Systems

PROGRAM INFORMATION					
APPROVED **Program Title**	***APPROVED*** **CIP Code** (Include 7th & 8th digits used for OCCURS reporting.)			***APPROVED*** **Recognition Award**	**Current Credits**
	6-digit CIP	*7th digit*	*8th digit*		
AS Area of Emphasis Title: **Engineering – Mechanical Engineering** AS.OSUSMECHENGR				**Associate of Applied Science Area of Emphasis**	**96-97**
Partnering Institution Name **Oregon State University**					

Last amendment approved on 01.29.21

TYPE OF PROGRAM AMENDMENT (Check **ALL** That Apply)			
☐ New Agreement	☐ Curriculum Revision	☐ Revision in Program Credits	
		Proposed **Total Credits:**	
☐ ***SUSPENSION*** **of Program**	*Reason for Suspension:*		
Suspension Effective Date:			

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				***PROPOSED CURRICULUM 22-23*** [List only course(s) to be amended]			
Course	**Title**	**Hours**	**Credits**	**Course**	**Title**	**Hours**	**Credits**
Program Requirements – First Year							
Fall Term							
COMM-111	Public Speaking	44	4				
ENGR-111	Introduction to Engineering	33	3				
MTH-251	Calculus I	55	5				
WR-121	English Composition	44	4				
Winter Term							
CH-221	General Chemistry	77	5				
EC-201 Or EC-202	Principles of Economics: MICRO or Principles of Economics: MACRO	44	4				
ENGR-112	Engineering Programming	33	3				
MTH-252	Calculus II	55	5				
Spring Term							
CH-222	General Chemistry	77	5				
ENGR-115	Engineering Graphics	33	3				
MTH-254	Vector Calculus	55	5				
WR-227	Technical Report Writing	44	4				
Summer Term							
MTH-256	Differential Equations	44	4				
Program Requirements – Second Year							
Fall Term							
ENGR-211	Statics	44	4				
ENGR-221	Electrical Circuit Analysis I	33	4				
PH-211	General Physics with Calculus	77	5				
--	Western Culture elective		4				
Winter Term							
ENGR-212	Dynamics	44	4				
ENGR-222	Electrical Circuit Analysis II	66	4				
PH-212	General Physics with Calculus	77	5				
Spring Term							
ENGR-213	Strength of Materials	44	4				
PH-213	General Physics with Calculus	77	5				
--	Literature and the Arts Elective		3-4				
Western Culture Elective							
ART-204, 205, 206; **ENG**-107, 108, 109, 201, 202, 204, 205, 250, 251, 253, 254, 255; **GEO**-208; **HST**-101, 102, 103, 132, 201, 202, 203; **PHL**-102; **R**-204;							
Literature and the Arts Elective							
ART-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;				**ART**-101, 204, 205, 206; **ENG**-104, 105, 106, 107, 108, 109, 194, 195, 201, 202, 204, 205, 213, 226, 230, 241, 250, 251, 252, 253, 254, 255, 260, 270; **MUS**-105, 205, 206;			
Optional: While not required for the A.S. degree, students may complete additional coursework at CCC that will meet requirements for the Bachelor of Science degree at Oregon State							

University. The Bachelor of Science degree requires the completion of one course from each category below.	
Cultural Diversity Elective	
ANT-231, 232; **ENG**-213, 252; **R**-101, 102, 103, 210;	**ANT**-~~231~~, 232; **ENG**-213, 252; **GEO**-110; **R-**101, 102, 103, 210;
Difference, Power, and Discrimination Elective	
HST-201, 202, 203; **SOC**-225;	
Biological Science Elective	
BI-101, 102, 103, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;	**BI**-101, 102, 103, 165CL, 175, 176, 177, 204, 211, 212, 213, 234; **ESR**-171, 172, 173; **Z**-201, 202, 203;
Physical Education Elective	
HPE-295;	

TOTAL *CURRENT* CREDITS:	96-97	**TOTAL *PROPOSED* CREDITS:**	
College Contact	Eric Lee	**Telephone No.**	X6163
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* CTE Dean Signature		**Date**	**10/19/21**

Program Amendments

November 5, 2021

Program	Implementation
AS Biology OSU	2022/SU

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
Salem, OR 97310-0203

Office of Educational Improvement & Innovation
Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE ASSOCIATE OF SCIENCE AREA OF EMPHASIS AMENDMENT FORM

This form should be completed electronically and the boxes will expand to accommodate text.

College:	Clackamas Community College	Date	

CAREER LEARNING AREA	
☐ Ag, Food & Natural Resource Systems	☐ Health Services
☐ Arts, Information & Communications	☐ Human Resources
☐ Business & Management	☐ Industrial & Engineering Systems

PROGRAM INFORMATION

APPROVED Program Title	*APPROVED* CIP Code (Include 7th & 8th digits used for OCCURS reporting.)			*APPROVED* Recognition Award	Current Credits
	6-digit CIP	*7th digit*	*8th digit*		
AS Area of Emphasis Title: **Biology** AS.OSUBIOLOGY				**Associate of Applied Science Area of Emphasis**	**92**
Partnering Institution Name **Oregon State University**					

Last amendment approved on 01.29.21

TYPE OF PROGRAM AMENDMENT

(Check **ALL** That Apply)

☐ New Agreement	☐ Curriculum Revision	☐ Revision in Program Credits	
		Proposed Total Credits:	92-96
☐ *SUSPENSION* of Program	*Reason for Suspension:*		
Suspension Effective Date:			

CURRICULUM AMENDMENT

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved				***PROPOSED CURRICULUM 22-23*** [List only course(s) to be amended]			
Course	**Title**	**Hours**	**Credits**	**Course**	**Title**	**Hours**	**Credits**
Program Requirements – First Year							
Fall Term							
BI-211	General Biology for Science Majors (Cellular Biology)	77	5				
CH-221	General Chemistry	77	5				
PE-185	Physical Education	33	1				
WR-121	English Composition	44	4				
Winter Term							
BI-212	General Biology for Science Majors (Animal Biology)	77	5				
CH-222	General Chemistry	77	5				
MTH-251	Calculus I	55	5				
Spring Term							
BI-213	General Biology for Science Majors (Plant Biology & Ecology)	77	5				
COMM-111 or COMM-112 or COMM-218	Public Speaking or Persuasive Speaking or Interpersonal Communication	44	4				
CH-223	General Chemistry	77	5				
Program Requirements – Second Year							
Fall Term							
CH-241*	Organic Chemistry I	77	5				
PH-201 Or PH-211	General Physics or General Physics with Calculus	77	5				
WR-122 Or WR-227	English Composition or Technical Report Writing	44	4				
--	Core electives		3	--	Core electives		3-5
Winter Term							
CH-242*	Organic Chemistry II	77	5				
MTH-252	Calculus II	55	5				
PH-202 or PH-212	General Physics or General Physics with Calculus	77	5				
Spring Term							
CH-243*	Organic Chemistry III	77	5				
HPE-295	Health & Fitness for Life	60	3				
PH-203 or PH-213	General Physics or General Physics with Calculus	77	5				
--	Core electives		3	--	Core electives		3-5
*Organic Chemistry – satisfies degree requirement but does not transfer at 300 level credits unless students passes the ACS organic exam. OSU highly recommends taking the ACS organic exam. Transfers as a combination of CH-331, 332 & 337.							
Core Electives							
ANT-101, 102, 103, 231, 232; **ART**-101, 204, 205, 206;				ANT-231, PSY-110 scheduled for inactivation 06.30.22			

ASC-175, 176, 177; **BI**-101, 102, 103, 175, 176, 177, 204, 211, 212, 213, 234; **CH**-104, 105, 114, 221, 222, 223; **EC**-201, 202; **ENG**-104, 105, 106, 107, 108, 109, 194, 201, 202, 204, 205, 213, 240, 241, 250, 251, 252, 253, 254, 255; **ESR**-171, 172, 173; **G**-101, 102, 103, 201, 202, 203; **GEO**-100, 110, 130, 208; **GS**-104, 105, 106, 107; **HST**-101, 102, 103, 201, 202, 203; **MUS**-206; **PH**-121, 122, 123, 201, 202, 203, 211, 212, 213; **PHL**-102; **PS**-200, 201, 203, 204, 205, 225; **PSY**-110, 200, 205, 219, 231; **R**-101, 102, 103, 210, 204; **SOC**-204, 205, 206, 225; **Z**-201, 202, 203;	

TOTAL *CURRENT* CREDITS:	92	**TOTAL *PROPOSED* CREDITS:**	92-96
College Contact		**Telephone No.**	
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* CTE Dean Signature		**Date**	**10/27/21**

Clackamas Community College

Course Inactivations

November 5, 2021

Course Number	Title	Implementation
CJA-243	Drugs, Crime and the Law	2022/SU

Clackamas Community College

Online Course/Outline Submission System

Show changes since last approval in red Print Edit Delete Back

Date approved: January 19, 2018 Certified General Education Area(s): None

Section #1 General Course Information

Department: Education, Human Services & Criminal Justice

Submitter

First Name: Sharron
Last Name: Furno
Phone: 6224
Email: sharron.furno

Course Prefix and Number: CJA - 243

 # 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: Drugs, Crime and the Law

Course Description:

Examines the most common types of drugs consumed in the U.S. and societal problems related to drug use. Discusses potential crimes associated with drugs, and law enforcement strategies used to address drug manufacturing, distribution and use.

Type of Course: Lower Division Collegiate

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): Criminal Justice AAS

Are there prerequisites to this course?

Yes

Pre-reqs: CJA-110 with a C or better

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?

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. describe the history of drug use, abuse and legislation;
2. evaluate the relationships between drugs, crime and the law;
3. describe the biological effects and characteristics of psychoactive substances on human beings;
4. identify contemporary drug abuse prevention and treatment models;
5. describe the business models of illegal drugs;
6. analyze the enforcement strategies of drug laws;
7. explain how past and present political policies regarding drugs have evolved, and how they affect the criminal justice system.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. History of drug use, abuse & legislation.
2. Physiology of psychoactive substances.
3. Depressants & stimulants.
4. Hallucinogens, club drugs, marijuana, inhalants, & prescriptions drugs.
5. Sociology & psychology of drug abuse.
6. Drug prevention & treatment.
7. The business of illegal drugs.
8. Enforcing drug laws.
9. Crimes resulting from drug abuse.
10. Past, present and possible future drug policies.

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)**
✓ **SOU (Southern Oregon University)**

✓ **WOU (Western Oregon University)**

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

WOU: CJ 225; PSU and SOU: Lower Division Transfer/elective

How does it transfer? (Check all that apply)

✓ **required or support for major**

✓ **general elective**
:

First term to be offered:

Next available term after approval
:

Clackamas Community College

Program Amendments

November 5, 2021

Program	Implementation
Criminal Justice AAS	2022/SU
Criminal Justice AAS, Corrections Option	2022/SU

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
Salem, OR 97310-0203

Office of Educational Improvement & Innovation
Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE PROGRAM AMENDMENT FORM

(For changes to State Approved Associate of Applied Science degree, AAS option and Certificate of Completion programs)

This form should be completed electronically and the boxes will expand to accommodate text.
Current instructions, forms, handouts and other useful resources are located at
http://www.ode.state.or.us/search/results/?id=231

College:	**Clackamas Community College**	**Date**	

CAREER LEARNING AREA	
☐ **Ag, Food & Natural Resource Systems**	☐ **Health Services**
☐ **Arts, Information & Communications**	☐ **Human Resources**
☐ **Business & Management**	☐ **Industrial & Engineering Systems**

PROGRAM INFORMATION

APPROVED **Program Title** *(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)*	*APPROVED* **CIP Code** (Include 7th & 8th digits used for OCCURS reporting.) *6-digit CIP*	*7th digit*	*8th digit*	*APPROVED* **Recognition Award**	*Current* **Credits**
AAS Title: Criminal Justice AAS.CRIMJUSTICE	**43.0107**			√ **AAS (90-108 credits)**	**90-92**
Related Option: Corrections				☐ *OPTION* **to AAS Degree**	
Related Certificates:				☐ **Certificate of Completion**	

**Enter name of base degree in 'AAS Title' box

LAST AMENDMENT APPROVED ON 1/18/19

TYPE OF PROGRAM AMENDMENT
(Check **ALL** That Apply)

☐ **New Program++** ☐ **Title Change for Program**	☐ **Curriculum Revision**	✓ **Revision in Program Credits** *Proposed* **Total Credits:**	
Proposed **AAS Title:**			
Proposed **OPTION Title:**			
Proposed **Certificate Title:**			
☐ *SUSPENSION* **of Program**	*Reason for Suspension:*		
Suspension Effective Date:			

++If new program is an additional award for an existing degree or certificate, complete 'Program Information' section for existing program.

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				*PROPOSED CURRICULUM 22-23* [List only course(s) to be amended]			
Course	**Title**	**Hours**	**Credits**	**Course**	**Title**	**Hours**	**Credits**
Criminal Justice Associate of Applied Science Degree: 1st Year							
Fall Term							
CJA-110	Introduction to Law Enforcement	33	3				
CJA-122	Criminal Law	44	4				
MTH-098	**College Math Foundations**	**44**	**4**				
WR-121	**English Composition**	**44**	**4**				
Winter Term							
CJA-101 Or CJA-201	Criminology or Juvenile Delinquency	44	4				
CJA-120	Introduction to Courts	33	3				
CJA-203	Crisis Intervention	33	3				
LIB-101	Introduction to Library Research	11	1				
WR-122	English Composition	44	4				
Spring Term							
CJA-130	Introduction to Corrections	33	3				
CJA-243	Drugs, Crime and the Law	33	3	REMOVE			
HD-161	Multicultural Awareness	33	3				
PSY-219	Introduction to Abnormal Psychology	44	4				
				CJA-216	Implicit Bias and Policing	33	3
Criminal Justice Associate of Applied Science Degree: 2nd Year							
Fall Term							
CJA-210	Criminal Investigation I	33	3				
CJA-214	Intimate Partner Violence	33	3				
CJA-223	Criminal Justice Ethics	33	3				
HDF-260	Understanding Child Abuse and Neglect	44	4				
--	Criminal Justice program electives		3-4				
Winter Term							
CJA-170	Careers in Criminal Justice	33	3				
CJA-211	Criminal Investigation II	33	3				
CJA-222	Procedural Law	33	3				
HPE-296	**Health and Fitness for Criminal Justice**	**60**	**3**				
--	Criminal Justice program electives		3-4				
Spring Term							
CJA-200	Community Policing	33	3				
CJA-212	Criminal Investigation III	33	3				
CJA-250	**Reporting, Recording & Testifying**	**44**	**4**				

CJA-270	Criminal Justice Capstone	33	3				
CJA-280 Or HD-102	Criminal Justice/Corrections/CWE Or Service Learning Experience	108	3				
Criminal Justice Program Electives							
Any CJA course not included in the Criminal Justice Program, or any of the following:							
GRN-183	Death and Dying	33	3				
HST-131	History of Crime & Punishment in Western Civilization	44	4				
TOTAL *CURRENT* CREDITS:			90-92	**TOTAL *PROPOSED* CREDITS:**			

College Contact	Sharron Furno	**Telephone No.**	3475
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* PTE Dean Signature		**Date**	**10/19/21**

Oregon Department of Community Colleges and Workforce Development
255 Capitol Street NE
Salem, OR 97310-0203

Office of Educational Improvement & Innovation
Phone: (503) 378-3600
FAX: (503) 378-5156

COMMUNITY COLLEGE PROGRAM AMENDMENT FORM

(For changes to State Approved Associate of Applied Science degree, AAS option and Certificate of Completion programs)

This form should be completed electronically and the boxes will expand to accommodate text.
Current instructions, forms, handouts and other useful resources are located at
http://www.ode.state.or.us/search/results/?id=231

College:	**Clackamas Community College**	**Date**	

CAREER LEARNING AREA	
☐ **Ag, Food & Natural Resource Systems**	☐ **Health Services**
☐ **Arts, Information & Communications**	☐ **Human Resources**
☐ **Business & Management**	☐ **Industrial & Engineering Systems**

PROGRAM INFORMATION

APPROVED **Program Title** *(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)*	*APPROVED* **CIP Code** (Include 7th & 8th digits used for OCCURS reporting.) *6-digit CIP*	*7th digit*	*8th digit*	*APPROVED* **Recognition Award**	**Current Credits**
AAS Title: **Criminal Justice**				☐ **AAS**	
Option Title** **Corrections** AAS.CORRECTIONS	**43.0102**			√ *OPTION* **to AAS (at least 70% of base AAS, 90-108 credits)**	**91-92**
Related Certificate:				☐ **Certificate of Completion**	

****Enter name of base degree in 'AAS Title' box**

LAST AMENDMENT APPROVED ON 1/18/19

TYPE OF PROGRAM AMENDMENT

(Check **ALL** That Apply)

☐ **New Program++** ☐ **Title Change for Program**	☐ **Curriculum Revision**	☐ **Revision in Program Credits** *Proposed* **Total Credits:**
Proposed **AAS Title:**		
Proposed **OPTION Title:**		
Proposed **Certificate Title:**		
☐ *SUSPENSION* **of Program**	*Reason for Suspension:*	
Suspension Effective Date:		

++If new program is an additional award for an existing degree or certificate, complete 'Program Information' section for existing program.

CURRICULUM AMENDMENT

[List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping.
For a New Program, complete the Proposed Curriculum section only.]

CURRENT CURRICULUM 21-22 [List entire curriculum as last approved]				*PROPOSED CURRICULUM 22-23* [List only course(s) to be amended]			
Course	**Title**	**Hours**	**Credits**	**Course**	**Title**	**Hours**	**Credits**
Corrections Associate of Applied Science Degree: 1st Year							
Fall Term							
CJA-110	Introduction to Law Enforcement	33	3				
CJA-122	Criminal Law	44	4				
MTH-098	**College Math Foundations**	**44**	**4**				
WR-121	**English Composition**	**44**	**4**				
Winter Term							
CJA-101 Or CJA-201	Criminology or Juvenile Delinquency	44	4				
CJA-120	Introduction to Courts	33	3				
CJA-203	Crisis Intervention	33	3				
LIB-101	Introduction to Library Research	11	1				
WR-122	English Composition	44	4	Move to 2nd Year, Winter Term			
				HS-156	Conducting Human Service Interviews	33	3
Spring Term							
CJA-130	Introduction to Corrections	33	3				
CJA-243	Drugs, Crime and the Law	33	3	REMOVE			
HD-161	Multicultural Awareness	33	3				
PSY-219	Introduction to Abnormal Psychology	44	4				
				CJA-216	Implicit Bias and Policing	33	3
Corrections Association of Applied Science Degree: 2nd Year							
Fall Term							
CJA-223	Criminal Justice Ethics	33	3				
CJA-252	Introduction to Restorative Justice	33	3				
HDF-260	Understanding Child Abuse and Neglect	44	4				
HE-163	Body & Drugs I: Introduction to Abuse & Addiction	33	3				
--	Corrections program elective		3-4				
Winter Term							
CJA-134	Correctional Institutions	33	3				
CJA-170	Careers in Criminal Justice	33	3				
HPE-296	**Health and Fitness for Criminal Justice**	**60**	**3**				
HS-156	Conducting Human Service Interviews	33	3	Move to 1st Year, Winter Term			

HS-211	Infectious Diseases and Harm Reduction	11	1				
HS-216	Group Counseling Skills	33	3				
				WR-122	English Composition	44	4
Spring Term							
CJA-215	Sexual Abuse and Human Trafficking	33	3				
CJA-232	Case Management	33	3				
CJA-250	**Reporting, Recording & Testifying**	**44**	**4**				
CJA-270	Criminal Justice Capstone	33	3				
CJA-280 Or HD-102	Criminal Justice/Corrections/CWE Or Service Learning Experience	108	3				
Corrections Program Electives							
Any CJA course not already included in the Corrections Program, or any of the following:							
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HST-131	History of Crime & Punishment in Western Civilization	44	4				
TOTAL *CURRENT* CREDITS:			91-92	**TOTAL *PROPOSED* CREDITS:**			

College Contact		**Telephone No.**	
E-Mail Address		**Fax No.**	
Chief Academic Officer *or* PTE Dean Signature		**Date**	**10/19/21**