

	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. New Course a. RET-220 b. ES-211 b. APR Changes a. Course Hours, Instructional Method, Credit Change i. APR-104MA, APR-111MA, APR-112MA b. New Courses i. APR-113MA, APR-203MA, APR-254MA c. Amendments i. Industrial Mechanics and Maintenance Technology Apprenticeship AAS ii. Mechanics and Maintenance Apprenticeship Technologies: Trade Worker Apprenticeship Technologies CPCC d. Program Learning Outcomes i. Construction Trades, General Apprenticeship AAS ii. Construction Trades, General Apprenticeship CC iii. Manual Apprenticeship Trades CPCC iv. Electrician Apprenticeship Technologies AAS v. Electrician Apprenticeship Technologies CC vi. Limited License Electrician Apprenticeship Technologies CPCC vii. Industrial Mechanics and Maintenance Technology Apprenticeship AAS viii. Mechanics and Maintenance Apprenticeship Technologies: Trade Worker Apprenticeship Technologies CPCC c. Amendment a. Emergency Management Professional AAS d. IDTD Changes a. Course Hours, Instructional Method, Credit Change i. MFG-102 ii. MTT-111, MTT-112, MTT-113, MTT-121 b. New Course	Abe Fouhy Lupe Martinez Zapata Shalee Hodgson	Approval/22.SP Approval/22.SP Approval/22.SU Approval/22.SP Approval/22.SU Approval/22.SU Info/22.SU Approval/22.SU Approval/22.SP Approval/22.SU
	Jeff Ennenga Mike Mattson	Approval/22.SU Approval/22.SP Approval/22.SU

<ul style="list-style-type: none"> i. IMT-230 c. Machine Tool Amendments <ul style="list-style-type: none"> i. Machine Tool Technology AAS ii. Machine Tool Technology CC iii. CNC Operator CPCC d. Industrial Maintenance Technology Amendments <ul style="list-style-type: none"> i. Industrial Maintenance Technology AAS ii. Industrial Maintenance Technology CC iii. Industrial Maintenance Technology Mechanical Maintenance CC e. CAM Amendment <ul style="list-style-type: none"> i. Computer-Aided Manufacturing AAS f. New Program <ul style="list-style-type: none"> i. Computer-Aided Drafting (CAD) CC 		<p>Approval/22.SP</p> <p>Approval/22.SU</p> <p>Approval/22.SU</p> <p>Approval/22.SU</p> <p>Approval/22.SU</p> <p>Approval/22.SU</p> <p>Approval/22.SU</p> <p>Approval/22.SU</p>
<p>5. Old Business</p> <ul style="list-style-type: none"> a. 		
<p>6. New Business</p> <ul style="list-style-type: none"> a. 		
<p>7. Closing Comments</p> <ul style="list-style-type: none"> a. 		

Present: ASG (Ben Melles), Nora Brodnicki, Rick Carino, Elizabeth Carney, Amanda Coffey, Megan Feagles (Recorder), Bev Forney, Sharron Furno, Shalee Hodgson, Kerrie Hughes (Alternate Chair), Jason Kovac, Kara Leonard, Lupe Martinez, Mike Mattson, Tracy Nelson, Scot Pruyn (Chair), Lisa Reynolds, Cynthia Risan, Charles Siegfried, Sarah Steidl, Dru Urbassik, Helen Wand, Jim Wentworth-Plato

Guests: April Chastain, Laurette Scott

Absent: Dustin Bare, George Burgess, Jeff Ennenga, Eden Francis, Sue Goff, Dawn Hendricks, Alice Lewis, Patricia McFarland, David Plotkin, Terrie Sanne, Tara Sprehe, Andrea Vergun

1. Welcome & Introductions

2. Approval of Minutes

- a. Approval of the February 4, 2022 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. Program Amendments

- i. AS, Horticulture, OSU
1. April Chastain presented
 2. Worked with OSU on some of the changes. Some of the courses no longer transfer so they were removed.
 3. Replacing the lists of courses in the program with a list of electives. Added in MTH-111
 4. Total credits change from 98-100 to 93-97
 5. It was suggested to list all the elective courses that will transfer to OSU, not just the shorter list of recommended courses.
 6. April will bring back with a note about more courses being included in the electives.

Motion to approve, approved

- ii. AA Degree, Oregon Transfer Elementary Education

1. Laurette Scott presented
2. Adding in ED-101 as an option to the Elementary Education Specific Requirements. No other changes

Motion to approve, approved

- iii. Career & Technical Education (CTE) Licensure Prep CC

1. Laurette Scott presented
2. Adding in ED-113 or ED-114, removing ED-169 or ED-254. No credit change

Motion to approve, approved

- iv. Electrician Apprenticeship Technologies AAS

1. Shalee Hodgson presented for Shelly Tracy
2. Moving APR-118UL, APR-128UL, and APR-138UL to recommended electives for Lineman (UL) and Meterman (UM). This will allow non-PGE students to earn the same degree without substitutions or special permission.

Motion to approve, approved

- v. Medical Assistant CC

1. Shalee Hodgson presented for Virginia Chambers
2. Moved the BI courses to before the first term. Moved MA-116 up a term.
3. Total credits change from 49 to 45.

Motion to approve, approved

b. Related Instruction

- i. Shalee Hodgson presented

- ii. The Related Instruction Review Team is recommending that BT-125 be a Related Instruction course in the Communications Area.
- iii. It was determined that BT-125 does not need to be on the Related Instruction list since the prereq BT-124 is already approved as Related Instruction.

5. Old Business

a.

6. New Business

a. **Arts and Sciences Review Team Lead**

- i. Lisa Reynolds is no longer in the Arts and Science division.
- ii. Bev will take over the role as Review Team Lead for Arts and Sciences.

7. Closing Comments

a.

-Meeting Adjourned-

Next Meeting: March 4, 2022 (8-9:30am)

1. Course Title Change

Course	Current Title	Proposed Title
AM-131	Chassis Systems	Suspensions Systems
ED-113	Instructional Strategies in Reading & Language Arts	Instructional Strategies for Literacy
ED-114	Instructional Strategies for Integrated Math Across Curriculum	Instructional Strategies for Math

2. Course Number Change

Course	Title	Proposed Course Number
AM-235	Power Transmission Systems	AM-135

3. Outlines Reviewed for Approval

Course	Title	Implementation
AB-101	Auto Restoration	2022/SP
AB-113	Collision Repair I/Nonstructural	2022/SP
AB-123	Collision Repair Welding II	2022/SP
AB-133	Collision Repair II/Structural	2022/SP
AB-149	Collision Repair Estimating I	2022/SP
AB-150	Collision Repair Computerized Estimating -	2022/SP
AB-151	Collision Repair Computerized Estimating -	2022/SP
AB-222	Collision Repair III/Advanced Structural	2022/SP
AB-224	Collision Repair IV/Advanced Structural	2022/SP
AB-235	Collision Repair Welding III	2022/SP
AB-280	Collision Repair/CWE	2022/SP
ABR-125	Collision Repair/Refinishing I	2022/SP
ABR-127	Collision Repair/Refinishing II	2022/SP
ABR-129	Collision Repair/Refinishing III	2022/SP
ABR-225	Production Shop Techniques	2022/SP
AM-101	Intro to Automotive Service Technology	2022/SP
AM-129	Electrical Systems I	2022/SP
AM-130	Brake Systems	2022/SP
AM-131	Suspensions Systems	2022/SP
AM-133	Engine Systems	2022/SP
AM-135	Power Transmission Systems	2022/SP
AM-225	Safety Systems	2022/SP
AM-229	Electrical Systems II	2022/SP
AM-242	Engine Performance II	2022/SP
AM-245	Automatic Transmission Systems	2022/SP
APR-201MA	CNC I: Set-Up and Operation	2022/SP
APR-202MA	CNC II: Programming and Operation	2022/SP
CDT-108A	Introduction to SolidWorks	2022/SP
CDT-223	Inventor Fundamentals	2022/SP
CDT-225	Advanced SolidWorks	2022/SP
ED-101	Intro to Education Practicum & Seminar	2022/SP
ED-113	Instructional Strategies for Literacy	2022/SP

ED-114	Instructional Strategies for Math	2022/SP
ED-130	Comprehensive Classroom Management	2022/SP
ED-131	Instructional Strategies	2022/SP
ED-169	Overview of Students with Special Needs	2022/SP
ED-216	Foundations of Teaching & Education	2022/SP
ED-229	Learning & Development	2022/SP
ED-254	Instructional Strategies for Dual Language	2022/SP
ED-258	Multicultural Education	2022/SP
FYE-101	First Year Experience Level I	2022/SP
IMT-220	Industrial Machinery II	2022/SP
MA-116	Introduction to Medications	2022/SP
MA-118L	Examination Room Techniques Lab	2022/SP
MA-145	Insurance & Health Information Management	2022/SP
MFG-221	Materials Science	2022/SP

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Mark

Last Name: House

Phone: 6348

Email: markh

Course Prefix and Number: AB - 101

Credits: 3

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 60

Lab (# of hours):

Total course hours: 60

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: Auto Restoration

Course Description:

Designed for students interested in auto body repair and painting their own vehicles. Includes dent removal, panel replacement, welding and painting. May be repeated for up to 12 credits.

Type of Course: Career Technical Preparatory

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? 12

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?

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: No

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. demonstrate metal repair, panel replacement, welding and paint preparation and application;
2. demonstrate basic metal repair techniques,
3. demonstrate proper panel replacement procedures,
4. select proper welding processes and apply as determined by project,
5. develop and implement a finishing plan,
6. customized a buffing/detailing plan pertinent to the applied finish.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Shop Orientation.
2. Shop Safety (taught in each section)
3. Tool Introduction, including. selection, safety and use.
 - a. Hand tools.
 - b. Power tools.
 - c. Grinders.
 - d. Jacks and stands.
 - e. Hoists.
 - f. Welding equipment.
4. Introduction to Metal Working.
 - a. Dent removal.
 - b. Part removal, replacement and alignment.
 - d. Welding patches and holes.
5. Introduction to Plastic Filler.
 - a. Preparation for application.
 - b. Abrasives needed to form plastic.
 - c. Mixing.
 - d. Application.
 - e. Finishing.
6. Introduction to Painting.
 - a. Surface prep and paint removal.
 - b. Spraying and gun use.
 - c. Priming and sealing.
 - d. Color application.
 - e. Buffing.

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:

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Mark

Last Name: House

Phone: 6348

Email: markh

Course Prefix and Number: AB - 113

Credits: 6

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 132

Lab (# of hours):

Total course hours: 132

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: Collision Repair I/Nonstructural

Course Description:

Provides basic instruction in collision repairs, including shop safety and chemical hazard safety; proper and safe use of tools; basic metal work and finishing; use of filler; door removal, replacement and alignment; and replacement and alignment of bolt-on front end sheet metal parts.

Type of Course: Career Technical Preparatory

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): Collision programs

Are there prerequisites to this course?

Yes

Pre-reqs: Prerequisite or Corequisite: AB-112 and ABR-125

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: No

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 proper shop safety,
2. demonstrate worker protection,
3. demonstrate the proper use of tools,
4. demonstrate basic metal work and finishing,
5. demonstrate metal and plastic filler repair,
6. demonstrate removal, replacement and alignment of bolt-on sheet metal.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Shop Orientation.
2. Worker Protection.
3. Tool Introduction Including Selecting and Safety Using:
 - a. Hand tools.
 - b. Power tools.
 - c. Grinders.
 - d. Jacks and stands.
 - e. Hoists.
 - f. Welding equipment.
 - g. Car Care.
4. Fire Prevention.
5. Shop safety.
6. Fire Extinguishers
7. Introduction to Metal Work.
 - a. Types of dents.
 - b. Dents on high and low crown contours.
 - c. Rough out procedures.
 - d. On and off dolly hammering.
 - e. Body spoons, picks and bars, and dent pullers.
 - f. Heat shrinking.
 - g. Cold shrinking.
 - h. Metal finishing with pick and file.
 - i. Welding and forging of patches and seams.
8. Introduction to Plastic Filler.
 - a. Preparation of metal for plastic application.
 - b. Abrasives for grinding and finishing.
 - c. Mixing.
 - d. Application.
 - e. Finishing
9. Introduction to Doors, Door Glasses and Components.
 - a. Door upholstery and related component removal and replacement.

- b. Door glass, regulator, stops, and latch component disassembly and replacement.
 - c. Removal and replacement of doors and hinges.
 - d. Door and related parts alignment.
 - e. Watershield and weatherstrip installation.
 - f. Leak testing.
10. Front End Sheet Metal.
- a. Bumper removal replacement and alignment.
 - b. Grill and gravel deflector removal, replacement and alignment.
 - c. Fender and inner panel removal, replacement and alignment.
 - d. Hood hinge and hood latch removal, replacement and alignment.
 - e. Core support and radiator removal, replacement and alignment.

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: AUWD

Submitter

First Name: John
Last Name: Phelps
Phone: 6378
Email: johnp

Course Prefix and Number: AB - 123

Credits: 2

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 48
Lab (# of hours):
Total course hours: 48

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: Collision Repair Welding II

Course Description:

Training in light gauge metal repair: Gas Metal Arc Welding (GMAW), Plasma Arc Cutting (PAC), Squeeze Type Resistance Spot Welding (ST-RSW), and other advanced welding techniques specific to collision damage repair.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Collision programs

Are there prerequisites to this course?

Yes

Pre-reqs: AB-112

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: No

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. complete sound welds in all positions using the GMAW process on 16-22 gauge mild steel,
2. complete sound welds on auto body gage mild steel,
3. safely setup and use GMAW and PAC equipment.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Equipment set-up and safety information.
 - a. GMAW (Gas Metal Arc Welding) process.
 - b. plasma arc cutting.
2. Correct set – up of GMAW equipment, in preparation of welding.
3. Demonstrations of correct GMAW procedures for welding on light gauge material (16 – 22 gauge) in all positions (flat, horizontal, vertical and overhead).
 - a. Butt welds with and without backing.
 - b. Lap welds.
 - c. Plug welds.
- d. special application: hole – fill, patch, fit-up, sleeve inserts.
4. Demonstration of correct plasma arc cutting procedures on mild steel and aluminum.
5. Cover the contents of I-CAR enhanced CD training program.
6. Squeeze type resistance spot welding (S-TRSW).
7. Cover how to correctly make the repairs required for the I-CAR Frame Rail test (SPS-O5).

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:

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: **Mark**
Last Name: **House**
Phone: **6348**
Email: **markh**

Course Prefix and Number: AB - 133

Credits: 6

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 132
Lab (# of hours):
Total course hours: 132

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: Collision Repair II/Structural

Course Description:

Repair major body damage using modern frame repair equipment. Includes repair and replacement of bolt-on, bonded, and welded components using the latest technology. Includes introduction to computerized measuring and damage analysis.

Type of Course: Career Technical Preparatory

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): Collision Repair Refinishing Technology

Are there prerequisites to this course?

Yes

Pre-reqs: AB-113

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?

- ✓ **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. repair minor sheet metal damage,
2. identify structured damage, and formulate viable repair rprocesses;
3. demonstrate panel replacement techniques
4. find location of water and wind leaks, and repair accordingly;
5. demonstrate glass replacement procedures,
6. perform simple frame repair.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Hydraulic Straightening Equipment Care and Use.
2. Major sheet metal damage, diagnosis and repair.
3. Inner structure damage, diagnosis and repair.
4. Introduction to panel replacement.
5. Trim removal and replacement.
6. Pre-removal alignment.
7. Layout of cuts for partial replacement.
8. Removal.
9. Installation and welding.
10. Finishing and sealing.
11. Molding installation.
12. Locating and correcting wind and water leaks.
13. Windshield, Quarter and Back Glass Replacement and Sealing.
14. Introduction to fram repair/uni-body and convential frame.
15. Diagnosis and tolerances.
16. Frame gauges and manuals
17. Frame correction equipment.
18. Repair methods.
19. Correct hook-up and pulling techniques.
20. Frame and body measuring.

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: AUWD

Submitter

First Name: Russ
Last Name: Peterson
Phone: 3800
Email: russp

Course Prefix and Number: AB - 149

Credits: 2

Contact hours

Lecture (# of hours): 28
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 28

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: Collision Repair Estimating I

Course Description:

This course provides instruction in procedure and terminology used in the collision repair estimating field. Body part component identification and the effects of a collision on a vehicle will be studied.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Collision Repair Refinishing Technology

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

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.

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. identify and name automotive components using industry accepted terminology,
2. locate and assess hidden damage,
3. perform complete and thorough vehicle inspections,
4. identify the damage components and prepare a thorough damage analysis,
5. utilize information contained in the "P-pages" to complete a competitive estimate.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Introduction.
2. Job function.
3. Vehicle construction.
4. Part & body component identification.
5. Collision effects.
6. Estimate terms & symbols.
7. Estimate guide procedure pages.
8. Estimate heading & layout.
9. Write estimate.

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: AUWD

Submitter

First Name: Russ

Last Name: Peterson

Phone: 3800

Email: russp

Course Prefix and Number: AB - 150

Credits: 2

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 44

Lab (# of hours):

Total course hours: 44

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: Collision Repair Computerized Estimating - Audatex

Course Description:

Provides detailed instruction in the use of modern computerized estimating systems in the collision repair field. Focus is on Audatex software.

Type of Course: Career Technical Preparatory

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): Collision Repair & Refinishing Technology AAS Degree & Career Pathway Certificate

Are there prerequisites to this course?

Yes

Pre-reqs: AB-149

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?

✓ 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?

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 navigating the Shoplink estimating system,
2. set up shop rates and basic shop profile,
3. demonstrate set up for paintless dent & paint repair,
4. manage the estimate files list,
5. identify and use advanced features,
6. demonstrate DRP communications by downloading assignments and uploading estimates and supplements,
7. utilize Shoplink Imaging by attaching and working with images and transmitting images,
8. create estimates for light, medium & heavy damages vehicles.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Shoplink Basics.
 - a. Introduction to Shoplink computerized estimating.
 - b. Familiarization with toolbar.
 - c. Navigation within system.
2. Estimating Level 1.
 - a. Setting up shop rates.
 - b. Generating first Shoplink estimate.
 - c. Printing an estimate.
 - d. Certification test.
3. Shop Profile.
 - a. Basic shop profile setup.
 - b. Optional features.
 - c. Paintless Dent Repair Setup.
 - d. Certification test.
4. Estimating Level 2.
 - a. Intermediate estimating.
 - b. Opening & closing estimates.
 - c. Certification test.
5. Estimating Level 3.
 - a. Preliminary estimate.
 - b. Supplement.
 - c. Paintless paint repair.
 - d. Certification test.
6. Estimating Level 4.
 - a. Advanced estimating.
 - b. Estimate using account profile.

- c. Using Host PXS.
- d. Certification test.
- 7. Managing the Estimate Files List.
 - a. Search, sort and filter.
 - b. Copy estimate and estimate statuses.
 - c. Deleting files and moving files to disk.
 - d. Certification test.
- 8. Advanced Features.
 - a. Generic vehicle estimating.
 - b. Using templates.
 - c. Letter writing.
 - d. Body shop management system.
 - e. Tire Database.
 - f. Estimate Check.
 - g. Frame Dimensions.
 - h. Emailing and Saving Estimates and Images.
 - i. Certification test.
- 9. DRP Communications.
 - a. Communications overview.
 - b. Downloading assignments.
 - c. What to do with the assignment.
 - d. Uploading estimates and supplements.
 - e. Certification test.
- 10. Shoplink Imaging.
 - a. Imaging overview and setup.
 - b. Attaching and working with images.
 - c. Transmitting images.
 - d. Certification test.
- 11. Hands-On Estimating.
 - a. Writing an estimate on light, medium & heavy damaged vehicles.

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: AUWD

Submitter

First Name: Russ

Last Name: Peterson

Phone: 3800

Email: russp

Course Prefix and Number: AB - 151

Credits: 2

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 44

Lab (# of hours):

Total course hours: 44

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: Collision Repair Computerized Estimating - CCC ONE

Course Description:

Provides detailed instruction in the use of modern computerized estimating systems in the collision repair field. Focus is on CCC ONE software.

Type of Course: Career Technical Preparatory

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): Automotive Collision Repair and Refinishing TechnologyAAS

Are there prerequisites to this course?

Yes

Pre-reqs: AB-149

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?

✓ 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. navigate the CCC ONE estimating system;
2. set up shop rates and basic shop profile;
3. set up for paintless dent & paint repair;
4. manage the estimate files list;
5. identify and use advanced features;
6. downloading assignments and uploading estimates and supplements;
7. utilize Pathways Imaging by attaching and working with images and transmitting images;
8. create estimates for light, medium & heavy damages vehicles.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. CCC ONE basics
 - a. Introduction to CCC ONE computerized estimating
 - b. Familiarization with toolbar
 - c. Navigation within system
2. Estimating level 1
 - a. Setting up shop rates
 - b. Generating first CCC ONE estimate
 - c. Printing an estimate
 - d. Certification test
3. Shop profile
 - a. Basic shop profile setup
 - b. Optional features
 - c. Paintless dent repair setup
 - d. Certification test
4. Estimating level 2
 - a. Intermediate estimating
 - b. Opening & closing estimates
 - c. Certification test
5. Estimating level 3
 - a. Preliminary estimate
 - b. Supplement
 - c. Paintless paint repair
 - d. Certification test
6. Estimating level 4
 - a. Advanced estimating
 - b. Estimate using account profile
 - c. Using Host PXS
 - d. Certification test
7. Managing the estimate files list
 - a. Search, sort and filter
 - b. Copy estimate and estimate statuses

- c. Deleting files and moving files to disk
- d. Certification test
- 8. Advanced features
 - a. Generic vehicle estimating
 - b. Using templates
 - c. Letter writing
 - d. Body shop management system
 - e. Tire database
 - f. Estimate check
 - g. Frame dimension
 - h. Emailing and saving estimates and images
 - i. Certification test
- 9. DRP communications
 - a. Communications overview
 - b. Downloading assignments
 - c. What to do with the assignment
 - d. Uploading estimates and supplements
 - e. Certification test
- 10. Pathways imaging
 - a. Imaging overview and setup
 - b. Attaching and working with images
 - c. Transmitting images
 - d. Certification test
- 11. Hands-On estimating
 - a. Writing an estimate on light, medium & heavy damaged vehicles

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: AUWD

Submitter

First Name: Mark

Last Name: House

Phone: 6348

Email: markh

Course Prefix and Number: AB - 222

Credits: 6

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 132

Lab (# of hours):

Total course hours: 132

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: Collision Repair III/Advanced Structural

Course Description:

Major collision repair with a systems approach: frame and structure, panels, suspension and brakes, electrical and cooling systems. Emphasis on frame and unibody repair, replacement of welded body panels, and diagnosis and repair of related damage.

Type of Course: Career Technical Preparatory

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): Collision Repair and Refinishing Technology AAS Degree & Career Pathway Certificate

Are there prerequisites to this course?

Yes

Pre-reqs: AB-133

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?

- ✓ 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 skill in major body repair,
2. demonstrate frame and Unibody repair,
3. demonstrate suspension component replacement,
4. demonstrate electrical system component diagnosis and replacement.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Major Body Repairs.
 - a. Major body alignment diagnosis and alignment.
 - b. Theory of major section splices.
 - c. Detailing, sealing, and undercoating of repaired areas.
2. Frame Repair – Unibody.
 - a. Diagnosis and repair of severe frame damage.
 - b. Theory of frame members replacement.
 - c. Correct hook-up and pulling techniques.
 - d. Theory of frame splicing and reinforcement.
 - e. Correcting appearance of repaired frame areas.
3. Suspension, Steering, and Brakes.
 - a. Suspension systems- independent.
 - a1. Short and long arm (a-frame).
 - a2. Strut.
 - a3. Twin I-Beam.
 - b. Suspension Systems, non-independent.
 - c. Steering Systems.
 - c1. Parallelogram.
 - c2. Rack and Pinion.
 - d. Power Steering Systems and their components.
 - e. Brake Systems.
 - e1. Components.
 - e2. A.B.S.
4. Electrical Components.
 - a. Electrical Circuits.
 - a1. Fundamentals.

- a2. Circuits.
- a3. Measurement.
- b. Components and Troubleshooting.
 - b1. Circuit Protection.
 - b2. Connectors.
 - b3. Wiring Repairs.
- c. Information Resources.
- e. Power Accessories.
 - e1. Seat Belts.
 - e2. Air Bags.
- 5. Plastic Repair.
 - a. Chemical bonding.
 - b. Smoothing and sanding.
 - c. Bumper Repairs.

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:

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Mark

Last Name: House

Phone: 6348

Email: markh

Course Prefix and Number: AB - 224

Credits: 6

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 132

Lab (# of hours):

Total course hours: 132

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: Collision Repair IV/Advanced Structural

Course Description:

Advanced frame and Unibody repair procedures. Electronic measurement and dimensioning, repair documentation, brakes, suspension, and alignment as they relate to collision repair.

Type of Course: Career Technical Preparatory

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): Collision Repair and Refinishing Technology AAS Degree & Career Pathway Certificate

Are there prerequisites to this course?

Yes

Pre-reqs: AB-222

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?

✓ **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 advanced frame and Unibody repair;
2. demonstrate advanced electronic frame measuring,
3. perform precise dimensional correction on unibody and full frame vehicles.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Vehicle Measurement and Damage Analysis.
 - a. Sway.
 - b. Sag.
 - c. Mash.
 - d. Diamond.
 - e. Twist.
2. Gauges, Trams, Ladders, and Fixtures.
 - a. Dimensional References and Data Retrieval.
 - a1. Datum Plane.
 - a2. Center Plane.
 3. Electronic Measuring Systems.
 - a. Computerized Laser Measuring Systems.
 - b. Robot Arm measuring Systems.
 4. Anchoring and Pulling.
 - a. Anchoring Full Frame Vehicles.
 - b. Anchoring Unibody Vehicles.
 - c. Single and Multiple Pulls.
 - d. Pulling Sequence.
 - e. Measuring when Pulling.
 5. Suspension and Brakes.
 - a. Component alignment or replacement.
 - a1. Diagnosis and troubleshooting.
 - a2. Caster, Camber, Toe, and Steering Axis Inclination.
 - b. Thrust Axis Analysis.
 - c. Brake Component inspection and replacement.

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: AUWD

Submitter

First Name: John

Last Name: Phelps

Phone: 6378

Email: johnp

Course Prefix and Number: AB - 235

Credits: 2

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 48

Lab (# of hours):

Total course hours: 48

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: Collision Repair Welding III

Course Description:

Aluminum welding for collision damage repair. Gas Metal Arc Welding (GMAW) and Gas Tungsten Arc Welding (GTAW) processes are learned, along with related weld techniques and equipment/safety procedures.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Automotive Technology AAS

Are there prerequisites to this course?

Yes

Pre-reqs: AB-123

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?

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. perform GTAW welds in all positions on auto body gage mild steel,
2. perform GTAW welds in all positions on auto body gage aluminum,
3. safely setup and operate GTAW and GMAW welding equipment for welding on steel and aluminum,
4. make practice repairs on automotive body and frame type materials that are sound and serviceable.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Equipment set-up and safety information.
 - a. GTAW (Gas Tungsten Arc Welding) process on steel.
 - b. GTAW (Gas Tungsten Arc Welding) process on aluminum.
 - c. GMAW (Gas Metal Arc Welding) process on aluminum.
2. Correct set – up of GMAW equipment, in preparation of welding.
3. Demonstrations of correct GMAW procedures for welding on light gauge aluminum material (1 mm – 2.5 mm) in all positions (flat, horizontal, vertical and overhead).
 - a. Butt welds with and without backing.
 - b. Lap welds.
 - c. Plug welds.
4. Cover the contents of I-CAR enhanced CD training program.

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: AUWD

Submitter

First Name: **Mark**
Last Name: **House**
Phone: **6348**
Email: **markh**

Course Prefix and Number: AB - 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: Collision Repair/CWE

Course Description:

Cooperative work experience. Work-based learning experience in an auto body repair shop. Variable Credit: 2-6 credits. Required: Student Petition.

Type of Course: Career Technical Preparatory

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?

Yes

Name of degree(s) and/or certificate(s): Automotive Technology AAS

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?

- ✓ **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. CWE information session to include enrollment & assistance with job placement based on degree orientation.
2. Learning objectives draft aligned with degree, CWE jobsite needs and expectations and Automotive CWE instructor's consultation.
3. Initial jobsite visit and company orientation to CWE by Automotive CWE instructor. Meeting with supervisor, student(s) and instructor.
4. Final evaluation. Follow-up consultation with employer.

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: AUWD

Submitter

First Name: Mark

Last Name: House

Phone: 6348

Email: markh

Course Prefix and Number: ABR - 125

Credits: 6

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 132

Lab (# of hours):

Total course hours: 132

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: Collision Repair/Refinishing I

Course Description:

Covers shop safety, fire prevention, selection and use of paint products, abrasives, fillers, basic application of primers, sealers, and top coats.

Type of Course: Career Technical Preparatory

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): Automotive Technology AAS & Collision Repair Refinishing Technology

Are there prerequisites to this course?

Yes

Pre-reqs: Prerequisite or Corequisite: AB-112 and AB-113

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?

✓ **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. prepare vehicles for refinishing,
2. demonstrate proper product selection and application,
3. explain and apply safety rules, regulations and compliance;
4. demonstrate safety with hazardous materials.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Introduction to collision repair safety, personal and shop.
 - a. Eye and respiratory.
 - b. Skin care and protection.
 - c. Chemical handling, labels, and storage.
 - d. M.S.D.S. and compliance.
2. Equipment and materials.
 - a. Tools, hand and power.
 - b. Tool safety.
3. Abrasives and sanding.
 - a. Abrasive selection.
 - b. Sanding techniques, mechanical and hand.
4. Paint equipment use.
 - a. Gun selection.
 - b. Cleaning and maintenance.
 - c. Compressed air system components.
5. Undercoat selection and use.
 - a. Metal pretreatments.
 - b. Corrosion protective primers.
 - c. Primer surfacers, urethane and polyester.
 - d. Glazing putties.
 - e. Sealers.
6. Surface preparation and masking.
 - a. Surface evaluation and refinish planning.
 - b. Mechanical sanding and featheredging.
 - c. Bare metal treatment.
7. Primer selection and application block sanding and guidecoating masking.
 - a. Materials and techniques.
 - b. Field and perimeter masking.
 - c. Spray masking.
 - d. Masking for downdraft and crossdraft spraybooths.
8. Topcoat selection and application.
 - a. Solvent borne basecoats.
 - b. Waterborne basecoats.
 - c. Spot and panel clearcoats.
 - d. Overall or complete clearcoats.

- e. Colorsanding and buffing.
- 9. Project completion – actual situation jobs.
 - a. Application and completion.
 - b. Solventborne basecoat/clearcoat repair.
 - c. Waterborne basecoat /clearcoat repair.
 - d. Large repair or complete.
 - e. Detail and delivery.

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 | Yes |
| 4. Clean up natural environment | No |
| 5. Supports green services | Yes |

Percent of course: 25%

First term to be offered:

Next available term after approval

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Mark

Last Name: House

Phone: 6348

Email: markh

Course Prefix and Number: ABR - 127

Credits: 6

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 132

Lab (# of hours):

Total course hours: 132

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: Collision Repair/Refinishing II

Course Description:

Application of solvent and waterborne finishes, including spot repairs, color matching, complete refinishing, and problem solving. Introduction to computerized color information retrieval and mixing.

Type of Course: Career Technical Preparatory

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): Automotive Technology AAS

Are there prerequisites to this course?

Yes

Pre-reqs: ABR-125

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?

✓ **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. select, mix and apply the products needed to successfully refinish a vehicle,
2. prepare a variety of surfaces for refinishing,
3. perfect the surface of the applied finish,
4. document material usage,
5. dispose of hazardous waste in compliance with E.P.A. guidelines.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Review of Safety Procedures.
 - a. Eye & Respiratory.
 - b. Chemical handling.
 - c. Fire hazards and prevention.
2. Basecoat/Clear coat Topcoats.
 - a. Selection of undercoats.
 - b. Thinners and thinning.
 - c. Topcoat application choice.
 - c1. Spot repair and blend.
 - c2. Panel Repair.
 - c3. Complete repairs.
3. Basecoat pigments and properties.
4. Matching and blending.
5. Problems and solutions with BC/CC.
6. Project completion – Actual situation jobs.
 - a. Preparation, application, completion.
 - a1. BC/CC spot repairs.
 - a2. BC/CC panels.
 - a3. Complete BC/CC finish.

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 | Yes |
| 4. Clean up natural environment | No |
| 5. Supports green services | Yes |

Percent of course: 25%

First term to be offered:

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Mark

Last Name: House

Phone: 6348

Email: markh

Course Prefix and Number: ABR - 129

Credits: 6

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 132

Lab (# of hours):

Total course hours: 132

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: Collision Repair/Refinishing III

Course Description:

Application of solvent and waterborne basecoats and tri-coats and urethane topcoats, using both foreign and domestic refinish systems. Includes complete refinishing, spot and panel painting, color matching and problem solving.

Type of Course: Career Technical Preparatory

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): Collision Repair and Refinishing Technology AAS Degree & Career Pathway Certificate

Are there prerequisites to this course?

Yes

Pre-reqs: ABR-127

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?

- ✓ 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. select and apply the appropriate finish to complete a satisfactory repair;
2. evaluate any defects present and remove them,
3. bring the paint surface to the degree of perfection necessary to satisfy the most demanding customer,
4. describe the components of color, value, hue, and chroma.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Review of Safety Procedures.
 - a. Eye & Respiratory.
 - b. Chemical handling.
 - c. Fire hazards and prevention.
2. Preparation Techniques.
3. Basecoat/clear coat finishes.
 - a. Selection of undercoats – tinted sealers, etc.
 - b. Reducers for specific applications.
4. Modern paint technology.
5. Mixing according to a formula.
6. Paint variances.
7. Tinting and blending.
 - a. Test panels.
 - b. Let-down panels.
 - c. 3-stage finishes.
8. Surface defects and their removal.
9. Project completion – Actual situation jobs.
 - a. Preparation, application, completion.
 - a1. Spot repairs.
 - a2. Panel repairs.
 - a3. Complete refinish.

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 | Yes |
| 4. Clean up natural environment | No |
| 5. Supports green services | Yes |

Percent of course: 25%

First term to be offered:

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: **Mark**
Last Name: **House**
Phone: **6348**
Email: **markh**

Course Prefix and Number: ABR - 225

Credits: 6

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 132
Lab (# of hours):
Total course hours: 132

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: Production Shop Techniques

Course Description:

Designed for students who wish to gain additional hands-on experience in refinishing, using the most up-to-date methods and materials.

Type of Course: Career Technical Preparatory

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): Collision Repair and Refinishing Technology AAS Degree & Career Pathway Certificate

Are there prerequisites to this course?

Yes

Pre-reqs: ABR-129

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?

✓ **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. choose and perform the most efficient, high quality repair procedure;
2. use the least amount of materials and time,
3. explain estimate hours, labor times, material costs, and shop supplies as written on an estimate and repair order.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. All projects undertaken will be chosen on the basis of a particular need, or skill to be emphasized. Difficult surface preparation, masking techniques, or paint matching may be encountered. A variety of substrates will be covered, including but not limited to: steel & galvanized steel aluminum, FRP, flexible plastic, and rigid plastic.

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 | Yes |
| 4. Clean up natural environment | No |
| 5. Supports green services | Yes |

Percent of course: 25%

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: AUWD

Submitter

First Name: Jay

Last Name: Leuck

Phone: 5035943052

Email: jayl

Course Prefix and Number: AM - 101

Credits: 2

Contact hours

Lecture (# of hours): 24

Lec/lab (# of hours):

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: Intro to Automotive Service Technology

Course Description:

Introduction to Automotive Service Technology is a course that will prepare students for success in the Automotive Service Technology Program. Shop orientation and automotive industry safety training will be provided. Students can earn industry-recognized certificates. Students will be exposed to industry-recognized online service information. Students will also be introduced to tasks that align with the Auto Service Excellence Education Foundation (ASEEF) Master Automotive Service Technician (MAST) program accreditation.

Type of Course: Career Technical Preparatory

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): Automotive Service Technology

Are there prerequisites to this course?

Yes

Pre-reqs: MTH-020 or placement in MTH-050, and WRD-080 or placement in WRD-090

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: AM-129, AM-130, AM-131, AM-133, AM-135, or AM-142

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: No

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. identify tools and shop equipment,
2. identify all ASE Education Foundation required supplemental tasks,
3. complete testing requirements to earn industry-recognized safety certifications.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Program/CCC Orientation
 - a. Portfolio development
 - b. Careers in Automotive Service Area
 - c. Safety, Environmental and Health Concerns
 - d. Tools, Shop Equipment and Measuring
 - e. Principles, Math and Calculations
 - f. Vehicle Service Information, Identification and Routine Maintenance
2. ASEEF Required Supplemental Tasks
 - a. Shop and Personal Safety
 - b. Tools and Equipment
 - c. Preparing Vehicle for Service
 - d. Preparing Vehicle for Customer
 - e. Work Habits and Ethics
 - f. Workplace Employability Skills

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:

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Jay
Last Name: Leuck
Phone: 3052
Email: jayl

Course Prefix and Number: AM - 129

Credits: 5

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 100
Lab (# of hours):
Total course hours: 100

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: Electrical Systems I

Course Description:

This course is designed to provide students with the entry-level skills necessary to repair automobile electrical systems. Students will learn about general electrical systems diagnosis; servicing and repair of batteries, starting systems, and charging systems.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Automotive Service Technology AAS Degree

Are there prerequisites to this course?

Yes

Pre-reqs: MTH-020 or placement in MTH-050, and WRD-080 or placement in WRD-090

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?

✓ **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?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

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

1. discuss and diagnose general electrical systems,
2. perform battery diagnosis and service,
3. diagnose and repair starting systems,
4. diagnose and repair charging systems.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Electrical fundamentals
3. Electrical circuits and Ohm's Law
4. Series, parallel, and series-parallel circuits
5. Circuit testers and digital meters
6. Automotive wiring and wiring repair
7. Wiring schematics and circuit testing
8. Magnetism and electromagnetism
9. Batteries: testing and service
10. Cranking system: diagnosis and service
11. Charging system: diagnosis and service

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 2022

Clackamas Community College
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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Nick

Last Name: Miller

Phone: 3054

Email: nickmil

Course Prefix and Number: AM - 130

Credits: 5

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 100

Lab (# of hours):

Total course hours: 100

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: Brake Systems

Course Description:

In this theory and lab course students will learn about the construction and operation of basic hydraulics, brake fluids, friction materials, seals, disc and drum brakes, hydraulic and vacuum brake boosters systems. Students will also learn to service and repair automotive brake systems.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Automotive Technology AAS Degree

Are there prerequisites to this course?

Yes

Pre-reqs: MTH-020 or placement in MTH-050, and WRD-080 or placement in WRD-090

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?

✓ **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?

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 fundamentals of brake service,
2. service and repair brake hydraulic systems,
3. service and repair drum brake systems,
4. service and repair disc brake systems,
5. service and repair park brake systems,
6. service and repair power brake systems,
7. diagnose brake systems.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. fundamentals of brake service and repair.
2. brake hydraulic system service and repair.
3. drum brake system service and repair.
4. disc brake system service and repair.
5. park brake system service and repair.
6. power brake system service and repair.
7. brake system diagnosis

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 2022

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Nick
Last Name: Miller
Phone: 3054
Email: nickmil

Course Prefix and Number: AM - 131

Credits: 5

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 100
Lab (# of hours):
Total course hours: 100

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: Suspension Systems

Course Description:

In this theory and lab course, students will learn the design, construction, service, and repair of front and rear suspension systems, wheels and tires, steering systems, and alignments. Students will service and repair these systems in the hands-on lab.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Automotive Technology AAS Degree

Are there prerequisites to this course?

Yes

Pre-reqs: MTH-020 or placement in MTH-050, and WRD-080 or placement in WRD-090

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?

✓ **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?

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 fundamentals of service and repair of chassis systems,
2. service and repair wheel and tire assemblies,
3. service and repair front and rear-wheel steering systems,
4. service and repair front and rear suspension systems,
5. align front and rear suspension and steering systems,
5. install aftermarket alignment kits,
6. describe the operation and repair of four-wheel steering systems.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. fundamentals of chassis systems.
2. service and repair of front and rear suspension systems.
3. service and repair of front and rear steering systems.
4. service and repair of wheel and tire systems.
5. alignment of front and rear suspension and steering systems.
6. installation of aftermarket alignment kits.

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 2023

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Jay
Last Name: Leuck
Phone: 3052
Email: jayl

Course Prefix and Number: AM - 133

Credits: 5

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 100
Lab (# of hours):
Total course hours: 100

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: Engine Systems

Course Description:

This course is designed to provide students with the entry-level skills necessary to repair automobile engines. Includes general engine diagnosis; cylinder head and valve train diagnosis and repair; engine block assembly diagnosis and repair; and lubrication and cooling systems diagnosis and repair.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Automotive Service Technology AAS Degree

Are there prerequisites to this course?

Yes

Pre-reqs: MTH-020 or placement in MTH-050, and WRD-080 or placement in WRD-090

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?

✓ **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?

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 general engine diagnosis including engine removal and re-installation (R&R),
2. demonstrate cylinder head and valve train diagnosis and repair,
3. demonstrate engine block assembly diagnosis and repair,
4. demonstrate lubrication and cooling systems diagnosis and repair.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Fasteners and thread repair
2. Gasoline engine operation, parts, and specifications
2. Engine removal and disassembly
4. Engine cleaning and crack detection
5. Cylinder head and valve guide service
6. Camshafts and valve trains
7. Pistons, rings, and connecting rods
8. Engine blocks
9. Crankshafts, balance shafts and bearings
10. Gaskets and sealants
11. Engine assembly and dynamometer testing
12. Cooling system operation and diagnosis
13. Lubrication system operation and diagnosis
14. Engine installation and break-in

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 2023**

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Rick
Last Name: Lockwood
Phone: 3053
Email: rickl

Course Prefix and Number: AM - 135

Credits: 5

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 100
Lab (# of hours):
Total course hours: 100

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: Power Transmission Systems

Course Description:

In this course students will learn the construction, operation, service and repair of clutches, manual transmission, U-joints, drive lines, final drives, overdrive, and four wheel drives.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Automotive Service Technology AAS Degree

Are there prerequisites to this course?

Yes

Pre-reqs: MTH-020 or placement in MTH-050, and WRD-080 or placement in WRD-090

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. diagnose and repair clutch and actuating assemblies;
2. diagnose and repair manual transmissions/trans axles;
3. diagnose and repair drive shafts and universal joints;
4. diagnose and repair differential assemblies;
5. diagnose and repair four-wheel drive systems.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Clutch and actuating assemblies.
2. Manual transmissions/transaxles.
3. Drive shafts and universal joints.
4. Differential assemblies.
5. Four wheel drive 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: Spring 2022

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Rick
Last Name: Lockwood
Phone: 3053
Email: rickl

Course Prefix and Number: AM - 225

Credits: 5

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 100
Lab (# of hours):
Total course hours: 100

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: Safety Systems

Course Description:

In this course students will be introduced to existing vehicle on-board safety systems and Advanced Driver Assist Systems (ADAS) on today's vehicles. Safety systems such as Anti-lock brakes, Traction control, Air-bag systems, Stability control, and Advanced Driver Assist Systems will be explained, demonstrated, and tested.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Automotive Service Technology AAS Degree

Are there prerequisites to this course?

Yes

Pre-reqs: AM-129

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 Only

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. Diagnose, service, and repair electronically controlled suspension systems as they relate to stability control;
2. diagnose, service, and repair anti-lock brake systems;
3. diagnose, service, and repair traction control systems;
4. diagnose, service, and repair air-bag systems;
5. demonstrate proper calibration and adjustment of advanced driver-assist systems.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Anti-lock brakes and traction control systems
2. Stability control systems
3. Air-bag and pre-tensioner systems
4. Advanced driver assist 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: Spring 2022

Clackamas Community College
Online Course/Outline Submission System

Show changes since last approval in red

Section #1 General Course Information

Department: AUWD

Submitter

First Name: Jay
Last Name: Leuck
Phone: 3052
Email: jayl

Course Prefix and Number: AM - 229

Credits: 5

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 100
Lab (# of hours):
Total course hours: 100

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: Electrical Systems II

Course Description:

In this course students will learn fundamentals of electronics, diagnosis, and repair of general electrical including, lighting systems, instrument cluster and driver information systems, and body electrical systems.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Automotive Service Technology AAS

Are there prerequisites to this course?

Yes

Pre-reqs: AM-129

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?

✓ 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?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

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

1. diagnose general electrical systems,
2. diagnose and repair lighting systems,
3. diagnose and repair instrument cluster and driver information systems,
4. diagnose and repair body electrical systems,
5. use scan tools to interface with body electrical computer systems.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Electronic fundamentals
2. C.A.N. and network communications
3. Lighting and Signaling Circuits
4. Driver information and navigation systems
5. Body electrical 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 2022

Clackamas Community College
Online Course/Outline Submission System

Show changes since last approval in red

Section #1 General Course Information

Department: AUWD

Submitter

First Name: Rick
Last Name: Lockwood
Phone: 3053
Email: rickl

Course Prefix and Number: AM - 242

Credits: 5

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 100
Lab (# of hours):
Total course hours: 100

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: Engine Performance II

Course Description:

This course is the second of two engine performance courses. In this course the students will receive training in advanced lab scope diagnostics, advanced level scan tool usage, power train reprogramming and the opportunity to do real world diagnostics. On board diagnostics 2 (OBD2) readiness monitors and how they work will be discussed. Training and practical application of all monitored systems of the OBD2 system will be performed.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Automotive Service Technology AAS Degree

Are there prerequisites to this course?

Yes

Pre-reqs: AM-142

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 Only

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.

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. operate and navigate through generic and factory scan tools,
2. effectively use a lab scope to diagnose engine problems,
3. demonstrate all the steps to program a vehicles power train control module,
4. demonstrate, diagnose, and explain the function of various inputs and outputs of the power train control module;
5. demonstrate proper multi meter use to diagnose engine electrical problems.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. OBD 2 system monitors
2. Hands on lab scope training
3. Scan tool usage with generic and OEM scanners
4. PCM reprogramming
5. PCM inputs and outputs
6. 5 gas analysis
7. multi meter usage for practical application
8. Evaporative system testing
9. EGR system testing
10. Secondary Air injection system testing
11. Catalytic converter testing
12. Heated oxygen sensor testing
13. Ignition systems analysis and testing
14. Sensor input data analysis and testing
15. Actuator output analysis and testing

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

- | | |
|--------------------------------------|------------|
| 1. Increased energy efficiency | Yes |
| 2. Produce renewable energy | No |
| 3. Prevent environmental degradation | Yes |
| 4. Clean up natural environment | No |
| 5. Supports green services | No |

Percent of course: 50%

First term to be offered:

Specify term: Winter 2023

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: AUWD

Submitter

First Name: Rick
Last Name: Lockwood
Phone: 3053
Email: rickl

Course Prefix and Number: AM - 245

Credits: 5

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 100
Lab (# of hours):
Total course hours: 100

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: Automatic Transmission Systems

Course Description:

This course covers the theory and physical description of the automatic transmission. The student will have the opportunity to acquire practical experience and learn the proper procedures for overhaul, service, and diagnosis of an automatic transmission.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Automotive Service Technology AAS Degree

Are there prerequisites to this course?

Yes

Pre-reqs: AM-129

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 Only

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.

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. flush an automatic transmission and cooler,
2. explain automatic transmission power flow,
3. diagnose internal transmission problems related to power flow,
4. rebuild a front and/or a rear wheel drive automatic transmission,
5. connect, interpret, and diagnose transmission data using a scan tool and/or lab scope.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Planetary gear sets
2. Torque converters
3. Apply and holding devices
4. Hydraulic fundamentals
5. Transmission hydraulic systems
6. Transmission power flow
7. Transmission failure diagnosis procedures
8. Transmission fluids
9. Transmission coolers
10. Systematic diagnosis of transmission failures
11. Transmission electronics-theory
12. Transmission overhaul
13. Valve body overhaul

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 2023**

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: ASHP

Submitter

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

Course Prefix and Number: APR - 201MA

Credits: 4

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 88
Lab (# of hours):
Total course hours: 88

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: CNC I: Set-Up and Operation

Course Description:

This is the first course in the CNC sequence. Students will learn basic skills including how to properly set-up and operate both CNC milling and turning centers. Students will also learn G & M codes related to basic machine set-up and operation. Designed for persons with little or no previous CNC experience.

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): Industrial Mechanics and Maintenance Technologies AAS and CPC

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

Yes

Have you consulted with the Dept Chair(s) of other program(s) regarding potential impact such as overlap, duplication, enrollment, impact, etc.?

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

What was the result of the conversation with those department(s)?

added head count to classes

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?

✓ Not every term

Is this course equivalent to another?

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

Yes

Course Number: **MTT-121** Title: CNC I: Set-up and Operation

Will this course appear in the college catalog?

Yes

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 various systems that control both CNC milling and turning centers,
2. establish work offsets on CNC machines,
3. establish both initial tool offsets as well as make adjustments for tool wear and deflection,
4. perform 1st runs on CNC programs for the purpose of proving them out,
5. interpret and apply G & M codes that relate to basic machine set-up and operation,
6. transfer programs to and from CNC machine tools,
7. install and use basic work-holding hardware,
8. assemble and install tooling into CNC machines,
9. work safely around automated manufacturing equipment.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Computer Numerical Control (CNC) systems and nomenclature.
2. Cartesian coordinate system.
3. Machine start-up and shut-down procedures.
4. Set-up CNC vertical milling machine work and tool offsets.
5. Set-up CNC horizontal turning machine zero and tool offsets.
6. Work and tool offset adjustments.
7. CNC machine tooling and work holding basics.
8. G & M code basics.
9. Milling and turning 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%

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: ASHP

Submitter

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

Course Prefix and Number: APR - 202MA

Credits: 4

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 88
Lab (# of hours):
Total course hours: 88

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: CNC II: Programming and Operation

Course Description:

This is the second course in the CNC sequence. Students will learn G&M-code programming for milling and turning while they build their set-up and operation skills. There will also be an introduction to set-up probing, 4-axis mill programming and machining, sub-programming and process documentation.

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): Industrial Mechanics and Maintenance Technologies AAS and CPC

Are there prerequisites to this course?

Yes

Pre-reqs: APR-111MA, APR-201MA, MTH-050

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?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

Yes

Have you consulted with the Dept Chair(s) of other program(s) regarding potential impact such as overlap, duplication, enrollment, impact, etc.?

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

What was the result of the conversation with those department(s)?

added head count to classes

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?

✓ **Not every term**

Is this course equivalent to another?

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

Yes

Course Number: **MTT-122** Title: CNC II: Programming and Operation

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. describe how efficiencies are gained through the use of CNC technology to provide increased productivity and reduced product cost,
2. calculate tool points and use trigonometry to solve programming problems,
3. create and update operation plans, set-up sheet, and shop drawings to be use while processing parts;
4. write G & M code programs from scratch for both CNC milling and turning centers,
5. transfer programs to and from a CNC machine tools,
6. install and use work-holding hardware, including rotary axis hardware, to set-up machines;
7. properly apply advancements in cutting tool technology on both CNC milling and turning machines,
8. use both spindle and tool probes to perform set-ups on CNC machines,
9. perform 1st runs on CNC programs, that they have personally written, for the purpose of proving them out.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. CNC milling programming, set-up, and operation
2. CNC lathe programming, set-up, and operation
3. CNC part processing documentation.
4. G & M code programming.
5. Sub-programming
6. Rotary axis programming
7. Milling and turning 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%

First term to be offered:

Clackamas Community College
Online Course/Outline Submission System

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Edit

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Back

Reject

Publish

Section #1 General Course Information

Department: IDTD

Submitter

First Name: Mike

Last Name: Mattson

Phone: 3322

Email: mattsonm

Course Prefix and Number: CDT - 108A

Credits: 3

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 66

Lab (# of hours):

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: Introduction to SolidWorks

Course Description:

This course is an introduction to the SolidWorks parametric mechanical software. Students will design 3D solid parts, sheet metal parts and assemblies, and develop 2D documentation from them.

Type of Course: Career Technical Preparatory

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): Manufacturing programs

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

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?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

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

First Credit:

1. open a sketch on existing plane and create 2D geometry,
2. apply geometric relationships between sketch elements,
3. extrude, cut and sweep 2D geometry to create 3D solid models;

Second Credit:

4. loft and revolve 2D geometry to create 3D solids models,
5. add applied features to the 3D solid model,
6. apply mating relationships to 3D elements in an assembly,

Third Credit:

7. create 2D documentation of 3D solid models,
8. apply dimensions and annotation to the drawings,
9. document and manage 3D assemblies,
10. create sheet metal layouts.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Introduction to the SolidWorks desktop. Opening sketches on existing planes and orientating the screen to that plane. Sketching lines and tangent arcs, defining their length and relationship to other sketch entities.
2. Creating fillets and chamfers on parts. Creating revolved solids.
3. Creating hole features, patterns of holes and mirroring features.
4. Creating a part using revolve, loft, extrude and fillet/chamfer.
5. Using the sweep tool, creating helices, and using Shell to create hollow parts.
6. Creating 2D documentation from the 3D parts.
7. Assemblies from existing parts. Creating a part in the context of an assembly.
8. Sheet metal parts that unfold to make the flat pattern.

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: IDTD

Submitter

First Name: **Mike**
Last Name: **Mattson**
Phone: **3322**
Email: **mattsonm**

Course Prefix and Number: CDT - 223

Credits: 3

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 66
Lab (# of hours):
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: Inventor Fundamentals

Course Description:

Introduces parametric and adaptive modeling techniques using Autodesk Inventor. This course will guide students through design environment setup, creation of simple and complex part geometry, assembly building, animation, and detailed 2D drawing output.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Manufacturing Programs

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

Yes

Recommendations: Basic working knowledge of Windows operating system and Microsoft Excel

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.

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. communicate effectively using computerized graphical techniques,
2. demonstrate fundamental competency using AutoCAD Inventor software,
3. create solid models, assemblies, and drawings based on design intent;
4. create sheet metal parts with bends, folds, flanges, hems and seams;
5. animate simple kinematic assemblies and creating exploded assembly views.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Basic modeling.
2. Data management.
3. Using adaptive behavior.
4. Basic lofting / sweeping.
5. Sheet metal modeling.
6. Basic drafting options.
7. Creating and using ifeatures.
8. Assembly applications.
9. Presentation of parts and assemblies.
10. Creating and applying design views.
11. Creating and editing presentation files.

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: IDTD

Submitter

First Name: **Mike**
Last Name: **Mattson**
Phone: **3322**
Email: **mattsonm**

Course Prefix and Number: CDT - 225

Credits: 3

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 66
Lab (# of hours):
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: Advanced SolidWorks

Course Description:

Advanced features of SolidWorks will be discussed and problems will be worked that exemplify them. Subjects include equations, configurations, design tables and dynamics. Required: Student Petition.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Manufacturing Programs

Are there prerequisites to this course?

Yes

Pre-reqs: CDT-108A

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?

✓ 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. use equations in dimensions of a part design,
2. create and implement design tables in part design,
3. create advanced sheet metal parts and use forming tools,
4. create kinematics in sketches and assemblies,
5. understand and use Photo Works, Animator and send E-drawings.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Part design using equations.
2. Part design using design tables.
3. Advanced sheet metal design.
4. The use and creation of forming tools.
5. Pallet features.
6. Kinematics in sketches.
7. Kinematics in assemblies.
8. Dynamics and finite element analyzes.
9. Photo works and animator.
10. How to use E-Drawings to effectively communicate your design.

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

Show changes since last approval in red

Section #1 General Course Information

Department: Education, Human Services & Criminal Justice

Submitter

First Name: Laurette
Last Name: Scott
Phone: 503-594-3840
Email: laurette

Course Prefix and Number: ED - 101

Credits: 3

Contact hours

Lecture (# of hours): 10
Lec/lab (# of hours):
Lab (# of hours): 60
Total course hours: 70

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: Intro to Education Practicum & Seminar

Course Description:

This course introduces students to critical topics associated with the education profession. Each topic will be considered on an introductory level with an understanding that future classes will expand student comprehension and knowledge to a mastery level. Students are also required to participate in a 6 hour per week practicum to provide the opportunity to experience directly the various educational issues discussed in class. Required: Student Petition.

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): AAOT Elementary Education

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: 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 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. reflect on the practicum experience for purposes of career confirmation and identify next steps in personal education plan,
2. describe a classroom environment that is safe, inclusive, and equitable for all learners;
3. identify bias and diversity issues in the teaching environment,
4. describe effective teaching practices for student engagement and success,
5. apply and practice professional, ethical/legal knowledge and behavior.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. The Purpose of School
2. Today's Students
3. Effective Teachers
4. Ethical & Legal Issues in Education
5. Foundations of Education in the U.S.
6. The Teaching Profession

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
- SOU (Southern Oregon University)
- UO (University of Oregon)
- WOU (Western Oregon University)

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

ED 209 Practicum-SOU, ED 409-OSU Cascades, ED 293,294-OSU Hybrid

How does it transfer? (Check all that apply)

required or support for major

general elective

:

First term to be offered:

Specify term: **Fall 2022**

Clackamas Community College
Online Course/Outline Submission System

Show changes since last approval in red

Section #1 General Course Information

Department: Education, Human Services & Criminal Justice

Submitter

First Name: Laurette
Last Name: Scott
Phone: 3840
Email: laurette

Course Prefix and Number: ED - 113

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: Instructional Strategies for Literacy

Course Description:

This course develops an understanding of how to integrate literacy concepts and skills into all subjects. Curriculum design and assessment for Reading and Language Arts concepts and skills are explored, identified, and developed. Emphasis is placed on the role of literacy in the development of the whole student and on linking CTE curriculum to the literacy skills needed for students to be successful in their field. Designed for CTE instructors, but anyone interested in teaching literacy across the curriculum would benefit from this class.

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): CTE Licensure Prep certificate

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

✓ 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?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

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

1. identify the role that literacy plays in learning and discuss the shared responsibility for literacy development among all teachers,
2. describe the development of literacy in terms of reading, writing, listening, and speaking,
3. apply knowledge of the developmental stages of literacy to the selection of effective instructional strategies,
4. compare and contrast different types of literacy assessment and their role in planning for literacy instruction,
5. describe how to select literacy strategies to meet the needs of diverse students in content area classes.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Foundations of Literacy
2. Building and Activating Background Knowledge
3. Vocabulary Development
4. Promoting Reading Comprehension
5. Questioning Strategies
6. Collaborative Conversations
7. Graphic Organizers
8. Making and Taking Notes
9. Writing to Learn
10. Assessments

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)

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

Literacy Methods for CTE

How does it transfer? (Check all that apply)

required or support for major

general elective

:

First term to be offered:

Specify term: Fall 2022

Clackamas Community College
Online Course/Outline Submission System

Show changes since last approval in red

Section #1 General Course Information

Department: Education, Human Services & Criminal Justice

Submitter

First Name: Laurette
Last Name: Scott
Phone: 3840
Email: laurette

Course Prefix and Number: ED - 114

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: Instructional Strategies for Math

Course Description:

This course develops an understanding of how to integrate math concepts and skills into Career and Technical Education (CTE) courses and programs. Curriculum design and assessment for math concepts and skills are explored, identified, and developed. Designed for CTE instructors, but anyone interested in bringing more math into their classrooms could benefit from this class. Emphasis is placed on the role of math in the development of the whole student and on linking the CTE curriculum to the mathematics needed for students to be successful in their field.

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): Early Childhood Education & Family Studies AAS; CTE Licensure Prep certificate

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

✓ 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?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

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

1. demonstrate a curiosity and confidence for problem-solving through contextualized mathematics;
2. identify the math embedded in the CTE curriculum;
3. identify the skills and concepts needed to solve contextualized mathematics problems in CTE;
4. apply mathematical understanding to the context of teaching CTE;
5. identify characteristics of both growth and fixed mindsets and how they relate to teaching and learning mathematics.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Developing Growth Mindset in teachers and students
 - a. The difference between fixed a growth mindset
 - b. Strategies for recognizing and mitigating math anxiety in teachers and students
 - c. Understanding the role of metacognition and self-talk in developing a growth mindset?
2. Optimize the math in the CTE curriculum.
 - a. Math as an essential workplace skill
 - b. Find math in applied CTE scenarios
3. CTE Math Curriculum Design
 - a. Create curriculum maps that identify the intersection of occupational content and math constructs/concepts.
 - b. Create curriculum and a classroom environment that support conceptual understanding and application of mathematics in context of CTE
4. Instructional Strategies
 - a. Problem solving strategies and how to teach them
 - b. Teaching strategies aligned for the needs of the secondary student
 - c. Understand the role of andragogy in the CTE curriculum
5. Assessment
 - a. Designing direct and indirect assessment tools that address both understanding and proficiency.

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

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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)

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

Math Methods for CTE

How does it transfer? (Check all that apply)

✓ required or support for major

✓ general elective

:

First term to be offered:

Specify term: Fall 2022

Clackamas Community College
Online Course/Outline Submission System

Show changes since last approval in red

Section #1 General Course Information

Department: Education, Human Services & Criminal Justice

Submitter

First Name: Laurette
Last Name: Scott
Phone: 3840
Email: laurette

Course Prefix and Number: ED - 130

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: Comprehensive Classroom Management

Course Description:

This course focuses on creating positive classroom and school climates, organizing and managing classrooms, improving instruction, dealing with classroom discipline problems, developing individualized plans for students experiencing behavioral problems, and developing school-wide student management programs-characteristics of effective schools and teachers.

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): CTE Licensure Prep certificate

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

✓ 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?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

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

1. identify the psychological needs of students which influence behavior and success at school,
2. analyze and apply effective classroom management theories,
3. develop classroom procedures and behavior standards designed to create a positive learning environment,
4. identify instructional strategies that increase student motivation and learning,
5. develop effective classroom systems for responding to behaviors which disrupt the learning environment.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Elements of classroom management.
2. Student's basic psychological needs.
3. Teacher-student relationships.
4. Positive peer relationships.
5. Working with families and caregivers.
6. Classroom behavior standards.
7. Enhancing student motivation.
8. Responding to disruptive behavior.
9. The problem solving approach.
10. Individual behavior plans.

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)
- ✓ SOU (Southern Oregon University)
- ✓ OSU (Oregon State University)
- ✓ WOU (Western Oregon University)

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

Classroom Management, Methods for Classroom Management,

How does it transfer? (Check all that apply)

✓ required or support for major

✓ general elective

:

First term to be offered:

Specify term: Fall 2022

Clackamas Community College
Online Course/Outline Submission System

Show changes since last approval in red

Section #1 General Course Information

Department: Education, Human Services & Criminal Justice

Submitter

First Name: Laurette
Last Name: Scott
Phone: 3840
Email: laurette

Course Prefix and Number: ED - 131

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: Instructional Strategies

Course Description:

This course examines the knowledge, skills, and characteristics of effective teachers. The focus of the course is on successful instructional planning and the delivery of curriculum. This course covers teacher-centered and student-centered instructional strategies and ways to differentiate instruction for diverse learners.

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): CTE Licensure Prep certificate

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

✓ 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?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

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

1. identify the key characteristics of effective teachers,
2. describe the relationship between curriculum standards and instructional objectives and explain how each is addressed through effective lesson planning,
3. apply the principles of effective lesson and unit planning to design standards-based lessons which meet learning outcomes and objectives,
4. evaluate examples of research-based teaching strategies & models of instruction used to differentiate instruction in order to address the needs of diverse students,
5. identify the purpose and uses of assessment and the characteristics of quality student assessment models.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Characteristics of effective teachers
2. Diverse students
3. Standards and objectives
4. Unit and Lesson Planning
5. Questioning strategies
6. Direct Instruction strategies
7. Indirect Instruction strategies
8. Self-directed Learning
9. Cooperative Learning & Collaboration
10. Assessment

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)
- ✓ SOU (Southern Oregon University)
- ✓ OSU (Oregon State University)
- ✓ WOU (Western Oregon University)

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

Curriculum, Instruction, and Assessment; Instructional Strategies; Curriculum & Instruction

How does it transfer? (Check all that apply)

✓ required or support for major

✓ general elective

:

First term to be offered:

Specify term: Winter 2023

Clackamas Community College
Online Course/Outline Submission System

Show changes since last approval in red

Section #1 General Course Information

Department: Education, Human Services & Criminal Justice

Submitter

First Name: Laurette
Last Name: Scott
Phone: 3840
Email: laurette

Course Prefix and Number: ED - 169

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: Overview of Students with Special Needs

Course Description:

Provides an introduction to the categories of disability described in the Individuals with Disabilities Education Act (IDEA). Topics include definitions under federal law, implications in school settings, and intervention strategies to meet students' special needs.

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): ECE and Family Studies AAS; AAOT Elementary ED

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

✓ **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?

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 disability categories eligible under IDEA and explain how each is identified;
2. research instructional strategies and community services available for students with special needs;
3. identify characteristics of specific disabilities and describe recommended educational practices and strategies;
4. explain possible concerns and perspectives of families of students with disabilities and strategies to build partnerships with families;
5. explain the purposes and principles of the Individuals with Disabilities Education Act of 2004 (IDEA).

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Overview of history of special education, fundamental concepts and provisions of current federal special education legislation.
2. The special education process: members of the team, evaluation and eligibility, components of an Individualized Education Plan, placement in the Least Restrictive Environment, dispute resolution.
3. Early intervention and early child special education.
4. Multicultural and linguistic perspectives: how culture affects the learning process, disproportionate representation, recommended practices for diverse students.
5. Collaboration in special education: parent and family perspectives, strategies for working with parents and professionals.
6. Overview of special needs: definitions, prevalence, characteristics, identification, recommended educational practices
 - a. Learning disabilities,
 - b. Attention deficit-hyperactivity disorder,
 - c. Emotional and behavior disorders,
 - d. Intellectual and developmental disabilities,
 - e. Speech and language disorders,
 - f. Autism spectrum disorders,
 - g. Low-incidence disabilities: physical and health disabilities, severe and multiple disabilities, deaf and hearing impaired, visual impairments.

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?
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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)
- ✓ UO (University of Oregon)
- ✓ WOU (Western Oregon University)

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

ED 259-Intro to SPED & Inclusive Communities; SPED 417 Intro to Special Education; SPED 557 Current Issues in SPED; SPED 407 Intro to Dev. Disabilities

How does it transfer? (Check all that apply)

✓ required or support for major

✓ general elective

:

First term to be offered:

Specify term: Winter 2023

Clackamas Community College
Online Course/Outline Submission System

Show changes since last approval in red

Section #1 General Course Information

Department: EHCJ

Submitter

First Name: Laurette
Last Name: Scott
Phone: 503-594-3840
Email: laurette

Course Prefix and Number: ED - 216

Credits: 4

Contact hours

Lecture (# of hours): 44
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 44

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: Foundations of Teaching & Education

Course Description:

Provides an overview of the educational system in the U.S. including historical, legal, and philosophical foundations of education. Explores the financing, governance and organization of education as well as current issues impacting our educational system. Provides an overview of diversity in educational settings and the characteristics and ethical obligations of effective schools and professional educators. Examines career options and pathways in the field of education.

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): AAOT Elementary Education, CTE Licensure Prep certificate

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

- ✓ 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. analyze current issues in education through historical, sociological, political and philosophical lenses and apply analysis to educational systems as levers of social justice;
2. develop and articulate an initial personal philosophy of education through examination of different schools of thought,
3. identify the roles, professional responsibilities and ethical expectations of teachers in today's schools, and link this to individual identity and career goals;
4. explain how difference is socially constructed in educational settings,
5. using historical and contemporary examples, describe how perceived difference, combined with unequal distribution of power across economic, social, and political institutions, result in discrimination in education;
6. analyze ways in which the interactions of social categories such as race, ethnicity, social class, gender, religion, sexual orientation, disability and age are related to difference, power and discrimination in education in the United States.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Historical, philosophical, and sociological foundations of education
2. Diversity in schools and society
3. Financing and governing of U.S. schools
4. School law and ethics
5. Curriculum, standards, assessment, and accountability
6. The teaching profession

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
- ✓ SOU (Southern Oregon University)
- ✓ UO (University of Oregon)
- ✓ WOU (Western Oregon University)

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

ED 216 @ OSU, OSU-Cascade; ED 459 @SOU; EDST 111 @ UO; ED 438 @ WOU; ED 242 @ EOU

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
Online Course/Outline Submission System

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Section #1 General Course Information

Department: Education, Human Services & Criminal Justice

Submitter

First Name: Laurette
Last Name: Scott
Phone: 3840
Email: laurette

Course Prefix and Number: ED - 229

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: Learning & Development

Course Description:

Focuses on foundational ideas, concepts, principles, and theories in the field of educational psychology that have a significant influence on educational practice. Provides students with an overview of psychological theories regarding human development, intelligence, motivation, and the learning process. Students learn how to apply strategies and techniques derived from these theories in the classroom.

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): CTE Licensure Prep certificate, AAOT Elementary ED

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

✓ **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?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

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

1. compare and contrast theories of learning, memory, and cognitive development and their implications for classroom practice;
2. identify techniques to accommodate students' developmental differences and diversity;
3. explain how motivation affects both behavior and cognition in classroom settings;
4. demonstrate an understanding of major theories of personal, social, and moral development and how to promote development of prosocial behaviors in the classroom;
5. describe various assessment strategies and the use of different strategies for different purposes.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. The impact of psychology on the field of education.
2. Learning and memory.
3. Social and cultural diversity.
4. Cognitive development.
5. Motivation theory.
6. Personal, social, and moral development.
7. Instructional and assessment strategies.
8. Effective classroom environments.

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)
- ✓ OSU (Oregon State University)
- ✓ SOU (Southern Oregon University)
- ✓ OSU-Cascade
- ✓ UO (University of Oregon)
- ✓ WOU (Western Oregon University)

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

EDU 313, HDFS 311, ED 240, EDST 211, ED 242 or ED 231

How does it transfer? (Check all that apply)

✓ required or support for major

✓ general elective

:

First term to be offered:

Specify term: Winter 2023

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: EHCJ

Submitter

First Name: Dawn

Last Name: Hendricks

Phone: 6158

Email: dawn.hendricks

Course Prefix and Number: ED - 254

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: Instructional Strategies for Dual Language Learners

Course Description:

Examines pedagogical and cultural approaches which lead to successful development of English language skills and content knowledge for children who speak a home language other than English.

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:

✓ **Writing**

✓ **Oral Communication**

✓ **Social Science**

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

Yes

Name of degree(s) and/or certificate(s): **Early Childhood Education & Family Studies 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?

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?

✓ **Winter**

Is this course equivalent to another?

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

Yes

Course Number: ECE-254ES Title: Estrategias de Instrucción para Estudiantes de Dos

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. compare and contrast theories of second language acquisition,
 2. discuss the historical and legal foundations of educating children who are dual language learners,
 3. explain the types of current English language development programs serving children from infancy through secondary school,
 4. individualize instructional strategies to meet all children's needs,
 5. implement strategies for more effective communication with children who are dual language learners,
 6. build collaborative partnerships with families of children who are dual language learners,
 7. assess children who are dual language learners.
-

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:

1. Use appropriate mathematics to solve problems.
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

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

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:

- ✓ Presentations
- ✓ Projects
- ✓ Writing Assignments

:

Major Topic Outline:

1. Definition of second language acquisition.
2. Theories of second language acquisition.
3. Historical and legal foundations.
4. Student age and second language acquisition.
5. Impact of second language acquisition on cognitive and social/emotional development.
6. Utilization of total physical response (TPR).
7. Second language teaching in the content areas.
8. Partnering with families.
9. Assessment.

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)

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)

Other. Please explain.

Articulation agreement

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: Education, Human Services & Criminal Justice

Submitter

First Name: Laurette
Last Name: Scott
Phone: 3840
Email: laurette

Course Prefix and Number: ED - 258

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: Multicultural Education

Course Description:

Covers the philosophy, activities, and techniques appropriate to a culturally relevant classroom for students from pre-Kindergarten through post-secondary. Emphasizes understanding the impact of culture on individual perception and learning and group dynamics.

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): CTE Licensure Prep certificate; Early Childhood Education & Family Studies certificate; AAOT Elementary ED

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

Yes

Area: Human Relations

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 characteristics and purpose of education that is culturally relevant;
2. identify strategies for affirming cultural diversity in the classroom;
3. describe curriculum and instructional strategies which provide equal educational opportunities for diverse students;
4. identify legal and ethical issues related to multicultural education;
5. discuss the impact of an individual's culture on their performance in academic settings.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Foundations of multicultural education.
2. Ethnicity and race.
3. Class and socioeconomic status.
4. Gender identity.
5. Sexual orientation.
6. Exceptionality and ableism.
7. Language.
8. Religion.
9. Geography.
10. Youth culture.
11. Culturally relevant pedagogy.

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

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3. Will the course be accepted as part of the University's distribution requirements?

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

- EOU (Eastern Oregon University)**
- OSU (Oregon State University)** **UO (University of Oregon)**
- OSU-Cascade**

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

ED 130 Multicultural ED, ED 219 @ OSU, EDST 225 @ UO

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
Online Course/Outline Submission System

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Section #1 General Course Information

Department: Counseling

Submitter

First Name: **Guadalupe**

Last Name: **Martinez**

Phone: **3185**

Email: **lupem**

Course Prefix and Number: FYE - 101

Credits: 2

Contact hours

Lecture (# of hours): 22

Lec/lab (# of hours):

Lab (# of hours):

Total course hours: 22

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: First Year Experience Level I

Course Description:

This is the first course in a 3-course sequence designed to help students adjust to a new campus, connect with other students, understand college expectations and systems, and access services available through the college. The First Year Experience Level I course is designed to help students in developing relationships with students and faculty, and to build student behaviors for successfully completing classes and continuing college through to completion.

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): various AAS and Certificates, including Horticulture, ECE, Business

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

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: No

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.

Yes

Course Number: FYE-101ES Title: Experiencia de Primer Año (First Year Experience e

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. complete course assignments using Moodle and MyClackamas;
2. demonstrate elements of comprehensive college planning including developing an academic plan and using Self-Service;
3. demonstrate self-reflection in evaluating their academic progress;
4. exhibit effective student behaviors including personal and social awareness, engagement in the academic community, and use of college resources;
5. attend college activities or events that lead to increased knowledge of the college and engagement with members of the college community.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Welcome to College
2. Time Management
3. Library and College Resources
4. Educational Planning
5. Goal Setting
6. Self-efficacy and Social Awareness
7. Stress Management
8. Next Term Readiness Checklist/Gratitude

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

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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)

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

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: IDTD

Submitter

First Name: Mike
Last Name: Mattson
Phone: 3322
Email: mattsonm

Course Prefix and Number: IMT - 220

Credits: 3

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 66
Lab (# of hours):
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: Industrial Machinery II

Course Description:

This second course in industrial machinery will focus on advanced concepts in machinery trouble shooting, repair and maintenance. Students will learn about the integration of mechanical, fluid power and electrical systems, their characteristics and repair. Additionally, mechanical concepts of laser shaft alignment, vibration analysis and thermal diagnosis will be covered. Other topics will include electromechanical systems, lock-out tag-out, advanced mechanical diagnosis, motors and motor controls.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Industrial Maintenance Technology AAS & Industrial Maintenance Technology CC

Are there prerequisites to this course?

Yes

Pre-reqs: IMT-120

**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?

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?

✓ **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. use computer-aided tools to design elementary mechanical drive systems,
2. describe and perform preventative maintenance on electromechanical systems,
3. describe the function of fluid power systems in relation to machinery operation and implement repair and installation of these elements,
4. use diagnostic tools to determine the condition of electrical components and circuits,
5. perform alignment of rotating shafts with laser calibration tools,
6. diagnose the failure of bearing systems; repair and replace plain and rolling element bearings;
7. analyze vibration data to diagnose component failures in power transmission components.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Mechanical Drive Design
2. Fluid Power Applications
3. Vibration and Thermal Analysis
4. Shaft Alignment
5. Industrial Electricity Review
6. Electrical Machines: Transformers, Motors and Starters
7. Variable Speed Drives

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:

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: HTHS

Submitter

First Name: Sarah
Last Name: Parker
Phone: 0695
Email: sarah.parker

Course Prefix and Number: MA - 116

Credits: 4

Contact hours

Lecture (# of hours): 44
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 44

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: Introduction to Medications

Course Description:

Introduces the medical assistant student to the foundational concepts and principles of pharmacology; including the classifications of common medications including: indications for use, desired effect, side effect, adverse effects, and patient education. Related pathophysiology will be discussed. Required: Student Petition.

Type of Course: Career Technical Preparatory

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): Medical Assistant Certificate

Are there prerequisites to this course?

Yes

Pre-reqs: MA-110, and WR-101 or WR-121. BI-120, or BI-101 & BI-102, or BI-231 & BI-232 & BI-233

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: MA-112 and MA-145

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

Yes

Recommendations:

Requirements: Student must be enrolled in current Medical Assistant cohort. 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: 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.

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. identify the classifications of medication including indications for use, desired effects, side effects, and adverse reactions;
2. verify the rules of medication administration as they apply to oral or parenteral drug administration,
3. identify common disease processes as related to common drug groups,
4. identify common medication names by trade and generic name,
5. demonstrate appropriate patient education related to the medication prescribed.

This course does not include assessable General Education outcomes.

Major Topic Outline:

- 1.Principles of drug actions
 - a. Identify the classifications of medication including:
 - i. Indications for use
 - ii. Desired effects
 - iii. Side effects
 - iv. Adverse reactions
 - v. Patient education
2. Medication therapy
3. Antiinfectives
 - a. Antibiotics
 - b. Antifungals
 - c. Antivirals
4. Drugs for and common diseases of the gastrointestinal system
5. Drugs for and common diseases of the respiratory system
6. Drugs for and common diseases of the cardiovascular system
7. Drugs for and common diseases of the urinary system and fluid balance
8. Drugs for and common diseases of the endocrine system
9. Drugs for and common diseases of the nervous system
10. Drugs for the pediatric patient

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 2022**

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Section #1 General Course Information

Department: HTHS

Submitter

First Name: Sarah

Last Name: Parker

Phone: 0695

Email: sarah.parker

Course Prefix and Number: MA - 118L

Credits: 1

Contact hours

Lecture (# of hours):

Lec/lab (# of hours):

Lab (# of hours): 33

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: Examination Room Techniques Lab

Course Description:

This course covers fundamental skills which focus on the clinical techniques and competencies (psychomotor & affective) involved in safe, efficient and quality exam room patient care and provider support. Special emphasis will be placed on the principles and skills of medical and surgical asepsis, infection control and safety in all exam room practices; preventative procedures, common diagnostic testing and related pathology, use of currently accepted techniques for and equipment in medication administration (excluding IV administration), patient care and interaction, and accurate documentation. This course provides a basis for critical thinking skills in the ambulatory setting. Required: Student Petition.

Type of Course: Career Technical Preparatory

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): Medical Assistant Certificate of Completion

Are there prerequisites to this course?

Yes

Pre-reqs: MA-112, MA-116, and MA-145

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: MA-117, MA-117L, MA-118, and MTH-054

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

Yes

Recommendations:

Requirements: Student must be enrolled in current Medical Assistant cohort. 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?

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 infection control, safety, and bloodborne pathogen principles and techniques to the practice of medical assisting;
2. calculate and administer oral & parenteral medications,
3. concisely and accurately communicate relevant patient information both to and about the patient meeting the patient's health literacy,
4. safely & accurately demonstrate entry level patient care skills. diagnostics and procedures as related to common pathologies,
5. perform within the legal scope of practice of a medical assistant,
6. demonstrate respect for the patient as an individual assuring patient rights & cultural competence,
7. apply confidentiality measures with each patient.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Infection control.
 - Bloodborne pathogens.
 - Sterilization techniques.
2. Medical and surgical asepsis.
 - Sterile set-up.
 - Wound care.
 - Bandaging techniques.
 - Surgical staple and suture removal
 - Isolation techniques
3. Assisting with minor surgical procedures
4. Vital signs.
5. Obtaining Patient history.

- 6. Accurate documentation.
- 7. Assisting with the physical exam.
- 8. Specialty procedures, tests and screenings.
 - Pulmonary function tests
 - Vision exams
 - Ear care
 - TB screens
- 9. 12-Lead Electrocardiograms.
- 10. Administering medications.
 - Oral.
 - Intramuscular.
 - Subcutaneous.
 - Intradermal.
- 11. Vaccinations.
 - Documentation
 - Vaccine Information Statements (CDC)
 - Administration of needless vaccine
 - CDC child \ adult Schedules
 - Preparing/ Administration / safe storage of vaccines.
- 12. Pediatrics.
 - assisting with well child exams
 - safety considerations
 - pediatric vital signs
 - varied vaccine schedules (CDC)
 - injection techniques unique to infants & children
- 13. Coaching a patient
 - Health maintenance
 - Disease prevention
 - Face to face communication
- 14. Navigating the exam room
 - Lifespan considerations
 - Cultural considerations
- 15. First Tooth
 - Pediatric Oral preventative services
 - Fluoride varnish application
 - Culturally appropriate techniques

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 2022

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Section #1 General Course Information

Department: HTHS

Submitter

First Name: Sarah

Last Name: Parker

Phone: 9713447772

Email: sarah.parker

Course Prefix and Number: MA - 145

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: Insurance & Health Information Management

Course Description:

This course introduces medical assisting students to practical applications for billing medical insurance both manually and electronically. The course is designed to instruct the student in all phases of billing and insurance procedures and entry level Electronic Health Record software for the management of medical records. It also teaches Front Office finance skills including bookkeeping, banking and collections. The students are also introduced to basic ICD-10 Diagnosis and Procedural coding skills. This course is required for medical assistant students. This course does not meet the requirements for Insurance Coder certification. Required: Student Petition.

Type of Course: Career Technical Preparatory

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): Medical Assistant Certificate

Are there prerequisites to this course?

Yes

Pre-reqs: MA-110, and WR-101 or WR-121. BI-120, or BI-101 & BI-102, or BI-231 & BI-232 & BI-233

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?

Yes

Co-reqs: MA-112 and MA-116

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

Yes

Recommendations:

Requirements: Student must be enrolled in current Medical Assistant cohort. 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: 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.

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 proper utilization of basic forms for patient registration, fees and insurance claims forms;
2. demonstrate the correct usage of CPT, HCPCS and ICD-10 billing codes;
3. identify basic coding guidelines, including Fraud, Waste and Abuse;
4. demonstrate correct insurance billing, including managing the "life-cycle" of a claim through payment/denial;
5. demonstrate computerized and manual bookkeeping and banking skills;
6. demonstrate accurate entry level EHR applications;
7. differentiate between types of medical health insurance;
8. demonstrate knowledge of laws and regulations pertaining to healthcare, such as HIPAA, Meaningful Use, HITECH Act, False Claims Act, Fair Debt Collections Act (FDCA), and Stark Law and others;
9. apply medical terminology appropriately to health insurance claim forms.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Terminology
 - a. Medical terminology
 - b. Insurance terminology
 - c. Bookkeeping and Banking terminology
 - d. Electronic Health Record terminology
2. Health insurance claim forms
 - a. Preauthorization and Referrals
 - b. Nuances between types of insurances
 - c. Procedural codes: CPT coding and Modifiers
 - d. Diagnostic coding: ICD-10
 - e. HCPCS coding
 - f. CMS 1500 02/12
 - g. Third party guidelines

- h. NPI
- 3. Bookkeeping and Banking
 - a. Bookkeeping terminology
 - b. Post entries to a Day Sheet
- i. Manual
- ii. Electronic
- c. Manually and electronically post charges, payments and adjustments, refunds and NSF
- d. Manual and electronic banking curriculum
- 4. Entry Level skills in Electronic Health Record
 - a. Registering and scheduling patient and daily appointments
 - b. Inputting clinical information into the patient chart
 - c. Completing claims, billing and coding skills in a patient chart
 - d. Updating ledgers and Day sheets and completing patient statements

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 2022

Clackamas Community College
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Section #1 General Course Information

Department: IDTD

Submitter

First Name: **Mike**
Last Name: **Mattson**
Phone: **3322**
Email: **mattsonm**

Course Prefix and Number: MFG - 221

Credits: 3

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 66
Lab (# of hours):
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: Materials Science

Course Description:

Introduces metallurgy and material science. Extractive and physical metallurgy will be covered. Specific topics include heat treatment, materials analysis, the iron carbon phase diagram, composites, ceramics and industrial plastics.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Manufacturing Programs

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

Yes

Recommendations: MTH-050

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**

✓ **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. identify the difference between ferrous and non-ferrous metals,
2. describe the processes involved in the heat treatment of steels,
3. make informed choices when selecting commercial materials,
4. understand the crystalline structure of metals,
5. measure the hardness of metals,
6. perform standard destructive and nondestructive testing,
7. recognize the common polymers and be familiar with their properties.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Structure of materials.
2. Properties of materials.
3. Steel products.
4. Heat treatment of steels.
5. Carbon and alloy steels.
6. Tool steels.
7. Stainless steels.
8. Aluminum alloys.
9. Principles of polymeric materials.

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

:

March 4, 2022

Course Number	Title	Implementation
RET-220	SCADA Fundamentals	2022/SP
ES-211	Introduction to Latino/a/x Studies	2022/SP

Clackamas Community College
Online Course/Outline Submission System

Section #1 General Course Information

Department: IDTD

Submitter

First Name: Abe
Last Name: Fouhy
Phone: 5035943659
Email: abef

Course Prefix and Number: RET - 220

Credits: 3

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 66
Lab (# of hours):
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: SCADA Fundamentals

Course Description:

This course will introduce Supervisory Control and Data Acquisition (SCADA) to monitor and control industrial and renewable energy applications. Students will evaluate, design, and select one or more technologies for remote monitoring and actuation. Topics may include networking, hardware considerations, programming, monitoring systems, relays, motors, driver circuits, and electronics. Includes hands-on lab exercises.

Type of Course: Career Technical Preparatory

Reason for the new course:

Program expansion.

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): Renewable Energy AAS

Are there prerequisites to this course?

Yes

Pre-reqs: RET-200

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?

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: 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?

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 factors that make SCADA different from other process-control systems,
2. analyze protocol rules of Field Bus and Mod Bus used to enable machines to communicate with other machines
3. describe how SCADA is used for evolving smart grids, electric generation, transmission, and distribution;
4. construct architectures using wiring methods that are common to SCADA systems,
5. distinguish the common functions of data acquisition, information display, supervisory control, sequence of events acquisition, and data calculations;
6. configure Remote Terminal Units (RTUs) and select protocols based on field parameters and considerations,
7. describe the importance of the Human Machine Interface (HMI), PLCs and RTUs as essential parts of supervisory control and monitoring systems.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Networking fundamentals
2. Exploring industrial networks
3. Fundamentals of PLC's SCADA hardware
4. Devices IO and analog systems
5. Industrial communication protocols
6. Programming, controlling and installation
7. Human Machine Interfaces, alarms, monitoring and control
8. Smart grid fundamentals
9. SCADA in Smart Grids

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%

Clackamas Community College
Online Course/Outline Submission System

Section #1 General Course Information

Department: Counseling

Submitter

First Name: Guadalupe
Last Name: Martinez Zapata
Phone: 503-594-3185
Email: lupem

Course Prefix and Number: ES - 211

Credits: 4

Contact hours

Lecture (# of hours): 44
Lec/lab (# of hours):
Lab (# of hours):
Total course hours: 44

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: Introduction to Latino/a/x Studies

Course Description:

An introductory and survey course analyzing the historical context of Latinos in the United States (US). Beginning with pre-colonial societies on the American Continent, colonization, and moving to the modern Latinx diaspora. Special attention will be given to particular events that shaped and continue to influence the Latinx experience, such as the Mexican-American War, US expansionism, US immigration policy, the Chicano Movement, US foreign policy in Latin America, and the contemporary discourse regarding Latinx in the US.

Type of Course: Lower Division Collegiate

Reason for the new course:

One of 4 courses that will form part of a new Ethnic Studies transfer program

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:

✓ Social Science

✓ Cultural Literacy

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?

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: No

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. Identify and discuss significant events that shaped the history of the Chican@/x-Latin@/x experience. (SS1) (CL1)
 2. Place significant events that shaped the history of the Chican@/x-Latin@/x experience in context. (SS1) (CL1)
 3. Demonstrate increased knowledge of the experiences of Chican@/x-Latin@/x peoples as residents and citizens in the United States. (SS2)
 4. Demonstrate increased knowledge of the contributions made by Chican@/x-Latin@/x peoples to American life. (SS2)
 5. Demonstrate increased ability to apply course concepts in academic and personal discourse. (SS2) (CL1)
-

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:

1. Use appropriate mathematics to solve problems.
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

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

- C 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**
- ✓ **Multiple Choice Test**
- ✓ **Rubrics**

:

Major Topic Outline:

- Pre-colonial societies
- Impact and legacy of Colonialism
- Race, ethnicity and Latinx pan-ethnic labels
- US expansionism as a cause of migration
- The Chicano Movement
- Latinx branches in the US
- Contemporary Latinx discourse

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)**

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

ES 211 (OSU)
ChLa 201 (PSU)

How does it transfer? (Check all that apply)

required or support for major

:

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

Correspondence with receiving institution (mail, fax, email, etc.)

First term to be offered:

Next available term after approval

:

March 4, 2022

Course	Current Hours/Credits	Proposed Hours/Credits
APR-104MA	24 LECT/2 Credits	33 LECT/3 Credits
APR-111MA	66-198 LE/LA; 3-9 Credits	88 LE/LA; 4 Credits
APR-112MA	66-198 LE/LA; 3-9 Credits	88 LE/LA; 4 Credits

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Section #1 General Course Information

Department: ASHP

Submitter

First Name: Shelly

Last Name: Tracy

Phone: 0945

Email: shellyt

Course Prefix and Number: APR - 104MA

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: Print Reading

Course Description:

Introduction to basic print reading. Students will use the principles of orthographic projection and current industry standards as they apply this knowledge to interpreting manufacturing prints.

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): Industrial Mechanics & Maintenance Technologies AAS and CPC

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

Yes

Have you consulted with the Dept Chair(s) of other program(s) regarding potential impact such as overlap, duplication, enrollment, impact, etc.?

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

What was the result of the conversation with those department(s)?

added head count to classes

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?

✓ Not every term

Is this course equivalent to another?

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

Yes

Course Number: MFG-104 Title: Print Reading

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. visualize and describe a 3D part from an orthographic representation,
2. identify Notes and Revision information,
3. extract dimensional information and finish information,
4. utilize basic print reading terminology used in industry,
5. effectively discuss the represented part or assembly,
6. demonstrate the care and handling of prints.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. What is a Print.
2. The Alphabet of Lines.
3. Multi View Drawings.
4. Auxiliary Views.
5. Section Views.
6. Threads and Fasteners.
7. Dimensioning.
8. Tolerancing.
9. Machining Specifications.
10. Surface Quality.
11. Introduction to GD&T Symbols.
12. Detail Drawings.
13. Assembly Drawings.
14. Pictorial Drawings.
15. Title Blocks.
16. List of Materials.
17. Drawing Notes.
18. Revisions.
19. Welding Prints.
20. Sheet Metal Prints.

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

Show changes since last approval in red

Print

Edit

Delete

Back

Reject

Publish

Section #1 General Course Information

Department: ASHP

Submitter

First Name: Shelly

Last Name: Tracy

Phone: 0945

Email: shellyt

Course Prefix and Number: APR - 111MA

Credits: 4

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 88

Lab (# of hours):

Total course hours: 88

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: Manual Machining I

Course Description:

This course is an introduction to machine tool operation and precision measurement. It covers elementary operation of drill presses, bandsaws, lathes, and milling machines. The course includes external threading.

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): Industrial Mechanics and Maintenance Technologies AAS and CPC

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: Prerequisite or Corequisite: APR-104MA and MTH-050

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?

No

Is there any other potential impact on another department?

Yes

Have you consulted with the Dept Chair(s) of other program(s) regarding potential impact such as overlap, duplication, enrollment, impact, etc.?

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

What was the result of the conversation with those department(s)?

added head count to classes

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?

✓ **Not every term**

Is this course equivalent to another?

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

Yes

Course Number: **MTT-111** Title: **Manual Machining I**

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. identify the equipment and behaviors necessary for safety in the machine shop environment,
2. identify cutting tool materials and calculate their proper RPM and feed rates,
3. use precision measurement to inspect machined elements,
4. describe the major components and associated tooling related to milling machines and lathes,
5. identify and implement common work holding devices for lathes and mills,
6. adjust the settings of common machine tools for the proper feed and speed,
7. demonstrate the process for centering a 4-jaw chuck,
8. setup and perform single-point threading on a lathe,
9. demonstrate safe setup, operation, and proper work holding procedures on mills and lathes,
10. demonstrate the safe setup operation and blade selection of horizontal and vertical band saws,
11. plan and perform tapping and die threading operations by hand and machine,
12. demonstrate the safe and proper use of a pedestal grinder.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Shop safety
2. Speed and feed calculations for milling, turning and drilling.
3. Unit conversion conversions
4. Reading and handling of steel rules
5. Precision measurement with calipers and micrometers
6. Application of transfer measurement tools
7. Manual lathe use and application for O.D turning, facing and drilling
8. Cutting tools for turning
9. Workholding on a lathe including chucks, collets and faceplate
10. The calculations, setup and measurement for sixty-degree external threads
11. Milling machine setup and operation
12. Setup and operation of a drill press
13. Application and setup of counterboring, countersinking and spotfacing tools
14. Setup and operation of horizontal and vertical band saws
15. Taps and tapping applications
16. Types and application of thread cutting dies
17. Pedestal grinder safety and operation

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

Show changes since last approval in red

Section #1 General Course Information

Department: ASHP

Submitter

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

Course Prefix and Number: APR - 112MA

Credits: 4

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 88
Lab (# of hours):
Total course hours: 88

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: Manual Machining II

Course Description:

This course is a continuation of machine tool operations. It covers set-up and operation of the vertical milling machine, lathe boring techniques, surface grinding and screw thread nomenclature.

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): Industrial Mechanics and Maintenance Technologies AAS and CPC

Are there prerequisites to this course?

Yes

Pre-reqs: APR-111MA

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?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

Yes

Have you consulted with the Dept Chair(s) of other program(s) regarding potential impact such as overlap, duplication, enrollment, impact, etc.?

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

What was the result of the conversation with those department(s)?

added head count to classes

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?

✓ Not every term

Is this course equivalent to another?

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

Yes

Course Number: **MTT-112** Title: **Manual Machining II**

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. apply basic geometric dimensioning and tolerancing symbols to machining operations,
2. compare and select cutting tool materials for optimal durability, efficiency and quality;
3. describes all aspects of turning with centers including tailstock use, turning between centers and tailstock alignment;
4. describe situations when reaming should be selected and identify relevant tooling parameters,
5. perform and troubleshoot parting operations,
6. identify principles that are used to reduce chatter during turning operations,
7. describe the application of a steady rest and a follow rest for turning,
8. identify common nomenclature associated with screw threads including thread series, form, lead, pitch and diameter specifications;
9. identify the major components of the vertical milling machine,
10. demonstrate milling machine setup including tooling selection and workholding,
11. perform basic milling machine operations including face, slot and side milling and hole making;
12. compare conventional and climb milling,
13. identify and select tooling for surface grinding,
14. setup and perform high-precision surface grinding.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Basic geometric and dimensioning symbols
2. Metal cutting mechanics
3. The identification and application cutting fluids
4. Cutting tool materials and selection
5. Turning between centers
6. Tapered and expanding mandrels
7. Alignment of the lathes center
8. Lathe operations such as drilling, boring, reaming, tapping, parting off and knurling
9. Application of steady and follow rests
10. Screw thread nomenclature
11. Knee-type vertical milling machine components and their function
12. Workholding and cutting tools for milling
13. Squaring the milling head
14. Align a workpiece parallel to the axis of the table
15. Locating the workpiece corner with an edge finder
16. Locating the center of a bore with a dial indicator

- 17. Speed and feed calculations
- 18. Applications for the rotary table or indexing head
- 19. Grinding wheel selection, handling, truing and dressing
- 20. Work holding devices for the surface grinder
- 21. Setups and operations on the surface grinder
- 22. The general cause of surface grinding problems

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

:

March 4, 2022

Course Number	Title	Implementation
APR-113MA	Manual Machining III	2022/SP
APR-203MA	CNC III: Applied Programming and Operation	2022/SP
APR-254MA	Mill/Turn Machining	2022/SP

Clackamas Community College
Online Course/Outline Submission System

Section #1 General Course Information

Department: ASHP

Submitter

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

Course Prefix and Number: APR - 113MA

Credits: 4

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 88
Lab (# of hours):
Total course hours: 88

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: Manual Machining III

Course Description:

This course is a continuation of machine tool operations. Topics covered include offset boring heads, rotary tables, indexing devices, taper attachments and cylindrical grinding. Additional emphasis is also placed on inspections technique, technical math and optical comparators.

Type of Course: Career Technical Apprenticeship

Reason for the new course:

Update APR program to MTT program

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): Industrial Mechanics and Maintenance Technologies AAS and CPC

Are there prerequisites to this course?

Yes

Pre-reqs: APR-112MA

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 Only

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.

Yes

Course Number: MTT-113 Title: Manual Machining III

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. describe basic assembly fits and define their tolerance specifications,
2. identify common angular measuring tools and demonstrate their use,
3. demonstrate safe setup, operation and application of common endmills and face milling cutter;
4. calculate sine bar elevations to establish angles using a sine bar and gage blocks,
5. describe the care required to maintain gage blocks and their accuracy,
6. demonstrate safe setup, operation and application of an offset boring head;
7. recognize common geometric dimensioning and tolerances,
8. locate reference and tolerance information in Machinery's Handbook,
9. demonstrate safe setup, operation and application of the cylindrical grinder;
10. describe the methods of cutting common tapers on a lathe and apply inspection techniques,
11. demonstrate safe setup, operation and application of indexing devices,
12. describe and inspect common types of keyways.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. GD&T symbols.
2. Tolerances, fits, and SPC.
3. Offset boring heads.
4. Face milling.
5. Direct and simple indexing.
6. Indexing and angular machining.
7. Bolt hole circle calculations.
8. Taper attachments.
9. Cylindrical grinders.
10. Types of keys and keyway calculations.

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

Section #1 General Course Information

Department: ASHP

Submitter

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

Course Prefix and Number: APR - 203MA

Credits: 4

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 88
Lab (# of hours):
Total course hours: 88

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: CNC III: Applied Programming and Operation

Course Description:

This is the third course in the CNC sequence. Students will build their CNC programming, set-up, and operation skills. They will work individually or in small groups to design, program, manufacture, and test advanced projects using CNC mills, CNC lathes, multi-axis/process machine tools, and various software applications.

Type of Course: Career Technical Apprenticeship

Reason for the new course:

change of MTT program requires same updates to APR-MA program

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): Industrial Mechanics and Maintenance Technologies AAS and CPC

Are there prerequisites to this course?

Yes

Pre-reqs: APR-202MA and MTH-080

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 Only

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.

Yes

Course Number: MTT-203 Title: CNC III: Applied Programming and Operation

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. calculate tool points and use trigonometry to solve advanced programming problems,
2. create and update operation plans, set-up sheet, and shop drawings to be used while processing parts,
3. write advanced G & M code programs from scratch for both CNC milling and turning centers,
4. install and use work-holding hardware on multi-axis CNC machines to set-up machines,
5. properly apply advancements in cutting tool technology on both CNC milling and turning machines,
6. use both spindle and tool probes to perform set-ups on CNC machines,
7. perform 1st runs on advanced CNC programs for the purpose of proving them out.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Advanced CNC milling programming, set-up, and operation
2. Advanced CNC lathe programming, set-up, and operation
3. CNC part processing documentation for multi-axis and multi-process.
4. Advanced G & M code programming.
5. Milling, turning, multi-axis, and multi-process 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%

First term to be offered:

Next available term after approval

:



Clackamas Community College
Online Course/Outline Submission System

Section #1 General Course Information

Department: ASHP

Submitter

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

Course Prefix and Number: APR - 254MA

Credits: 3

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 66
Lab (# of hours):
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: Mill/Turn Machining

Course Description:

This class will introduce students to CNC mill-turn machines, their programming, and setup procedures. The course will explore limitations, advantages, and configurations of typical mill/turn machines including rotation style and set-up orientation. Post processing and virtual machine simulation will also be discussed.

Type of Course: Career Technical Apprenticeship

Reason for the new course:

Update program to match MTT program

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): Industrial Mechanics and Maintenance Technologies AAS and CPC

Are there prerequisites to this course?

Yes

Pre-reqs: APR-203MA

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 Only

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.

Yes

Course Number: MTT-254 Title: Mill/Turn Machining

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

No

Student Learning Outcomes:

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

1. identify the advantages of mill-turn machines,
2. identify different machine and workholding configurations,
3. understand basic terminology used in the industry regarding Mill-turn machines,
4. determine proper cutting strategies using dual-spindle machine,
5. identify the limitations of the Main and sub-spindle workholding and fixturing,
6. identify specific issues with live tooling and part hand-off,
7. describe the advantages and disadvantages of C and Y-axis machining,
8. use CAM simulation and virtual machines for simulation.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Identification and orientation of machining axes
2. Machine start-up and shut-down procedures
3. Machine setup and verification procedures
4. Workholding techniques unique to Mill-turn machining
5. Maximizing the usable work area
6. Reduced part handling and increased three-dimensional part feature acceptance
7. Increased productivity of complex parts while increasing tool life and surface finish
8. Toolpath verification using dedicated simulation and machine environments

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

:

Program	Implementation
Industrial Mechanics and Maintenance Technology Apprenticeship AAS	2022/SU
Mechanics and Maintenance Apprenticeship Technologies: Trade Worker Apprenticeship Technologies CPCC	2022/SU



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	
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CAREER LEARNING AREA

<input type="checkbox"/> Ag, Food & Natural Resource Systems	<input type="checkbox"/> Health Services
<input type="checkbox"/> Arts, Information & Communications	<input type="checkbox"/> Human Resources
<input type="checkbox"/> Business & Management	<input checked="" type="checkbox"/> Industrial & Engineering Systems

PROGRAM INFORMATION

<i>APPROVED</i> Program Title <small>(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)</small>	<i>APPROVED</i> CIP Code <small>(Include 7th & 8th digits used for OCCURS reporting.)</small>			<i>APPROVED</i> Recognition Award	Current Credits
	<i>6-digit CIP</i>	<i>7th digit</i>	<i>8th digit</i>		
Parent Program Industrial Mechanics and Maintenance Technology Apprenticeship AAS AAS.MACHINIST	47.0303	N	*	<input type="checkbox"/> Statewide AAS (90-108 credits)	90-94
Apprenticeship Areas:				<input type="checkbox"/>	
Related Certificates: Mechanics and Maintenance Apprenticeship Technologies: Trade Worker Apprenticeship Technologies CPCC				<input type="checkbox"/>	

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

Last amendment approved on 1/15/21

TYPE OF PROGRAM AMENDMENT


(Check ALL That Apply)

New Program++ Title Change for Program	Curriculum Revision	<input type="checkbox"/> Revision in Program Credits	
		Proposed Total Credits: _____	
Proposed AAS Title: _____			
Proposed OPTION Title: _____			
Proposed Certificate Title: _____			
<input type="checkbox"/> 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

<i>CURRENT CURRICULUM 21-22</i>				<i>PROPOSED CURRICULUM 22-23</i>			
Course	Title	Hours	Credits	Course	Title	Hours	Credits
APR000	Apprenticeship Credit for Prior Certification		22				
APR2000	Communication Related Instruction		3-4				
APR3000	Human Relations Related Instruction		3-4				
PEHREQ000	PE/Health Related Instruction		1-3				
--	Apprenticeship-Machinist (MA) SAAS		58	--	Apprenticeship-Machinist (MA) SAAS		61
APRMAEL000	Machinist (MA) Electives		33	APRMAEL000	Machinist (MA) Electives		25
APR-104MA	Print Reading	24	2	APR-104MA	Print Reading	33	3
APR-111MA	Machine Tool Fundamentals I	132	6	APR-111MA	Manual Machining I	88	4
MTH-080	Technical Mathematics II	33	3				
APR-112MA	Machine Tool Fundamentals II	132	6	APR-112MA	Manual Machining II	88	4
APR-201MA	CNC I: Set-up and Operation	88	4				
APR-202MA	CNC II: Programming and Operation	88	4				
APR-106MA	Advanced Applied Geometric Dimensioning and Tolerancing for Manufacturing	33	3				
				APR-113MA	Manual Machining III	88	4
				APR-203MA	CNC III: Applied Programming and Operation	88	4
				APR-254MA	Mill/Turn Machining	66	3
Electives may be any 100-level course or above							
TOTAL CURRENT CREDITS:			90-94	TOTAL PROPOSED CREDITS:			

College Contact		Telephone No.	
E-Mail Address		Fax No.	
Chief Academic Officer or PTE Dean Signature			Date 2/23/22

=====



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	
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CAREER LEARNING AREA

<input type="checkbox"/> Ag, Food & Natural Resource Systems	<input type="checkbox"/> Health Services
<input type="checkbox"/> Arts, Information & Communications	<input type="checkbox"/> Human Resources
<input type="checkbox"/> Business & Management	<input checked="" type="checkbox"/> Industrial & Engineering Systems

PROGRAM INFORMATION

<i>APPROVED</i> Program Title <small>(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)</small>	<i>APPROVED</i> CIP Code <small>(Include 7th & 8th digits used for OCCURS reporting.)</small>			<i>APPROVED</i> Recognition Award	Current Credits
	<i>6-digit CIP</i>	<i>7th digit</i>	<i>8th digit</i>		
Parent Program Industrial Mechanics and Maintenance Technology Apprenticeship AAS	47.0303	N	*	<input type="checkbox"/> Statewide AAS (90-108 credits)	
Apprenticeship Areas:				<input type="checkbox"/>	
Related Certificates: Mechanics and Maintenance Apprenticeship Technologies: Trade Worker Apprenticeship Technologies CPCC CC.MACHINIST	47.0303			<input type="checkbox"/> Statewide Career Pathway SCPC (12-44 credits)	28

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

New program approved on 5/1/2020

TYPE OF PROGRAM AMENDMENT


(Check ALL That Apply)

New Program++	Curriculum Revision	<input type="checkbox"/> Revision in Program Credits
Title Change for Program		<i>Proposed Total Credits:</i> 25
<i>Proposed AAS Title:</i>		
<i>Proposed OPTION Title:</i>		
<i>Proposed Certificate Title:</i>		
<input type="checkbox"/> SUSPENSION of Program	<i>Reason for Suspension:</i>	
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

<i>CURRENT CURRICULUM 21-22</i>				<i>PROPOSED CURRICULUM 22-23</i>			
Course	Title	Hours	Credits	Course	Title	Hours	Credits
APR-104MA	Print Reading	24	2	APR-104MA	Print Reading	33	3
APR-106MA	Advanced Applied Geometric Dimensioning and Tolerancing for Manufacturing	33	3				
APR-111MA	Machine Tool Fundamentals I	132	6	APR-111MA	Manual Machining I	88	4
MTH-080	Technical Mathematics II	33	3				
APR-112MA	Machine Tool Fundamentals II	132	6	APR-112MA	Manual Machining II	88	4
APR-201MA	CNC I: Set-up and Operation	88	4				
APR-202MA	CNC II: Programming and Operation	88	4				
TOTAL CURRENT CREDITS:			28	TOTAL PROPOSED CREDITS:			25

College Contact		Telephone No.	
E-Mail Address		Fax No.	
Chief Academic Officer or PTE Dean Signature		Date	2/23/22

=====

Program	Implementation
Construction Trades, General Apprenticeship AAS	2022/SU
Construction Trades, General Apprenticeship CC	2022/SU
Manual Apprenticeship Trades CPCC	2022/SU
Electrician Apprenticeship Technologies AAS	2022/SU
Electrician Apprenticeship Technologies CC	2022/SU
Limited License Electrician Apprenticeship Technologies CPCC	2022/SU
Industrial Mechanics and Maintenance Technology Apprenticeship AAS	2022/SU
Mechanics and Maintenance Apprenticeship Technologies: Trade Worker Apprenticeship Technologies CPCC	2022/SU

Construction Trades Apprenticeship AAS

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

Old

- complete a minimum of 6000-8000 hours State of Oregon-approved on-the-job training (OJT),
- repair, install and maintain a variety of building construction projects using trade specific tools and techniques in compliance with building codes and OSHA regulations,
- complete required related training with a C or better,
- complete required General Education instruction courses and general electives with a C or better.

New

BUILDING FUNDAMENTALS/SAFETY

- demonstrate safe working practices including rigging and lock out tag out in accordance with state and federal regulations;
- apply OSHA practices in relation to the specific trade;
- apply theory as it relates to trade competencies;
- utilize recognized standard building code guidelines as applicable;
- demonstrate ability to perform welding/brazing applications (plumbers);
- analyze the properties of materials and how they apply to welding and brazing applications (plumbers).

MATHEMATICS/MEASUREMENT/CALCULATIONS AND EQUIPMENT

- calculate elementary algebraic equations and formulas;
- apply appropriate formulas to mathematical situations;
- demonstrate the proper care, use, and storage of hand and power tools.

BLUEPRINT AND SCHEMATICS

- read and interpret building plans and drawings;
- prepare and utilize isometric sketching and detailed drawings per individual trade (plumbers).

CODE AND JOURNEY LEVEL PREPARATION (PLUMBERS)

- utilize recognized standard building codes guidelines as applicable;
- complete a code prep exam with a 75% or higher score per individual trade.

Construction Trades Apprenticeship CC

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

Old

- complete a minimum of 6000-8000 hours State of Oregon-approved on-the-job training (OJT),
- repair, install and maintain a variety of building construction projects using trade specific tools and techniques in compliance with building codes and OSHA regulations,
- complete required related training with a C or better,

New

BUILDING FUNDAMENTALS/SAFETY

- demonstrate safe working practices including rigging and lock out tag out in accordance with state and federal regulations;
- apply OSHA practices in relation to the specific trade;
- apply theory as it relates to trade competencies;
- utilize recognized standard building code guidelines as applicable;
- demonstrate ability to perform welding/brazing applications (plumbers);
- analyze the properties of materials and how they apply to welding and brazing applications (plumbers).

MATHEMATICS/MEASUREMENT/CALCULATIONS AND EQUIPMENT

- calculate elementary algebraic equations and formulas;
- apply appropriate formulas to mathematical situations;
- demonstrate the proper care, use, and storage of hand and power tools.

BLUEPRINT AND SCHEMATICS

- read and interpret building plans and drawings;
- prepare and utilize isometric sketching and detailed drawings per individual trade (plumbers).

CODE AND JOURNEY LEVEL PREPARATION (PLUMBERS)

- utilize recognized standard building codes guidelines as applicable;
- complete a code prep exam with a 75% or higher score per individual trade.

Manual Apprenticeship Trades CPCC

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

Old

- Repair, install, and maintain a variety of building construction projects using trade specific tools and techniques in compliance with building codes and OSHA regulations
- Complete a minimum of 4000 hours State of Oregon-approved on-the-Job Training (OJT).

New

BUILDING FUNDAMENTALS/SAFETY

- demonstrate safe working practices including rigging and lock out tag out in accordance with state and federal regulations;
- apply OSHA practices in relation to the specific trade;
- apply theory as it relates to trade competencies;
- utilize recognized standard building code guidelines as applicable.

MATHEMATICS/MEASUREMENT/CALCULATIONS AND EQUIPMENT

- calculate elementary algebraic equations and formulas;
- apply appropriate formulas to mathematical situations;
- demonstrate the proper care, use, and storage of hand and power tools.

BLUEPRINT AND SCHEMATICS

- read and interpret building plans and drawings.

Electrician Apprenticeship Technologies AAS

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

Old

- complete the 6000-8000 hours State of Oregon-approved on-the-job training,
- apply theory to electrical wiring,
- repair, install electrical wire devices according to licensure regulations to
- meet NEC and OSC for inside electrician, limited energy technician license A, limited manufacturing plant electrician, sign assembler/fabricator, sign maker/erector, and stationary engineer;
- complete required related training with a C or better,
- complete required General Education instruction courses and general electives with a C or better.

New

ELECTRICAL FUNDAMENTALS/SAFETY

- solve mathematical formulas and equations of theory;
- describe and apply basic theory of electrical sources;
- demonstrate safe working practices in accordance with state and federal regulations.

MATHEMATICS/MEASUREMENT/CALCULATIONS AND EQUIPMENT

- calculate voltage drop;
- solve electrical equations using trade specific mathematical formulas;
- use test equipment to make electrical measurements;
- use and care of trade specific equipment appropriately.

ASSESSMENT AND TROUBLESHOOTING

- operate PLC's according to trade specific applications and methodology;
- describe various troubleshooting techniques of trade specific equipment;
- draw and interpret blueprints and schematics.

ELECTRICAL CODE AND EXAM PREPARATION

- interpret NEC and Oregon Specialty Codes;
- prepare for state exam;
- complete and pass timed practice exams;
- demonstrate knowledge of industry terminology;
- use the NEC articles and tables to perform various calculations;
- utilize the Oregon Administrative Rules (OAEs) in relation to the NEC and Oregon Specialty Codes (OSC);
- complete the NEC code preparation exams with a 75% and higher.

Electrician Apprenticeship Technologies CC

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

Old

- complete the 6000-8000 hours State of Oregon-approved on-the-job training,
- apply theory to electrical wiring,
- repair and install electrical wire devices according to licensure regulations to meet NEC and OSC for inside electrician, limited energy technician license A, limited manufacturing plant electrician, sign assembler/fabricator, sign maker/erector, and stationary engineer;
- complete required related training with a C or better.

New

ELECTRICAL FUNDAMENTALS/SAFETY

- solve mathematical formulas and equations of theory;
- describe and apply basic theory of electrical sources;
- demonstrate safe working practices in accordance with state and federal regulations.

MATHEMATICS/MEASUREMENT/CALCULATIONS AND EQUIPMENT

- calculate voltage drop;
- solve electrical equations using trade specific mathematical formulas;
- use test equipment to make electrical measurements;
- use and care of trade specific equipment appropriately.

ASSESSMENT AND TROUBLESHOOTING

- operate PLC's according to trade specific applications and methodology;
- describe various troubleshooting techniques of trade specific equipment;
- draw and interpret blueprints and schematics.

ELECTRICAL CODE AND EXAM PREPARATION

- interpret NEC and Oregon Specialty Codes;
- prepare for state exam;
- complete and pass timed practice exams;
- demonstrate knowledge of industry terminology;
- use the NEC articles and tables to perform various calculations;
- utilize the Oregon Administrative Rules (OAEs) in relation to the NEC and Oregon Specialty Codes (OSC);
- complete the NEC code preparation exams with a 75% and higher.

Limited License Electrician Apprenticeship Technologies CPCC

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

Old

- complete the 6000-8000 hours State of Oregon-approved on-the-job training,
- apply theory to electrical wiring,
- repair and install electrical wire devices according to licensure regulations to meet NEC and OSC for inside electrician, limited energy technician license A, limited manufacturing plant electrician, sign assembler/fabricator, sign maker/erector, and stationary engineer;
- complete required related training with a C or better.

New

ELECTRICAL FUNDAMENTALS/SAFETY

- solve mathematical formulas and equations of theory;
- describe and apply basic theory of electrical sources;
- demonstrate safe working practices in accordance with state and federal regulations.

MATHEMATICS/MEASUREMENT/CALCULATIONS AND EQUIPMENT

- calculate voltage drop;
- solve electrical equations using trade specific mathematical formulas;
- use test equipment to make electrical measurements;
- use and care of trade specific equipment appropriately.

ASSESSMENT AND TROUBLESHOOTING

- operate PLC's according to trade specific applications and methodology;
- describe various troubleshooting techniques of trade specific equipment;
- draw and interpret blueprints and schematics.

ELECTRICAL CODE AND EXAM PREPARATION

- interpret NEC and Oregon Specialty Codes;
- prepare for state exam;
- complete and pass timed practice exams;
- demonstrate knowledge of industry terminology;
- use the NEC articles and tables to perform various calculations;
- utilize the Oregon Administrative Rules (OAEs) in relation to the NEC and Oregon Specialty Codes (OSC).
- complete the NEC code preparation exams with a 75% and higher.

Industrial Mechanics and Maintenance Technology Apprenticeship AAS

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

Old

- Complete a minimum of 6000-8000 hours State of Oregon approved on-the-job training (OJT);
- Demonstrate the functions of trade-specific industrial systems
- Define lubrication processes with trade-specific industrial materials and equipment
- Identify mechanical and/or electrical industrial systems
- Demonstrate the proper care, use and storage of hand and power tools
- Develop machine shops skills in troubleshooting
- Read and interpret trade-specific industrial blueprints
- Analyze the properties of material and how they apply to trade specific fabricating applications
- Fabricate industrial materials in appropriate trade-specific applications
- Calculate elementary algebraic equations and formulas
- Apply appropriate formulas to mathematical situations

New

MACHINERY OPERATION AND MAINTENANCE

- demonstrate the functions of trade-specific industrial systems;
- define lubrication processes with trade-specific industrial materials and equipment;
- identify mechanical and/or electrical industrial systems;
- demonstrate the proper care, use and storage of hand and power tools;
- develop machine shops skills in troubleshooting.

FABRICATION

- read and interpret trade-specific industrial blueprints;
- perform trade-specific welding applications;
- analyze the properties of materials and how they apply to trade-specific fabricating applications;
- fabricate industrial materials in appropriate trade-specific applications.

MATHEMATICS OF THE TRADE

- calculate elementary algebraic equations and formulas;
- apply appropriate formulas to mathematical situations.

SAFETY

- demonstrate safe working practices in accordance with state and federal regulations;
- apply standardized OSHA practices to specific trade applications;
- describe procedures for proper removal and disposal of hazardous materials.

Mechanics and Maintenance Apprenticeship Technologies: Trade Worker Apprenticeship Technologies, CPCC

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

Old

- Complete a minimum of 6000-8000 hours State of Oregon approved on-the-job training (OJT);
- Demonstrate the functions of trade-specific industrial systems
- Define lubrication processes with trade-specific industrial materials and equipment
- Identify mechanical and/or electrical industrial systems
- Demonstrate the proper care, use and storage of hand and power tools
- Develop machine shops skills in troubleshooting
- Read and interpret trade-specific industrial blueprints
- Analyze the properties of material and how they apply to trade specific fabricating applications
- Fabricate industrial materials in appropriate trade-specific applications
- Calculate elementary algebraic equations and formulas
- Apply appropriate formulas to mathematical situations

New

MACHINERY OPERATION AND MAINTENANCE

- demonstrate the functions of trade-specific industrial systems;
- define lubrication processes with trade-specific industrial materials and equipment;
- identify mechanical and/or electrical industrial systems;
- demonstrate the proper care, use and storage of hand and power tools;
- develop machine shops skills in troubleshooting.

FABRICATION

- read and interpret trade-specific industrial blueprints;
- perform trade-specific welding applications;
- analyze the properties of materials and how they apply to trade-specific fabricating applications;
- fabricate industrial materials in appropriate trade-specific applications.

MATHEMATICS OF THE TRADE

- calculate elementary algebraic equations and formulas;
- apply appropriate formulas to mathematical situations.

SAFETY

- demonstrate safe working practices in accordance with state and federal regulations;
- apply standardized OSHA practices to specific trade applications;
- describe procedures for proper removal and disposal of hazardous materials.

Program	Implementation
Emergency Management Professional AAS	2022/SU



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	
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CAREER LEARNING AREA

<input type="checkbox"/> Ag, Food & Natural Resource Systems	<input type="checkbox"/> Health Services
<input type="checkbox"/> Arts, Information & Communications	<input type="checkbox"/> Human Resources
<input checked="" type="checkbox"/> Business & Management	<input type="checkbox"/> Industrial & Engineering Systems

PROGRAM INFORMATION

APPROVED Program Title <small>(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)</small>	APPROVED CIP Code			APPROVED Recognition Award	Current Credits
	6-digit CIP	7 th digit	8 th digit		
Parent AAS Title: Emergency Management Professional AAS AAS.EMP	43.0302	I	*	<input type="checkbox"/> AAS Degree (90-108 credits)	90-92
Option Title**				<input type="checkbox"/> OPTION to AAS Degree	
Certificate Title: <i>Within</i> AAS Degree? <input checked="" type="checkbox"/> Yes** <input type="checkbox"/> No				<input type="checkbox"/> CC1R Related Certificate	

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

New program approved on 6/5/20

TYPE OF PROGRAM AMENDMENT

(Check ALL That Apply)

<input type="checkbox"/> New Program++	<input type="checkbox"/> Curriculum Revision	<input type="checkbox"/> Revision in Program Credits
<input type="checkbox"/> Title Change for Program		Proposed Total Credits: _____
Proposed AAS Title: _____		
Proposed OPTION Title: _____		
Proposed Certificate Title: _____		
<input type="checkbox"/> 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.]

<i>CURRENT CURRICULUM 21-22</i> [List entire curriculum as last approved]				<i>PROPOSED CURRICULUM 22-23</i> [List only course(s) to be amended]			
Course	Title	Hours	Credits	Course	Title	Hours	Credits
Fall Term							
EMP-201	Introduction to Homeland Security and Emergency Management	44	4				
EMP-202	Threat and Hazard Assessment for Emergency Management Professionals	33	3				
EMP-204	Foundations of Emergency Planning	44	4				
--	Computation requirement (see page 82)		4				
Winter Term							
EMP-206	Hazard Mitigation	33	3				
EMP-208	Disaster Response and Recovery	44	4				
EMP-222	Terrorism Awareness and Response	22	2				
EMP-224	Science of Disasters	22	2				
COMM-218	Interpersonal Communication	44	4				
Spring Term							
EMP-210	Developing and Managing Volunteer Resources	44	4				
EMP-212	Public Health and Medical Emergency Management	33	3				
EMP-214	Technology in Emergency Management	44	4				
EMP-216	Emergency Management Laws and Ethics	22	2				
*--	Elective (100 level or above)		2-4				
Year 2							
Fall Term							
EMP-218	Public Information Officer and External Affairs	22	2				
GIS-101	Principles of Geospatial Technology	44	2				
WR-227	Technical Report Writing	44	4				
--	Focus Area Courses		7				
Winter Term							
EMP-220	Introduction to Emergency Management Public Administration and Policy	22	2				
COMM-140	Introduction to Intercultural Communication	44	4				

--	Focus Area Courses		9				
Spring Term							
EMP-226	Business Continuity Fundamentals	44	4				
--	PE/Health/Safety/First Aid requirement (see page 82)		1				
--	Focus Area Courses		10				
Catalog Notes							
*Students who have not satisfied WR-121 or equivalent should take WR-121 in spring term.							
Focus Areas							
Complete all courses from one of the following Focus Areas							
Wildland Fire							
FRP-130	Introduction to Wildland Firefighting (S-130/S-190/ICS-100/IS-700/L-180)	44	2				
FRP-200	Basic Incident Command System (I-100, I-200, IS-700, IS-800)	44	4				
FRP-265	Wildland Fire Prevention Education 1 (P-101)	33	3	REMOVE			
FRP-275	Wildland Fire Management 1	40	4	REMOVE			
FRP-294	Intermediate Incident Command System (I-300)	21	2				
--	Any CJA, EMP, EMT, FRP, GIS, HS, or SAR courses		11	--	Any BA, CJA, EC, EMP, EMT, FRP, GIS, or HS course not included in the program	12	6
				FRP-131	Advanced Firefighter Training (S-131/S-133)	20	1
				FRP-211	Portable Pumps and Water Use (S-211)	33	2
				FRP-244	Wilderness II: Basic Land Navigation (S-244)	44	3
				FRP-246	Wilderness IV: Backcountry CPR/First Aid/AED	20	2
				FRP-249	Followership to Leadership (L-280)	20	2
				FRP-250	Wilderness VI: Basic Tool Use and Care	16	1
				FRP-270	Basic Air Operations (S-270)	12	1
Emergency Medical Technician							
BI-231	Human Anatomy & Physiology I	66	4				
EMT-101	Emergency Medical Technician Part I	99	6				
EMT-102	Emergency Medical Technician Part II	99	6				
EMT-105	Introduction to Emergency Medical Services	33	3				

EMT-109	Emergency Response Communication/Documentation	24	2				
MA-110	Medical Terminology	44	4				
--	Any CJA, EMP, EMT, FRP, GIS, HS, or SAR courses		1	--	Any BA, CJA, EC, EMP, EMT, FRP, GIS, or HS course not included in the program		1
Management							
BA-120	Project Management Fundamentals	44	4				
BA-123	Leadership & Motivation	33	3				
BA-223	Principles of Marketing	44	4				
BA-224	Human Resource Management	44	4				
BA-251	Supervisory Management	33	3				
EC-200	Introduction to Economics	44	4	REMOVE			
PSY-101	Human Relations	33	3				
--	Any CJA, EMP, EMT, FRP, GIS, HS, or SAR courses		1	--	Any BA, CJA, EC, EMP, EMT, FRP, GIS, or HS course not included in the program		5
Fire Service Administration							
FRP-200	Basic Incident Command System (I-100, I-200, IS-700, IS-800)	44	4				
FST-202	Principles of Emergency Services	33	3				
FST-204	Fire Protection Systems	33	3				
FST-206	Fire Behavior and Combustion	33	3				
FST-212	Fire Prevention	33	3				
FST-214	Building Construction for Fire Protection	33	3				
FST-216	Principles of Fire and Emergency Services Safety and Survival	33	3				
--	Any CJA, EMP, EMT, FRP, GIS, HS, or SAR courses		4	--	Any BA, CJA, EC, EMP, EMT, FRP, GIS, or HS course not included in the program		4
Geographic Information Systems (GIS)							
BA-120	Project Management Fundamentals	44	4				
GIS-101	Principles of Geospatial Technology	44	2				
GIS-201	Introduction to Geographic Information Systems	66	3				
GIS-202	Intermediate Geographic Information Systems	66	3				
GIS-205	Cartography and Map Making	33	3				
GIS-232	Data Collection & Application	44	2				
GIS-238	GIS Web Mapping and Services	44	2				

GEO-100	Introduction to Physical Geography	44	4				
--	Any CJA, EMP, EMT, FRP, GIS, HS, or SAR courses		3	--	Any BA, CJA, EC, EMP, EMT, FRP, GIS, or HS course not included in the program		3
Criminal Justice							
CJA-101	Criminology	44	4				
CJA-110	Introduction to Law Enforcement	33	3				
CJA-122	Criminal Law	44	4				
PSY-110	Psychology: An Overview	44	4	REMOVE			
PSY-219	Introduction to Abnormal Psychology	44	4				
SOC-204	Introduction to Sociology	44	4				
--	Any CJA, EMP, EMT, FRP, GIS, HS, or SAR courses		3	--	Any BA, CJA, EC, EMP, EMT, FRP, GIS, or HS course not included in the program		7
TOTAL CURRENT CREDITS:			90-92	TOTAL PROPOSED CREDITS:			
College Contact					Telephone No.		
E-Mail Address					Fax No.		
Chief Academic Officer or PTE Dean Signature					Date		2/22/22

March 4, 2022

Course	Current Hours/Credits	Proposed Hours/Credits
MFG-102	22 LE/LA;1 Credit	22-66 LE/LA;1-3 Credits
MTT-111	110 LE/LA;5 Credits	88 LE/LA;4 Credits
MTT-112	110 LE/LA;5 Credits	88 LE/LA;4 Credits
MTT-113	110 LE/LA;5 Credits	88 LE/LA;4 Credits
MTT-121	66 LE/LA;3 Credits	88 LE/LA;4 Credits

Clackamas Community College
Online Course/Outline Submission System

Show changes since last approval in red

Section #1 General Course Information

Department: IDTD

Submitter

First Name: Mike
Last Name: Mattson
Phone: 3322
Email: mattsonm

Course Prefix and Number: MFG - 102

Credits: 3

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 66
Lab (# of hours):
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: Makerspace: An Introduction to Digital Manufacturing

Course Description:

This course introduces students to aspects of digital design and manufacturing through the use of sophisticated modeling software; 3-D printing, laser cutting and scanning; and CNC machining. Students will complete a series of hands-on projects that require imagination and determination while learning solid workmanship principles. Variable Credit: 1-3 credits.

Type of Course: Career Technical Supplementary

Can this course be repeated for credit in a degree?

No

What is the target audience/industry for this class?

Manufacturing students

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

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?

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 a sketch of a manufactured object on paper and then model in a CAD system,

2. work safely around power tools,
3. develop and manufacture a product with technologies that include 3-D printers, laser cutters and CNC milling machines,
4. reverse engineer an existing machine element to modify its features and accurately remanufacture it,
5. perform accurate measurements with the use of precision tools.

This course does not include assessable General Education outcomes.

Major Topic Outline:

- 1) Shop safety
- 2) Sketching and precision measurement
- 3) CAD system introduction
- 4) 3-D printing
- 5) Laser cutting
- 6) CNC setup and operation
- 7) CNC programming with a CAM system

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: Summer 2019

Clackamas Community College
Online Course/Outline Submission System

Show changes since last approval in red

Section #1 General Course Information

Department: IDTD

Submitter

First Name: **Mike**
Last Name: **Mattson**
Phone: **3322**
Email: **mattsonm@clackamas.edu**

Course Prefix and Number: MTT - 111

Credits: 4

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): **88**
Lab (# of hours):
Total course hours: **88**

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: Manual Machining I

Course Description:

This course is an introduction to machine tool operation and precision measurement. It covers elementary operation of drill presses, bandsaws, lathes, and milling machines. The course includes external threading.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Machine Tool Technology AAS, Computer-Aided Manufacturing 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: Prerequisite or Corequisite: MFG-104 and MTH-050

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**

✓ **Winter**

Is this course equivalent to another?

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

Yes

Course Number: **APR-111MA** Title: **Manual Machining I**

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. identify the equipment and behaviors necessary for safety in the machine shop environment,
2. identify cutting tool materials and calculate their proper RPM and feed rates,
3. inspect machined elements using precision measurement,
4. describe the major components and associated tooling related to milling machines and lathes,
5. identify and implement common work holding devices for lathes and mills,
6. adjust the settings of common machine tools for the proper feed and speed,
7. demonstrate the process for centering a 4-jaw chuck,
8. setup and perform single-point threading on a lathe,
9. demonstrate safe setup, operation, and proper work holding procedures on mills and lathes,
10. demonstrate the safe setup operation and blade selection of horizontal and vertical band saws,
11. plan and perform tapping and die threading operations by hand and machine,
12. demonstrate the safe and proper use of a pedestal grinder.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Shop safety
2. Speed and feed calculations for milling, turning and drilling.
3. Unit conversion conversions
4. Reading and handling of steel rules
5. Precision measurement with calipers and micrometers
6. Application of transfer measurement tools
7. Manual lathe use and application for O.D turning, facing and drilling
8. Cutting tools for turning
9. Workholding on a lathe including chucks, collets and faceplate
10. The calculations, setup and measurement for sixty-degree external threads
11. Milling machine setup and operation
12. Setup and operation of a drill press
13. Application and setup of counterboring, countersinking and spotfacing tools
14. Setup and operation of horizontal and vertical band saws
15. Taps and tapping applications
16. Types and application of thread cutting dies
17. Pedestal grinder safety and operation

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

Show changes since last approval in red

Print

Edit

Delete

Back

Reject

Publish

Section #1 General Course Information

Department: IDTD

Submitter

First Name: Mike

Last Name: Mattson

Phone: 3322

Email: mattsonm@clackamas.edu

Course Prefix and Number: MTT - 112

Credits: 4

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 88

Lab (# of hours):

Total course hours: 88

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: Manual Machining II

Course Description:

This course is a continuation of machine tool operations. It covers set-up and operation of the vertical milling machine, lathe boring techniques, surface grinding and screw thread nomenclature.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Machine Tool Technology AAS, Computer-Aided Manufacturing AAS

Are there prerequisites to this course?

Yes

Pre-reqs: MTT-111

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: No

When do you plan to offer this course?

✓ **Winter**

✓ **Spring**

Is this course equivalent to another?

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

Yes

Course Number: **APR-112MA** Title: **Manual Machining II**

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 basic geometric dimensioning and tolerancing symbols to machining operations,
2. compare and select cutting tool materials for optimal durability, efficiency and quality;
3. describe all aspects of turning with centers including tailstock use, turning between centers and tailstock alignment;
4. describe situations when reaming should be selected and identify relevant tooling parameters,
5. perform and troubleshoot parting operations,
6. identify principles that are used to reduce chatter during turning operations,
7. describe the application of a steady rest and a follow rest for turning,
8. identify common nomenclature associated with screw threads including thread series, form, lead, pitch and diameter specifications;
9. identify the major components of the vertical milling machine,
10. demonstrate milling machine setup including tooling selection and workholding,
11. perform basic milling machine operations including face, slot and side milling and hole making;
12. compare conventional and climb milling,
13. identify and select tooling for surface grinding,
14. setup and perform high-precision surface grinding.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Basic geometric and dimensioning symbols
2. Metal cutting mechanics
3. The identification and application cutting fluids
4. Cutting tool materials and selection
5. Turning between centers
6. Tapered and expanding mandrels
7. Alignment of the lathe center
8. Lathe operations such as drilling, boring, reaming, tapping, parting off and knurling
9. Application of steady and follow rests
10. Screw thread nomenclature
11. Knee-type vertical milling machine components and their function
12. Workholding and cutting tools for milling
13. Squaring the milling head
14. Align a workpiece parallel to the axis of the table
15. Locating the workpiece corner with an edge finder
16. Locating the center of a bore with a dial indicator
17. Speed and feed calculations
18. Applications for the rotary table or indexing head
19. Grinding wheel selection, handling, truing and dressing
20. Work holding devices for the surface grinder
21. Setups and operations on the surface grinder
22. The general cause of surface grinding problems

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

Show changes since last approval in red

Section #1 General Course Information

Department: IDTD

Submitter

First Name: **Mike**
Last Name: **Mattson**
Phone: **3322**
Email: **mattsonm@clackamas.edu**

Course Prefix and Number: MTT - 113

Credits: 4

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): **88**
Lab (# of hours):
Total course hours: **88**

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: Manual Machining III

Course Description:

This course is a continuation of machine tool operations. Topics covered include offset boring heads, rotary tables, indexing devices, taper attachments and cylindrical grinding. Additional emphasis is also placed on inspections technique, technical math and optical comparators.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

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

No

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

Yes

Name of degree(s) and/or certificate(s): Machine Tool Technology AAS, Computer-Aided Manufacturing AAS

Are there prerequisites to this course?

Yes

Pre-reqs: MTT-112

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?

✓ **Summer**

✓ **Spring**

Is this course equivalent to another?

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

Yes

Course Number: **APR-113MA** Title: **Manual Machining III**

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 basic assembly fits and define their tolerance specifications,
2. identify common angular measuring tools and demonstrate their use,
3. demonstrate safe setup, operation and application of common endmills and face milling cutter;
4. calculate sine bar elevations to establish angles using a sine bar and gage blocks,
5. describe the care required to maintain gage blocks and their accuracy,
6. demonstrate safe setup, operation and application of an offset boring head;
7. describe common geometric dimensioning and tolerances,
8. locate reference and tolerance information in Machinery's Handbook,
9. demonstrate safe setup, operation and application of the cylindrical grinder;
10. describe the methods of cutting common tapers on a lathe and apply inspection techniques,
11. demonstrate safe setup, operation and application of indexing devices,
12. describe and inspect common types of keyways.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. GD&T symbols.
2. Tolerances, fits, and SPC.
3. Offset boring heads.
4. Face milling.
5. Direct and simple indexing.
6. Indexing and angular machining.
7. Bolt hole circle calculations.
8. Taper attachments.
9. Cylindrical grinders.
10. Types of keys and keyway calculations.

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

Show changes since last approval in red

Section #1 General Course Information

Department: IDTD

Submitter

First Name: **Mike**
Last Name: **Mattson**
Phone: **3322**
Email: **mattsonm@clackamas.edu**

Course Prefix and Number: MTT - 121

Credits: 4

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): **88**
Lab (# of hours):
Total course hours: **88**

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: CNC I: Set-Up and Operation

Course Description:

This is the first course in the CNC sequence. Students will learn basic skills including how to properly set-up and operate both CNC milling and turning centers. Students will also learn G & M codes related to basic machine set-up and operation. Designed for persons with little or no previous CNC experience.

Type of Course: Career Technical Preparatory

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): Machine Tool Technology AAS, Computer-Aided Manufacturing 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?

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**

Is this course equivalent to another?

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

Yes

Course Number: **APR-201MA** Title: **CNC I: Set-Up and Operation**

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. explain the various systems that control both CNC milling and turning centers,
2. establish work offsets on CNC machines,
3. establish both initial tool offsets as well as make adjustments for tool wear and deflection,
4. perform 1st runs on CNC programs for the purpose of proving them out,
5. interpret and apply G & M codes that relate to basic machine set-up and operation,
6. transfer programs to and from CNC machine tools,
7. install and use basic work-holding hardware,
8. assemble and install tooling into CNC machines,
9. work safely around automated manufacturing equipment.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Computer Numerical Control (CNC) systems and nomenclature.
2. Cartesian coordinate system.
3. Machine start-up and shut-down procedures.
4. Set-up CNC vertical milling machine work and tool offsets.
5. Set-up CNC horizontal turning machine zero and tool offsets.
6. Work and tool offset adjustments.
7. CNC machine tooling and work holding basics.
8. G & M code basics.
9. Milling and turning 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%

First term to be offered:

Next available term after approval

:

March 4, 2022

Course Number	Title	Implementation
IMT-230	Introduction to Heating, Ventilation, and Air Conditioning	2022/SP

Clackamas Community College
Online Course/Outline Submission System

Section #1 General Course Information

Department: IDTD

Submitter

First Name: Mike
Last Name: Mattson
Phone: 3322
Email: mattsonm

Course Prefix and Number: IMT - 230

Credits: 3

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 66
Lab (# of hours):
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: Introduction to Heating, Ventilation, and Air Conditioning

Course Description:

This course will introduce students to commercial and residential Heating, Ventilation, and Air Conditioning (HVAC) systems. Students will study HVAC terminology, heating systems, the refrigeration cycle, low voltage controls, basics of air flow and ventilation as well as safety practices while working on these systems. There will be many opportunities for hands-on experience using trainer devices in a lab setting that will include exercises for troubleshooting, understanding controls, and basic system performance and function.

Type of Course: Career Technical Preparatory

Reason for the new course:

.

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): Industrial Maintenance Technology 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?

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?

✓ **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 basic HVAC terminology,
2. analyze the sequence and principles of the refrigeration cycle,
3. identify the major components of an HVAC system,
4. identify components of the low voltage control system and correctly install and troubleshoot these controls,
5. demonstrate proper safety procedures for servicing and troubleshooting an HVAC system,
6. identify the steps and regulations for charging a refrigeration system,
7. measure electrical quantities with electronic test equipment,
8. describe the principles of proper air flow and ventilation.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Basic HVAC theory and history
2. HVAC component identification and function
3. Various types of Heating and Cooling systems and their pros and cons
4. Understanding efficiency of an HVAC component and the associated trade-offs
5. System layout and design fundamentals
6. Ventilation principles, best practices, and design concepts
7. Refrigeration cycle: what is it and how does it works
8. Controls of HVAC systems and proper wiring techniques
9. How and when to use various testing devices to understand the condition of the system and components
10. Safety practices for working with HVAC equipment
11. Identifying common system problems
12. Preventative maintenance options to help avoid common system problems
13. Troubleshooting practice for wiring, component, and system issues
14. Integration: best practice system design and maintenance

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

:

Program	Implementation
Machine Tool Technology AAS	2022/SU
Machine Tool Technology CC	2022/SU
CNC Operator CPCC	2022/SU
Industrial Maintenance Technology AAS	2022/SU
Industrial Maintenance Technology CC	2022/SU
Industrial Maintenance Technology Mechanical Maintenance CC	2022/SU
Computer-Aided Manufacturing AAS	2022/SU



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	
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CAREER LEARNING AREA

<input type="checkbox"/> Ag, Food & Natural Resource Systems	<input type="checkbox"/> Health Services
<input type="checkbox"/> Arts, Information & Communications	<input type="checkbox"/> Human Resources
<input type="checkbox"/> Business & Management	<input type="checkbox"/> Industrial & Engineering Systems

PROGRAM INFORMATION

<u>APPROVED</u> Program Title <small>(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)</small>	<u>APPROVED</u> CIP Code (Include 7 th & 8 th digits used for OCCURS reporting.)			<u>APPROVED</u> Recognition Award	Current Credits
	6-digit CIP	7 th digit	8 th digit		
AAS Title: Machine Tool Technology AAS.MACHTECH	15.0613			<input checked="" type="checkbox"/> AAS (90-108 credits)	98-101
Option Title**				<input type="checkbox"/> OPTION to AAS Degree	
Related Certificates: CNC Operator CPCC Machine Tool Technology Certificate Mastercam Certificate				<input type="checkbox"/> Certificate of Completion	

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

LAST AMENDMENT APPROVED 04.16.21

TYPE OF PROGRAM AMENDMENT

(Check ALL That Apply)

<input type="checkbox"/> New Program++	<input type="checkbox"/> Curriculum Revision	<input type="checkbox"/> Revision in Program Credits
<input type="checkbox"/> Title Change for Program		<i>Proposed Total Credits:</i> 96-99
<i>Proposed AAS Title:</i>		
<i>Proposed OPTION Title:</i>		
<i>Proposed Certificate Title:</i>		
<input type="checkbox"/> SUSPENSION of Program	<i>Reason for Suspension:</i>	
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.]

<i>CURRENT CURRICULUM 21-22</i>				<i>PROPOSED CURRICULUM 22-23</i>			
<small>[List entire curriculum as last approved]</small>				<small>[List only course(s) to be amended]</small>			
Course	Title	Hours	Credits	Course	Title	Hours	Credits
Manufacturing Technology Associate of Applied Science Degree: 1st Year							
Fall Term							
MFG-104	Print Reading	33	3				
MFG-107	Industrial Safety & First Aid	33	3				
MTH-050*	Technical Mathematics I	44	4				
MTT-111	Manual Machining I	110	5	MTT-111	Manual Machining I	88	4
MTT-121	CNC I: Set-Up and Operation	66	3	MTT-121	CNC I: Set-Up and Operation	88	4
Winter Term							
MFG-109	Computer Literacy for Technicians	33	3				
MTH-080	Technical Mathematics II	33	3				
MTT-112	Manual Machining II	110	5	MTT-112	Manual Machining II	88	4
MTT-122	CNC II: Programming and Operation	88	4				
--	Human Relations requirement (see page 82)		3				
Spring Term							
MTT-113	Manual Machining III	110	5	MTT-113	Manual Machining III	88	4
MTT-123	CNC III: Applied Programming and Operation	88	4				
MTT-141	CAD/CAM I	88	4				
WR-101*	Communication Skills: Occupational Writing	33	3				
Manufacturing Technology Associate of Applied Science Degree: 2nd Year							
Fall Term							
MFG-106	Advanced Applied Geometric Dimensioning and Tolerancing for Manufacturing	33	3				
MFG-218	Lean Manufacturing and Quality Systems	33	3				
MTT-241	CAD/CAM II	88	4				
MTT-252	Macro Programming and Machine Probing	66	3				
--	Machine Tool Technology program electives		3-4				
Winter Term							
MFG-264	CMM Set-up and Operation	44	2				
MTT-242	CAD/CAM III	88	4				
MTT-253	5-Axis Machining	66	3				
MTT-268	Capstone Machining I	66	3				

--	Machine Tool Technology program electives		3-4				
Spring Term							
HD-209 Or MFG-280	Job Search Skills Or Manufacturing Technology/CWE	33-108	3				
MFG-221	Materials Science	66	3				
MTT-254	Mill/Turn Machining	66	3				
MTT-269	Capstone Machining II	66	3				
--	Machine Tool Technology program electives		3-4				
Machine Tool Technology Program Electives							
Any MFG or MTT course not included in the program, or any of the following:							
CDT-102	Sketching & Problem Solving	66	3				
CDT-103	Computer-Aided Drafting I	66	3				
CDT-108A	Introduction to SolidWorks	66	3				
CDT-223	Inventor Fundamentals	66	3				
CDT-225	Advanced SolidWorks	66	3				
MET-170	Introduction to Manufacturing Processes	33	3				
MFG-103	Machining for Fabrication & Maintenance	66	3				
MFG-130	Basic Electricity I	33	3				
MFG-219	Robotics	66	3				
WLD-150	Welding Processes	88	4				
*Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty advisor or a staff member in Student Services for the transfer requirements of the specific advanced program or school.							
Oregon Tech Transfer Courses							
The Industrial Technology Department, in partnership with Oregon Tech, offers a significant number of transferable classes into Oregon Tech's Manufacturing Engineering Technology degree program. For information contact the Industrial Technology Department, 503-594-3318.							
TOTAL CURRENT CREDITS:			98-101	TOTAL PROPOSED CREDITS:		96-99	

College Contact	Industrial Technology Department	Telephone No.	3318
E-Mail Address		Fax No.	
Chief Academic Officer or PTE Dean Signature			Date 2/23/22



COMMUNITY COLLEGE PROGRAM AMENDMENT FORM

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

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<http://www.ode.state.or.us/search/results/?id=231>

College:	Clackamas Community College	Date	
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CAREER LEARNING AREA

<input type="checkbox"/> Ag, Food & Natural Resource Systems	<input type="checkbox"/> Health Services
<input type="checkbox"/> Arts, Information & Communications	<input type="checkbox"/> Human Resources
<input type="checkbox"/> Business & Management	<input type="checkbox"/> Industrial & Engineering Systems

PROGRAM INFORMATION

<u>APPROVED</u> Program Title <small>(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)</small>	<u>APPROVED</u> CIP Code <small>(Include 7th & 8th digits used for OCCURS reporting.)</small>			<u>APPROVED</u> Recognition Award	Current Credits
	<u>6-digit CIP</u>	<u>7th digit</u>	<u>8th digit</u>		
AAS Title: Machine Tool Technology AAS				<input type="checkbox"/> Associate of Applied Science (AAS) Degree	
Option Title**				<input type="checkbox"/> OPTION to AAS Degree	
Certificate Title: <i>Within</i> AAS Degree? <input checked="" type="checkbox"/> Yes** <input type="checkbox"/> No Machine Tool Technology CC.MACHTECH	15.0613			<input checked="" type="checkbox"/> CC1R Related Certificate (45-60 credits)	52

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

LAST AMENDMENT APPROVED ON 04.16.21

TYPE OF PROGRAM AMENDMENT

(Check ALL That Apply)

<input type="checkbox"/> New Program++	<input type="checkbox"/> Curriculum Revision	<input checked="" type="checkbox"/> Revision in Program Credits
<input type="checkbox"/> Title Change for Program		<i>Proposed Total Credits:</i> 50
<i>Proposed AAS Title:</i>		
<i>Proposed OPTION Title:</i>		
<i>Proposed Certificate Title:</i>		
<input type="checkbox"/> SUSPENSION of Program	<i>Reason for Suspension:</i>	
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
Fall Term							
MFG-104	Print Reading	33	3				
MFG-107	Industrial Safety & First Aid	33	3				
MTH-050*	Technical Mathematics I	44	4				
MTT-111	Manual Machining I	110	5	MTT-111	Manual Machining I	88	4
MTT-121	CNC I: Set-Up and Operation	66	3	MTT-121	CNC I: Set-Up and Operation	88	4
Winter Term							
MFG-109	Computer Literacy for Technicians	33	3				
MTH-080	Technical Mathematics II	33	3				
MTT-112	Manual Machining II	110	5	MTT-112	Manual Machining II	88	4
MTT-122	CNC II: Programming and Operation	88	4				
--	Human Relations requirement (see page 82)		3				
Spring Term							
MTT-113	Manual Machining III	110	5	MTT-113	Manual Machining III	88	4
MTT-123	CNC III: Applied Programming and Operation	88	4				
MTT-141	CAD/CAM I	88	4				
WR-101*	Communication Skills: Occupational Writing	33	3				
Catalog Notes							
*Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty advisor or a staff member in Student Services for the transfer requirements of the specific advanced program or school.							
Oregon Tech Transfer Courses							
The Industrial Technology Department, in partnership with Oregon Tech, offers a significant number of transferable classes into Oregon Tech's Manufacturing Engineering Technology degree program. For information contact the Industrial Technology Department, 503-594-3318.							
TOTAL CURRENT CREDITS:			52	TOTAL PROPOSED CREDITS:			50
College Contact		Industrial Technology Department		Telephone No.		3318	
E-Mail Address				Fax No.			
Chief Academic Officer or PTE Dean Signature						Date	2/23/22



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	
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CAREER LEARNING AREA

<input type="checkbox"/> Ag, Food & Natural Resource Systems	<input type="checkbox"/> Health Services
<input type="checkbox"/> Arts, Information & Communications	<input type="checkbox"/> Human Resources
<input type="checkbox"/> Business & Management	<input type="checkbox"/> Industrial & Engineering Systems

PROGRAM INFORMATION

<u>APPROVED</u> Program Title <small>(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)</small>	<u>APPROVED</u> CIP Code <small>(Include 7th & 8th digits used for OCCURS reporting.)</small>			<u>APPROVED</u> Recognition Award	Current Credits
	6-digit CIP	7 th digit	8 th digit		
AAS Title: Machine Tool Technology AAS				<input type="checkbox"/> Associate of Applied Science (AAS) Degree	
Option Title**				<input type="checkbox"/> OPTION to AAS Degree	
Certificate Title: <u>Within</u> AAS Degree? <input checked="" type="checkbox"/> Yes** <input type="checkbox"/> No CNC Operator – Career Pathway CC.CNCMACHTECH	15.0613			<input checked="" type="checkbox"/> Career Pathway (12-44)	18

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

LAST AMENDMENT APPROVED ON 04.16.21

TYPE OF PROGRAM AMENDMENT

(Check ALL That Apply)


<input type="checkbox"/> New Program++	<input type="checkbox"/> Curriculum Revision	<input checked="" type="checkbox"/> Revision in Program Credits
<input type="checkbox"/> Title Change for Program		Proposed Total Credits: _____
Proposed AAS Title: _____		
Proposed OPTION Title: _____		
Proposed Certificate Title: _____		
<input type="checkbox"/> 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.]

<i>CURRENT CURRICULUM 21-22</i>				<i>PROPOSED CURRICULUM 22-23</i>			
<small>[List entire curriculum as last approved]</small>				<small>[List only course(s) to be amended]</small>			
Course	Title	Hours	Credits	Course	Title	Hours	Credits
MFG-104	Print Reading	33	3				
MFG-107	Industrial Safety & First Aid	33	3				
MTH-050	Technical Mathematics I	44	4	MTH-050*	Technical Mathematics I	44	4
MTT-111	Manual Machining I	110	5	MTT-111	Manual Machining I	88	4
MTT-121	CNC I: Set-Up and Operation	66	3	MTT-121	CNC I: Set-Up and Operation	88	4
Catalog Notes							
				*Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty advisor or a staff member in Student Services for the transfer requirements of the specific advanced program or school.			
TOTAL CURRENT CREDITS:			18	TOTAL PROPOSED CREDITS:			

College Contact	Industrial Technology Department	Telephone No.	3318
E-Mail Address		Fax No.	
Chief Academic Officer or PTE Dean Signature			Date 2/23/22



COMMUNITY COLLEGE PROGRAM AMENDMENT FORM

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

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<http://www.ode.state.or.us/search/results/?id=231>

College:	Clackamas Community College	Date	
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CAREER LEARNING AREA

<input type="checkbox"/> Ag, Food & Natural Resource Systems	<input type="checkbox"/> Health Services
<input type="checkbox"/> Arts, Information & Communications	<input type="checkbox"/> Human Resources
<input checked="" type="checkbox"/> Business & Management	<input type="checkbox"/> Industrial & Engineering Systems

PROGRAM INFORMATION

<u>APPROVED</u> Program Title	<u>APPROVED</u> CIP Code (Include 7 th & 8 th digits used for OCCURS reporting.)			<u>APPROVED</u> Recognition Award	Current Credits
(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)	6-digit CIP	7 th digit	8 th digit		
	AAS Title: Industrial Maintenance Technology AAS.INDMAINTECH				
Option Title**				<input type="checkbox"/> <i>OPTION</i> to AAS Degree	
Certificate Title: <i>Within</i> AAS Degree? <input type="checkbox"/> Yes** <input type="checkbox"/> No				<input type="checkbox"/> Certificate of Completion	

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

LAST AMENDMENT APPROVED ON 12/06/19

TYPE OF PROGRAM AMENDMENT

(Check ALL That Apply)

<input type="checkbox"/> New Program++	<input type="checkbox"/> Curriculum Revision	<input type="checkbox"/> Revision in Program Credits
<input type="checkbox"/> Title Change for Program		<i>Proposed Total Credits:</i> 97-98
<i>Proposed AAS Title:</i>		
<i>Proposed OPTION Title:</i>		
<i>Proposed Certificate Title:</i>		
<input type="checkbox"/> SUSPENSION of Program	<i>Reason for Suspension:</i>	
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.]

<i>CURRENT CURRICULUM 21-22</i>				<i>PROPOSED CURRICULUM 22-23</i>			
<small>[List entire curriculum as last approved]</small>				<small>[List only course(s) to be amended]</small>			
Course	Title	Hours	Credits	Course	Title	Hours	Credits
Industrial Maintenance Technology Associate of Applied Science Degree: 1st Year							
Fall Term							
IMT-104	Reading Schematics and Symbols	22	2				
MFG-103	Machining for Fabrication & Maintenance	66	3				
MFG-107	Industrial Safety & First Aid	33	3	Move to Spring			
MFG-109	Computer Literacy for Technicians	33	3	Move to Winter			
MFG-130	Basic Electricity I	33	3				
MTH-050	Technical Mathematics I	44	4				
				EET-139	Principles of Troubleshooting I	33	2
Winter Term							
COMM-100	Basic Speech Communication	33	3	REMOVE			
EET-139 or IMT-139	Principles of Troubleshooting I Or Principles of Troubleshooting I	33-44	2	Remove IMT-139. Move EET-139 to Fall			
IMT-120	Industrial Machinery I	66	3				
MFG-131	Basic Electricity II	33	3				
MFG-140	Principles of Fluid Power	66	3				
MTH-080	Technical Mathematics II	33	3				
				MFG-109	Computer Literacy for Technicians	33	3
				--	Human Relations Requirement		3
Spring Term							
IMT-110	Preventative Maintenance	44	2				
MFG-132	Basic Electricity III	33	3				
MFG-221	Materials Science	66	3				
MFG-280	Manufacturing Technology/CWE	72	2	Move to 2 nd Year, Spring Term			
WR-101	Communication Skills: Occupational Writing	33	3				
--	Program Elective		3	REMOVE			
				IMT-220	Industrial Machinery II	66	3
				MFG-107	Industrial Safety & First Aid	33	3
Industrial Maintenance Technology Associate of Applied Science Degree: 2nd Year							
Fall Term							

EET-239 or IMT-239	Principles of Troubleshooting II Or Principles of Troubleshooting II	33-44	2	Remove IMT-239			
IMT-108	Rigging and Lifting	44	2				
IMT-215	Electromechanical Systems I	44	2	REMOVE			
IMT-220	Industrial Machinery II	66	3	Move to 1 st Year, Spring Term			
WLD-150	Welding Processes	88	4				
--	Program Elective		3				
				EET-215	Technical Mechanics	66	3
Winter Term							
CDT-103 or CDT-108A	Computer-Aided Drafting I or Introduction to SolidWorks	66	3	REMOVE			
EET-233	Programmable Logic Controllers I	33	3				
IMT-223	Instrumentation & Controls	66	3	Move to 2 nd Year, Spring Term			
IMT-225	Electromechanical Systems II	44	2	REMOVE			
MFG-209	Programming & Automation for Manufacturing	33	3				
--	Program Elective		3				
				EET-225	Mechatronics I	44	2
				IMT-230	Introduction to Heating, Ventilation, and Air Conditioning	66	3
				--	CDT Elective		3
Spring Term							
EET-234	Programmable Logic Controllers II	33	3				
MET-170	Introduction to Manufacturing Processes	33	3				
MFG-219	Robotics	66	3				
MFG-280	Manufacturing Technology/CWE	72	2	HD-209 Or MFG-280	Job Search Skills Or Manufacturing Technology/CWE		3-4
--	Program Elective		3	REMOVE			
				EET-235	Mechatronics II	44	2
				IMT-223	Instrumentation & Controls	66	3
Industrial Maintenance Technology Program Electives							
Any course with a CDT, EET, GIS, MET, MFG, SM, or WLD prefix not included in the Industrial Maintenance Technology program or other technical course with approval.				Any course with a CDT, EET, GIS, MET, MFG, MTT , SM, or WLD prefix not included in the Industrial Maintenance Technology program or other technical course with approval.			
				CDT Electives			

		Any course with a CDT prefix not included in the Industrial Maintenance Technology program.	
TOTAL CURRENT CREDITS:	98	TOTAL PROPOSED CREDITS:	97-98

College Contact	Mike Mattson	Telephone No.	3322
E-Mail Address		Fax No.	
Chief Academic Officer or PTE Dean Signature			Date 2/28/22



COMMUNITY COLLEGE PROGRAM AMENDMENT FORM

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

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<http://www.ode.state.or.us/search/results/?id=231>

College:	Clackamas Community College	Date	
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CAREER LEARNING AREA

<input type="checkbox"/> Ag, Food & Natural Resource Systems	<input type="checkbox"/> Health Services
<input type="checkbox"/> Arts, Information & Communications	<input type="checkbox"/> Human Resources
<input checked="" type="checkbox"/> Business & Management	<input type="checkbox"/> Industrial & Engineering Systems

PROGRAM INFORMATION

<u>APPROVED</u> Program Title <small>(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)</small>	<u>APPROVED</u> CIP Code <small>(Include 7th & 8th digits used for OCCURS reporting.)</small>			<u>APPROVED</u> Recognition Award	<u>Curren</u> <u>t</u> Credits
	<u>6-digit CIP</u>	<u>7th digit</u>	<u>8th digit</u>		
AAS Title:				<input type="checkbox"/> Associate of Applied Science (AAS) Degree	
Option Title**				<input type="checkbox"/> OPTION to AAS Degree	
Certificate Title: <i>Within</i> AAS Degree? <input type="checkbox"/> Yes** <input type="checkbox"/> No Industrial Maintenance Technology CC.INDMAINTECH				<input checked="" type="checkbox"/> CC1 (45-60 credits)	51

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

LAST AMENDMENT APPROVED ON 01/19/18

TYPE OF PROGRAM AMENDMENT

(Check ALL That Apply)


<input type="checkbox"/> New Program++	<input type="checkbox"/> Curriculum Revision	<input checked="" type="checkbox"/> Revision in Program Credits
<input type="checkbox"/> Title Change for Program		<i>Proposed Total Credits:</i> 52
<i>Proposed AAS Title:</i>		
<i>Proposed OPTION Title:</i>		
<i>Proposed Certificate Title:</i>		
<input type="checkbox"/> SUSPENSION of Program	<i>Reason for Suspension:</i>	
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.]

<i>CURRENT CURRICULUM 21-22</i>				<i>PROPOSED CURRICULUM 22-23</i>			
<small>[List entire curriculum as last approved]</small>				<small>[List only course(s) to be amended]</small>			
Course	Title	Hours	Credits	Course	Title	Hours	Credits
Fall Term							
IMT-104	Reading Schematics and Symbols	22	2				
MFG-103	Machining for Fabrication & Maintenance	66	3				
MFG-107	Industrial Safety & First Aid	33	3	Move to Spring Term			
MFG-109	Computer Literacy for Technicians	33	3	Move to Winter Term			
MFG-130	Basic Electricity I	33	3				
MTH-050	Technical Mathematics I	44	4				
				EET-139	Principles of Troubleshooting I	33	2
Winter Term							
COMM-100	Basic Speech Communication	33	3	REMOVE			
EET-139 or IMT-139	Principles of Troubleshooting I Or Principles of Troubleshooting I	33-44	2	Remove IMT-139. Move EET-139 to Fall Term			
IMT-120	Industrial Machinery I	66	3				
MFG-131	Basic Electricity II	33	3				
MFG-140	Principles of Fluid Power	66	3				
MTH-080	Technical Mathematics II	33	3				
				MFG-109	Computer Literacy for Technicians	33	3
				--	Human Relations Requirements		3
Spring Term							
IMT-110	Preventative Maintenance	44	2				
MFG-132	Basic Electricity III	33	3				
MFG-221	Materials Science	66	3				
MFG-280	Manufacturing Technology/CWE	72	2	Remove			
WR-101	Communication Skills: Occupational Writing	33	3				
--	Electives		3				
				IMT-220	Industrial Machinery II	66	3
				MFG-107	Industrial Safety & First Aid	33	3

Industrial Maintenance Technology Program Electives			
Any course with a CDT, EET, GIS, MET, MFG, SM, or WLD prefix not included in the Industrial Maintenance Technology program or other technical course with approval.		Any course with a CDT, EET, GIS, MET, MFG, MTT , SM, or WLD prefix not included in the Industrial Maintenance Technology program or other technical course with approval.	
TOTAL CURRENT CREDITS:	51	TOTAL PROPOSED CREDITS:	52

College Contact	Mike Mattson	Telephone No.	3322
E-Mail Address		Fax No.	
Chief Academic Officer or PTE Dean Signature			Date 2/28/22



COMMUNITY COLLEGE PROGRAM AMENDMENT FORM

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

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<http://www.ode.state.or.us/search/results/?id=231>

College:	Clackamas Community College	Date	
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CAREER LEARNING AREA

<input type="checkbox"/> Ag, Food & Natural Resource Systems	<input type="checkbox"/> Health Services
<input type="checkbox"/> Arts, Information & Communications	<input type="checkbox"/> Human Resources
<input checked="" type="checkbox"/> Business & Management	<input type="checkbox"/> Industrial & Engineering Systems

PROGRAM INFORMATION

<u>APPROVED</u> Program Title <small>(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)</small>	<u>APPROVED</u> CIP Code <small>(Include 7th & 8th digits used for OCCURS reporting.)</small>			<u>APPROVED</u> Recognition Award	Current Credits
	<u>6-digit CIP</u>	<u>7th digit</u>	<u>8th digit</u>		
AAS Title:				<input type="checkbox"/> Associate of Applied Science (AAS) Degree	
Option Title**				<input type="checkbox"/> OPTION to AAS Degree	
Certificate Title: <i>Within</i> AAS Degree? <input type="checkbox"/> Yes** <input type="checkbox"/> No Industrial Maintenance Technology Mechanical Maintenance CC.IMTMECHMAIN				<input checked="" type="checkbox"/> CC1 (45-60 credits)	49

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

LAST AMENDMENT APPROVED ON 01/19/18

TYPE OF PROGRAM AMENDMENT


(Check ALL That Apply)

<input type="checkbox"/> New Program++	<input type="checkbox"/> Curriculum Revision	<input checked="" type="checkbox"/> Revision in Program Credits
<input type="checkbox"/> Title Change for Program		<i>Proposed Total Credits:</i> 47
<i>Proposed AAS Title:</i>		
<i>Proposed OPTION Title:</i>		
<i>Proposed Certificate Title:</i>		
<input type="checkbox"/> SUSPENSION of Program	<i>Reason for Suspension:</i>	

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.]

<i>CURRENT CURRICULUM 21-22</i>				<i>PROPOSED CURRICULUM 22-23</i>			
[List entire curriculum as last approved]				[List only course(s) to be amended]			
Course	Title	Hours	Credits	Course	Title	Hours	Credits
Fall Term							
IMT-104	Reading Schematics and Symbols	22	2				
IMT-108	Rigging and Lifting	44	2				
MFG-103	Machining for Fabrication & Maintenance	66	3				
MFG-107	Industrial Safety & First Aid	33	3				
MFG-109	Computer Literacy for Technicians	33	3				
MTH-050	Technical Mathematics I	44	4				
Winter Term							
COMM-100	Basic Speech Communication	33	3	REMOVE			
IMT-120	Industrial Machinery I	66	3				
MFG-140	Principles of Fluid Power	66	3				
MTH-080	Technical Mathematics II	33	3				
WLD-150	Welding Processes	88	4				
				--	Human Relations Requirement		3
Spring Term							
IMT-110	Preventative Maintenance	44	2				
MET-170	Introduction to Manufacturing Processes	33	3	REMOVE			
MFG-221	Materials Science	66	3				
MFG-280	Manufacturing Technology/CWE	72	2	REMOVE			
WR-101	Communication Skills: Occupational Writing	33	3				
--	Electives		3				
				IMT-220	Industrial Machinery II	66	3
Industrial Maintenance Technology Program Electives							
Any course with a CDT, EET, GIS, MET, MFG, SM, or WLD prefix not included in the Industrial Maintenance Technology program or other technical course with approval.				Any course with a CDT, EET, GIS, MET, MFG, MTT , SM, or WLD prefix not included in the Industrial Maintenance Technology program or other technical course with approval.			
TOTAL CURRENT CREDITS:			49	TOTAL PROPOSED CREDITS:			47

College Contact	Mike Mattson	Telephone No.	3322
E-Mail Address		Fax No.	
Chief Academic Officer or PTE Dean Signature		Date	2/28/22



COMMUNITY COLLEGE PROGRAM AMENDMENT FORM

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

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<http://www.ode.state.or.us/search/results/?id=231>

College:	Clackamas Community College	Date	
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CAREER LEARNING AREA

<input type="checkbox"/> Ag, Food & Natural Resource Systems	<input type="checkbox"/> Health Services
<input type="checkbox"/> Arts, Information & Communications	<input type="checkbox"/> Human Resources
<input type="checkbox"/> Business & Management	<input type="checkbox"/> Industrial & Engineering Systems

PROGRAM INFORMATION

<u>APPROVED</u> Program Title <small>(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)</small>	<u>APPROVED</u> CIP Code (Include 7 th & 8 th digits used for OCCURS reporting.)			<u>APPROVED</u> Recognition Award	<u>Curren</u> <u>t</u> Credits
	<u>6-digit CIP</u>	<u>7th digit</u>	<u>8th digit</u>		
AAS Title: Computer-Aided Manufacturing AAS.COMPAIDEMFG	15.1302			✓ AAS (90-108 credits)	98
Option Title**				<input type="checkbox"/> OPTION to AAS Degree	
Certificate Title: <u>Within</u> AAS Degree? <input type="checkbox"/> Yes** <input type="checkbox"/> No				<input type="checkbox"/> Certificate of Completion	

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

LAST AMENDMENT APPROVED ON 01/19/18

TYPE OF PROGRAM AMENDMENT

(Check ALL That Apply)

<input type="checkbox"/> New Program++	<input type="checkbox"/> Curriculum Revision	✓ Revision in Program Credits
<input type="checkbox"/> Title Change for Program		<i>Proposed Total Credits:</i> 96-97
<i>Proposed AAS Title:</i>		
<i>Proposed OPTION Title:</i>		
<i>Proposed Certificate Title:</i>		
<input type="checkbox"/> SUSPENSION of Program	<i>Reason for Suspension:</i>	
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
Computer-Aided Manufacturing Associate of Applied Science Degree: 1 st Year							
Fall							
CDT-102	Sketching & Problem Solving	66	3				
MFG-111	Machine Tool Fundamentals I	198	6	REMOVE			
MTH-050**	Technical Mathematics I	44	4				
WR-101**	Communication Skills: Occupational Writing	33	3	Move to 1 st Year, Winter Term			
				MTT-111	Manual Machining I	88	4
				MTT-121	CNC I: Set-Up and Operation	88	4
Winter							
CDT-108A	Introduction to SolidWorks	66	3				
MFG-105	Dimensional Inspection	28	2	REMOVE			
MFG-109	Computer Literacy for Technicians	33	3	REMOVE			
MFG-112	Machine Tool Fundamentals II	198	6	REMOVE			
MTH-080**	Technical Mathematics II	33	3				
				MTT-112	Manual Machining II	88	4
				MTT-122	CNC II: Programming and Operation	88	4
				WR-101**	Communication Skills: Occupational Writing	33	3
Spring							
CDT-225	Advanced SolidWorks	66	3				
MFG-106	Advanced Applied Geometric Dimensioning and Tolerancing for Manufacturing	33	3	REMOVE			
MFG-113	Machine Tool Fundamentals III	198	6	REMOVE			
MFG-221	Materials Science	66	3				
--	CAD/CAM program elective		3	REMOVE			
				MTT-123	CNC III: Applied Programming and Operation	88	4
				MTT-141	CAD/CAM I	88	4
				--**	Human Relations requirement		3
Computer-Aided Manufacturing Associate of Applied Science Degree: 2 nd Year							
Fall							
CDT-223	Inventor Fundamentals	66	3	CDT-130	Introduction to Fusion	44-66	2-3

				Or CDT-223	Or Inventor Fundamentals		
MFG-130	Basic Electricity I	33	3				
MFG-201	CNC I: Set-up and Operation	88	4	REMOVE			
MFG-204	Computer-Aided Manufacturing I	88	4	REMOVE			
---**	Human Relations requirement		3	Move to 1 st Year, Spring Term			
				EET-215	Technical Mechanics	66	3
				MFG-218	Lean Manufacturing and Quality Systems	33	3
				MTT-241	CAD/CAM II	88	4
Winter							
MFG-107	Industrial Safety & First Aid	33	3				
MFG-202	CNC II: Programming & Operation	88	4	REMOVE			
MFG-205	Computer-Aided Manufacturing II	88	4	REMOVE			
MFG-209	Programming & Automation for Manufacturing	33	3				
				CDT-103	Computer-Aided Drafting I	66	3
				EET-225	Mechatronics I	44	2
				EET-233	Programmable Logic Controllers I	33	3
				MTT-242	CAD/CAM III	88	4
Spring							
MET-170	Introduction to Manufacturing Processes	33	3				
MFG-203	CNC III: Applied Programming & Operation	66	3	REMOVE			
MFG-206	Computer-Aided Manufacturing III	66	3	REMOVE			
MFG-219	Robotics	66	3				
MFG-280	Manufacturing Technology/CWE	216	4	HD-209 Or MFG-280	Job Search Skills Or Manufacturing Technology/CWE	33- 108	3
				EET-234	Programmable Logic Controllers II	33	3
				EET-235	Mechatronics II	44	2
Computer-Aided Manufacturing Program Electives							
Any course with a CDT, EET, MFG, RET or WLD prefix not included in the Computer-Aided Manufacturing program.				REMOVE			
Students with specialized job training needs may be eligible to substitute some classes. Consult your instructor or the department chair for more information.							
**Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty							

advisor or a staff member in Student Services for the transfer requirements of the specific advanced program or school.			
TOTAL CURRENT CREDITS:	98	TOTAL PROPOSED CREDITS:	96-97

College Contact	Mike Mattson	Telephone No.	3322
E-Mail Address		Fax No.	
Chief Academic Officer or PTE Dean Signature			Date 2/28/22

March 4, 2022

Program	Implementation
Computer-Aided Drafting (CAD) CC	2022/SU



COMMUNITY COLLEGE PROGRAM AMENDMENT FORM

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

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College:	Clackamas Community College	Date	
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CAREER LEARNING AREA

<input type="checkbox"/> Ag, Food & Natural Resource Systems	<input type="checkbox"/> Health Services
<input type="checkbox"/> Arts, Information & Communications	<input type="checkbox"/> Human Resources
<input type="checkbox"/> Business & Management	<input type="checkbox"/> Industrial & Engineering Systems

PROGRAM INFORMATION

<u>APPROVED</u> Program Title <small>(For Official Program Title, refer to your directory at http://www.ode.state.or.us/search/results/?id=232)</small>	<u>APPROVED</u> CIP Code <small>(Include 7th & 8th digits used for OCCURS reporting.)</small>			<u>APPROVED</u> Recognition Award	Current Credits
	<u>6-digit CIP</u>	<u>7th digit</u>	<u>8th digit</u>		
AAS Title:				<input type="checkbox"/> Associate of Applied Science (AAS) Degree	
Option Title**				<input type="checkbox"/> OPTION to AAS Degree	
Certificate Title: <i>Within</i> AAS Degree? <input checked="" type="checkbox"/> Yes** <input type="checkbox"/> No Computer-Aided Drafting (CAD) CC.CAD	15.0307	C	*	<input checked="" type="checkbox"/> CC (12-30)	24

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

TYPE OF PROGRAM AMENDMENT

(Check ALL That Apply)

<input type="checkbox"/> New Program++	<input type="checkbox"/> Curriculum Revision	<input checked="" type="checkbox"/> Revision in Program Credits
<input type="checkbox"/> Title Change for Program		<i>Proposed Total Credits:</i>
<i>Proposed AAS Title:</i>		
<i>Proposed OPTION Title:</i>		
<i>Proposed Certificate Title:</i>		
<input type="checkbox"/> SUSPENSION of Program	<i>Reason for Suspension:</i>	
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.]

<i>CURRENT CURRICULUM 21-22</i>				<i>PROPOSED CURRICULUM 22-23</i>				
<small>[List entire curriculum as last approved]</small>				<small>[List only course(s) to be amended]</small>				
Course	Title	Hours	Credits	Course	Title	Hours	Credits	
Fall Term								
CDT-102	Sketching & Problem Solving	66	3					
CDT-223	Inventor Fundamentals	66	3					
MTH-050*	Technical Mathematics I	44	4					
Winter Term								
CDT-103	Computer-Aided Drafting I	66	3					
CDT-108A	Introduction to SolidWorks	66	3					
CDT-130	Introduction to Fusion	44	2					
Spring Term								
CDT-225	Advanced SolidWorks	66	3					
CDT-240	Revit for Architecture	66	3					
Catalog Notes								
*Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty advisor or a staff member in Student Services for the transfer requirements of the specific advanced program or school.								
TOTAL CURRENT CREDITS:				24	TOTAL PROPOSED CREDITS:			

College Contact	Industrial Technology Department	Telephone No.	3318
E-Mail Address		Fax No.	
Chief Academic Officer <i>or</i> PTE Dean Signature		Date	

This form provides additional information required by the NWCCU for accreditation
Signed copies must be submitted two weeks prior to [Curriculum Committee meetings](#)

Program Presenter	Mike Mattson
Program Department/Division	Industrial Technology
Program Type	CC (Certificate, 12-30 Credits)
If CPCC or Related Cert, list Parent Program	Click to enter text.
Complete Program Title	Computer-Aided Drafting (CAD)
Credit Total	24

Catalog description of new program***Must match description from CCWD CTE Program of Study Application***

The Computer-Aided Drafting (CAD) certificate supports students to gain the skills needed to enter the workforce as drafters and design technicians in manufacturing, construction, and architectural settings. The program gives students the opportunity to develop skills and explore multiple drafting approaches and technologies. Many of the courses are part of the Computer-Aided Manufacturing AAS.

Similar to an existing program?

Many of the courses are also included in the Computer-Aided Manufacturing Pathway

Program-Level Student Learning Outcomes

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

1. apply computer software applications to produce manufacturing, construction, and architectural-related documents to scale;
2. create 2D and 3D CAD models;
3. model CNC machining processes and generate G&M code;
4. demonstrate fundamental competency using AutoCAD Inventor software;
5. create solid models, assemblies, and drawings based on design intent;
6. create and design construction documents used in Building Information Modeling;
7. apply problem-solving skills to document a new product or process.

Program-Level Assessment Plan

Computer-Aided Manufacturing Assessment plan (under development) will include this program

Related Instruction Courses in the Program

N/A

Describe your Marketing plan.

The Industrial Technology Department has applied for CCC Innovation Funds to support marketing and outreach for this program. As part of the marketing plan for this certificate, print materials, video content, advising guides, and social media strategies will be created and implemented in collaboration with CCC College Relations and Marketing and the Industrial Technology and Automotive Education Focus Area Navigator.

Will there be revenues associated with the new program?

(i.e. bonds, grants, reallocation)

- Yes No

New Courses needed?

- Yes No

Course Title	Credit Hours	Term
CDT-130 Introduction to Fusion	2	Winter
CDT – 240 Revit for Architecture	3	Spring

New Sections needed?

- Yes No

Additional faculty needed?

- Yes No

Please explain how current faculty will be sufficient to staff new program

Many of the courses are already being offered in the Computer-Aided Manufacturing Program

New physical facilities and equipment needed?

- Yes No

Please explain how the current physical facilities and equipment will be allocated to meet the needs of the new program

The program will utilize existing classrooms and computer labs in the Industrial Technology Center.

New Student Services needed?

For questions and assistance, contact Curriculum Office at curriculum@clackamas.edu

[Link to student services listed in the current catalog](#)

Yes No

Please explain how the current Student Services will accommodate the needs of the new program

Student services are already in place for the CAM program and these students will be taking several courses in that program.

Other expenses?

Yes No



2/28/22

Division Dean Signature/Date

Department Chair Signature/Date

Faculty/Program Lead Signature/Date

(optional)



APPLICATION for a NEW PROGRAM
CAREER TECHNICAL EDUCATION (CTE)

Department forms change periodically. It is the college's responsibility to use the most current forms available. Current forms, handouts and other useful resources are located at <http://www.ode.state.or.us/opportunities/grants/perkins/postsecondary/appsandwkshts.aspx>

Note: It is essential that the companion document, the Planning Guide & Application Worksheet, is used in representing your new program. The Application Worksheet must be kept on file at the college and made available upon request.

Section 1. College Contact Information

College	Clackamas Community College
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College Point Of Contact	Dru Urbassik
Title	Director, Curriculum & Scheduling
Department, Division	Institutional Effectiveness & Planning
Mailing Address	19600 Molalla Avenue
City, State Zip Code	Oregon City, OR 97045
Phone	503-594-6217
Fax	503-650-6659
E-Mail	dru.urbassik@clackamas.edu

Program Contact Person	Mike Mattson
Title	Department Chair
Department, Division	Industrial Technology Department
Mailing Address	19600 Molalla Ave
City, State Zip Code	Oregon City, OR 97045
Phone	503-594-3322
Fax	
E-Mail	mattsonm@clackamas.edu

Section 2. Program Award Information

Name of Proposed Program	Computer-Aided Drafting (CAD)
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	Type of Program (Check all that apply if the programs are related)	Total Credits
✓	Associate of Applied Science (AAS) Degree	
	Associate of Applied Science Degree, Option (An option is a specialized area within a base AAS. Must maintain 70% of common credits with base AAS)	
x	Certificate of Completion	24

	Business and Industry-based Program (privately-contracted, closed enrollment)
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✓	Career Area (please check the appropriate area)
	Agriculture, Food & Natural Resources Systems
	Arts, Information & Communications
	Business & Management

	Health Services
	Human Resources
x	Industrial & Engineering Systems

EII Education Specialist	
Name	
Phone	
E-Mail	

Proposed Program Implementation Date	September 2022
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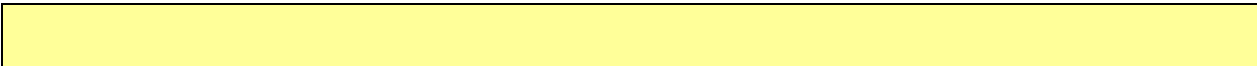
CIP Code	15.1307	CIP Title	Modeling and Design Technician
CIP Narrative Description			
<p>A program that prepares individuals to apply technical knowledge and skills in the use of three-dimensional (3-D) computer technology to create technical illustrations and models used in manufacturing, design, production, and construction. Includes instruction in 3-D computer-aided design (CAD), 3-D printing, 3-D model design and construction, and 3-D scanning.</p>			

Program Summary
<p>The Computer-Aided Drafting (CAD) certificate supports students to gain the skills needed to enter the workforce as drafters and design technicians in manufacturing, construction, and architectural settings. The program gives students the opportunity to develop skills and explore multiple drafting approaches and technologies. Many of the required courses are part of the Computer-Aided Manufacturing AAS.</p>

	Financial Assistance Options Sought for and/or Approved for the Program	
✓	(Check all that apply)	
✓	Federal Financial Aid Options	
✓	Workforce Investment Act – Individual Training Account	
✓	Veterans Benefits	
✓	State of Oregon Financial Aid	Describe: Oregon Opportunity Grant
✓	College Financial Aid	Describe: Scholarships, tuition waivers, internships
✓	Private Business, Foundation Aid	Describe: Scholarships
✓	Other:	Describe: Voc Rehab funds, Social Services funds, Tribal Educational funds

Section 3. Program Approval Standards

Standard A
<i>Need: The community college provides clear evidence of the need for the program.</i>
Program Highlights
<p>The demand for drafters in the Portland Metro Area is continuing to grow. In the next ten years, demand is expected to grow by 16.9%, with a mix of new openings and replacement openings. The occupation is expected to grow at about the statewide and regional average growth rate for all occupations in the state through 2030.</p>



Standard B

Collaboration: *The community college utilizes systemic methods for meaningful and ongoing involvement of the appropriate constituencies.*

Program Highlights

This certificate is part of the Computer-Aided Manufacturing (CAM) pathway and supports students who are interested in pursuing the CAM one-year certificate or two-year associates degree or take the courses in the Computer-Aided Drafting (CAD) certificate and work as drafters or design technicians. This need for drafters and design technicians has been vetted with employers, department faculty and students.

Standard C

Alignment: *The program is aligned with appropriate education, workforce development, and economic development activities.*

Program Highlights

While this is a short term certificate that can be completed on its own or as part of a pathway to a one-year certificate or two-year degree, the CAD certificate leads directly to employment. Because it is a short term certificate, it is aligned with workforce training dollars and other grant funds to support students. Once approved the college will apply for the program to be included on the Workforce Innovation and Opportunity Act, Eligible Training Provider List.

Standard D

Design: *The program leads to student achievement of academic and technical knowledge, skills, and related proficiencies.*

Program Highlights

Upon successful completion of this program, students should be able to: apply computer software applications to produce manufacturing, construction, and architectural related documents to scale, create 2D and 3D CAD models; model CNC machining processes and generate G&M code, demonstrate fundamental competency using AutoCAD Inventor software, create solid models, assemblies, and drawings based on design intent, create and design construction documents used in Building Information Modeling, apply problem solving skills to document a new product or process.

Standard E

Capacity: The community college identifies and has the resources to develop, implement, and sustain the program.

Program Highlights

Many of the courses in this program are already developed and are being delivered as part of the Computer Aided Manufacturing certificate and degree pathway. The Department is also identifying resources to market the program and has student recruitment/retention resources in place to support access and completion.

Section 4. Proposed Curriculum

PROPOSED CURRICULUM [List in a Defined Sequence of Courses Format, e.g., Quarter-to-quarter mapping]			
Course Number	Course Title	Clock Hours	Credits
Fall Term			
CDT-102	Sketching & Problem Solving	66	3
CDT-223	Inventor Fundamentals	66	3
MTH-050	Technical Mathematics I	44	4
Winter Term			
CDT-103	Computer-Aided Drafting I	66	3
CDT-108A	Introduction to SolidWorks	66	3
CDT-130	Introduction to Fusion	44	2
Spring Term			
CDT-225	Advanced SolidWorks	66	3
CDT-240	Revit for Architecture	66	3
TOTAL PROPOSED CREDITS:			24

Section 5. Assurances and Signature

College Authority Signature
(Applications must be signed by the chief academic officer or the president)

I have reviewed this application and supporting documents and attest to the accuracy, clarity, and completeness. The college will comply with the following assurances:

- Access.** The college and program will affirmatively provide access, accommodations, flexibility, and additional/supplemental services for special populations and protected classes of students.
- Continuous improvement.** The college has assessment, evaluation, feedback, and continuous improvement processes or systems in place. For the proposed program, there will be opportunities for input from and concerning the instructor(s), students, employers, and other partners/stakeholders. Program need and labor market information will be periodically re-evaluated and changes will be requested as needed.

3. **Adverse impact & detrimental duplication.** The college will follow all current laws, rules, and procedures and has made good faith efforts to avoid or resolve adverse *intersegmental* and *intra-segmental* impact and detrimental duplication problems with other relevant programs or institutions.
4. **Program records maintenance & congruence.** The college acknowledges that the records concerning the program title, curriculum, CIP code, credit hours, and other identifying and descriptive information maintained by the Department are the official records and it is the college's responsibility to keep the college records aligned with those of the Department. The college will not make changes to the program without informing and/or receiving approval from the Department.

Our staff has worked closely with CCWD-EII staff in the development of the proposed program and completion of this application. The proposed program:

1. Has been designed to meet the State Board of Education approval standards for Need,
2. Collaboration, Alignment, Design and Capacity, as well as the elements identified that that are essential to a quality program;
3. Our college board has approved the proposed program described in this application;
4. All local campus procedures have been completed; and
5. This program is ready to be reviewed by CCWD-EII staff on behalf of the State Board of Education.

It is understood that documentation or evidence may be requested by CCWD-EII staff if additional information is needed.

Signature	
Title	Director, Curriculum & Scheduling
Name (Printed or typed)	Dru Urbassik
Date	