Curriculum Committee Meeting Agenda

Voting Committee Members
Chair – Stephen Shwiff (Social Sciences)
Vice Chair – Pam Morse (Math)

Kristen Booth (Pre-College)	Emilie Miller (Science)	Andrea Ware (CTE)
P.K. Hoffman (Arts & Hum)	Mimi Pentz (Nurs/Hlth Occ)	
Katy Jablonski (Wr/FL/Eng)	Rebecca Schwartz (Inst Dean)	

Non-Voting Committee Members
Jarett Gilbert (VP Instructional Services)
Mary Martin (Student Services/Registrar)
Susan Lewis (Curriculum)

Support Staff
Sara Wade (Curriculum)

Guests
Jim Pytel, Kalie Brunton, Patrick Hawke, Abel Wolman

March 17, 2022 3:30 pm – 5:00 pm
Hood River Indian Creek Campus, room 1.209 (conference room)
Zoom log-in: https://cgcc.zoom.us/j/93747697434
Meeting ID: 937 4769 7434; phone in: 1-253-215-8782

Approval of March 3, 2022 minutes [1]

Old Business

1. Item still pending: AAOT – Elementary Education MTM: further review/approval pending research/input from CGCC's Elementary Educator Pathway team.
2. Item pending until spring Retreat: potential addition of second CTE representative as CC voting member.

New Business

Submissions [2]

1. Kalie Brunton, Patrick Hawke & Jim Pytel (3:40 – 4:15 pm)
    - EET 180 Industrial Computing (New CTE Course)
    - EET 221 Semiconductor Devices and Circuits 1 (Course Revision: des, out, cont, txt/mat)
    - EET 231 Semiconductor Devices and Circuits 2 (New CTE Course)
    - SAF 188 Industrial Safety and OSHA 10 (Contact Hour/Credit Revision)
    - SAF 188 Industrial Safety and OSHA 10 (Course Revision: des, out, cont, txt/mat)
    - Electro-Mechanical Technology CPC (Certificate Revision: courses, credits)
    - Electro-Mechanical Technology AAS (Degree Revision: courses, credits)
2. Pam Morse & Abel Wolman (4:15 – 4:30 pm)
    - MTH 105L Foundations of Math in Society (New LDC Course)
    - MTH 243 Statistics I (Contact Hours / Credit Change)
    - MTH 243L Foundations of Statistics (New LDC Course)

Next Meeting: April 7, 2022

Attachments: [1] March 3, 2022 Minutes; [2] Submissions: 2 New CTE Courses, 2 New LDC Courses, 2 Course Revisions, 2 Contact Hours / Credit Change, 1 Cert Revision, 1 Degree Revision

Curriculum Committee Minutes
March 3, 2022
Location: TDC via Zoom & HRC 1.209 (Conference Room)
Zoom Link: https://cgcc.zoom.us/j/94050093771

PRESENT:

Voting Committee Members

Chair- Stephen Shwiff (Social Science)
Vice Chair- Pam Morse (Math)
Andrea Ware (CTE)
Mimi Pentz (Nurs/Hlth)
Rebecca Schwartz (Inst Dean)
Emilie Miller (Science)

Non-Voting Committee Members

Susan Lewis (Curriculum)
Jarett Gilbert (VP Instructional Services)
Mary Martin (Student Services)

Supporting Staff

Sara Wade (Curriculum)

Guest

Bryan Despain, Kate Wuster

ABSENT

Voting Committee Members

P.K. Hoffman (Arts & Hum)
Katy Jablonski (Wr/FL/Eng)
Kristen Booth (Pre-College)

Non-Voting Committee Members

Item	Discussion	Action
Call to Order:	Meeting was called to order at 3:37pm by Chair Stephen Shwiff.	
Approval of February 10, 2022	**Motion: approve as written.**	Motion: Pam 2nds: Mimi 6 in favor – 0 opposed – 0 abstains
Old Business:		
1. Item still pending: AAOT – Elementary Education MTM: further review/approval pending	Susan explains the Old Business 1. AAOT-Elementary Education MTM still pending.	

research/input from CGCC's Elementary Educator Pathway team. 2. Item still pending: FYE discussion – FYE Committee to provide an outline of content to aid in the discussion. Pending receipt of outline. 3. Item pending until spring Retreat: potential addition of second CTE representative as CC voting member.	2. It was the hope to receive an outline of content to aid in more discussion. Susan shared that a submission was submitted for the FYE course but was sent back for fixes. Rebecca shared that it was not an official submission but a miscommunication in sharing what the outcome would look like. 3. CTE representative will be pending until the CC retreat.	
New Business:	Kate Wuster and Bryan Despain explained to the committee the reasoning behind the 2 new AMT certificates. • Per FAA recommendations of splitting the Airframe and Powerplant certificates and FAA certification tests to help student succeed in both without overwhelming them. • Concern about a possible job attained upon completion of each certificate: o Bryan explained that there is an actual job(s) that would just require the Airframe certificate but it would be an entry level position with little to no room for growth. The intention is to have both of the certificates to offer the best career outcome for students. • Concern about students being able to retain the information taught from the previous year. o Bryan explains that the program was built so as students move thru the next year they will be building on the skills taught previously.	
Submissions:		
AMT 194A Aviation Maintenance: General 104A (Related Instruction)	**Motion: approve as written.**	Motion: Rebecca 2nds: Pam 6 in favor – 0 opposed – 0 abstains

AMT 194B Aviation Maintenance: General 104B (Related Instruction)	**Motion: approve as written.**	Motion: Rebecca 2nds: Pam 6 in favor – 0 opposed – 0 abstains
Aviation Maintenance Technology (Cert Revision with RI Template: course, credits, RI)	Susan shared that this submission and the following votes will also include the related instruction. Pam questioned MTH 105 in the RI form and it was discussed to change it to MTH 110, previous to the meeting, mistype and Susan will update the three certificates. **Motion: approve with an amendment to change MTH 105 to MTH 110 in the RI form.**	Motion: Pam 2nds: Rebecca 6 in favor – 0 opposed – 0 abstains
Aviation Maintenance Technology AAS (Degree Revision: course, credits)	**Motion: approve as written.**	Motion: Pam 2nds: Mimi 6 in favor – 0 opposed – 0 abstains
Aviation Airframe (New Cert with RI Template)	**Motion: approve with an amendment to change MTH 105 to MTH 110 in the RI form.**	Motion: Pam 2nds: Emilie 6 in favor – 0 opposed – 0 abstains
Aviation Powerplant (New Cert with RI Template)	**Motion: approve with amendment to change MTH 105 to MTH 110 in the RI form.**	Motion: Pam 2nds: Emilie 6 in favor – 0 opposed – 0 abstains
	*Bryan updates the committee the status on the FAA approval and the donation of a new aircraft to help fulfill the concerns that the FAA had with the program. And a possible program start date of Fall term.	
Meeting Adjourned: 4:30pm	**Meeting adjourned at 4:30pm.** **All in favor.**	
Next Meeting: March 17, 2022		

CC date _____
CC decision _____
CC vote _____

Columbia Gorge Community College

New Course
Career Technical Education (CTE)

(Double click on check boxes to activate dialog box)

SECTION #1 GENERAL INFORMATION				
Department:	CTE – EM-Tech		Submitter name: Phone: Email:	Patrick Hawke phawke@cgcc.edu
Prefix and Course Number:	EET 180		Credits:	3
Course Title: (60 characters max, including spaces)	Industrial Computing		Transcript Title: (30 characters max, including spaces)	Industrial Computing
May this course be repeated for credit?	☐ Yes ☒ No	For how many times?	Contact hours:	Lecture: 20 Lec/lab: 20 Lab: 0
Is this course equivalent to another? They must have the same description, outcomes and credit.			☐ Yes ☒ No	Prefix, number and title:
Reason for the new course.	Match STEM committee guidance.			

GRADE OPTIONS: Check as many or as few options as you'd like. **Choose the default grade option**. The default grade refers to the option that is listed at the top of the dropdown menu for the CRN. Students who do not make a choice or do not make a change in the dropdown menu will automatically be assigned to the default grade option.

	Check all that apply	Default (Choose one)
A-F (letter grade)	☒	☒
Pass/No pass	☒	☐
Audit in consultation with faculty	☒	☐

REQUISITES: Identify prerequisite, corequisite and concurrent course(s)

☐ Standard requisites – Prerequisite: MTH 20 or equivalent placement test scores.
Prerequisite/concurrent: WR 121.

☐ placement into:	☐ placement into:		
course prefix & number: MTH 65 or equivalent placement test scores	☒ prerequisite	☐ corequisite	☐ pre/co
course prefix & number:	☐ prerequisite	☐ corequisite	☐ pre/co

COURSE DESCRIPTION: To be used in the catalog and schedule of classes. Begin each sentence of the course description with an active verb. Avoid using the phrases: "This course will …" and/or "Students will …" Include course requisites in the description. Guidelines for writing concise descriptions can be found at Writing Course Descriptions.

Explores computers and computer applications in an industrial environment. Discusses computer hardware, software, and maintenance, operating systems and file management, networking, databases, and word processing, spreadsheet, and presentation software. Prerequisite: MTH 65 or equivalent placement test scores. Audit available.

LEARNING OUTCOMES: Describe what the student will be able to do "out there" (in their life roles as worker, family member, community citizen, global citizen or lifelong learners). Outcomes must be measurable through the application of direct and/or indirect assessment strategies. Three to six outcomes are recommended. Start each outcome with an active verb, completing the sentence starter provided. (See Writing Learning Outcomes on the curriculum website.)	
Outcomes: (Use observable and measurable verbs)	Upon successful completion of this course, students will be able to: 1. Demonstrate an understanding of computer hardware by being able to physically locate, identify the purpose, and interpret technical data of major components within a computer. 2. Demonstrate the ability to use an operating system by being able to create, save, manage, transfer, and open files in various computer operating system platforms. 3. Demonstrate an understanding of spreadsheet application by utilizing a spreadsheet program to create and manipulate worksheet data to calculate and plot properties of electro-mechanical systems. 4. Demonstrate an understanding of word processing and presentation creation software by being able to communicate technical data and create uncomplicated presentations. 5. Demonstrate the use of a database by being able to interact with data tables to enter, retrieve, manage and interpret data as information. 6. Demonstrate an understanding of networks by being able to identify basic operations of computer networks and apply networking concepts and standards.
Outcomes assessment strategies:	In class worksheets, quizzes, exams, and lab practical.
COURSE CONTENT, ACTIVITIES AND DESIGN	
Activity & Design: The determination of teaching strategies used in the delivery of outcomes is generally left to the discretion of the instructor. On occasion, a department may decide that the inclusion of a particular strategy will be required (specify in "required activities" box below). For example, a department may determine that a course will be required to incorporate a service learning project into its curriculum delivery. However, for the most part, delivery mechanisms fall under academic freedom and so the individuality and creativity of each instructor. Here are some strategies that you might consider when designing your course: lecture, small group/forum discussion, flipped classroom, dyads, oral presentation, role play, simulation scenarios, group projects, service learning projects, hands-on lab, peer review/workshops, cooperative learning (jigsaw, fishbowl), inquiry based instruction, differentiated instruction (learning centers), graphic organizers, etc.	
Department required course activities (optional)	
Course Content – organized by outcomes (list each outcome followed by an outline of the related content)	**Outcome #1:** Demonstrate an understanding of computer hardware by being able to physically locate, identify the purpose, and interpret technical data of major components within a computer. • motherboards • processors • memory • storage

	• I/O (input and output) **Outcome #2:** Demonstrate the ability to use an operating system by being able to create, save, manage, transfer, and open files in various computer operating system platforms. • Coursework Portfolio content: o Classwork activities o Project files o Lab results **Outcome #3:** Demonstrate an understanding of spreadsheet application by utilizing a spreadsheet program to create and manipulate worksheet data to calculate and plot properties of electro-mechanical systems. • Plot DC ohm's law and power • Plot capacitor charge and discharge and inductor storage and release curves • Calculate properties for hydraulic and pneumatic systems • Perform unit conversion • Plot sinusoidal waveforms **Outcome #4:** Demonstrate an understanding of word processing and presentation creation software by being able to communicate technical data and create uncomplicated presentations. • Research technical data • Plot and analyze experimental data • Summarize and report results **Outcome #5:** Demonstrate the use of a database by being able to interact with data tables to enter, retrieve, manage and interpret data as information. • Activity storage • Archive classwork • trends and exception reporting **Outcome #6:** Demonstrate an understanding of networks by being able to identify basic operations of computer networks and apply networking concepts and standards. • Local-area networks/wide-area networks • Security • Industrial fieldbuses • Physical and logical topology
Suggested Texts & Materials (specify if any texts or materials are required)	• OER Text: Key Concepts of Computer Studies, Wang web: opentextbc.ca/computerstudies/
Department Notes (optional)	

SECTION #2 FUNCTION OF COURSE WITHIN EXISTING AND/OR NEW PROGRAM(S)	
New CTE courses must be attached to a degree and/or certificate. They cannot be offered until the degree or certificate is approved. Please answer below, as appropriate.	
Will this new course be part of existing, currently approved CGCC certificate(s) and/or degree(s)?	☒ Yes

		☐ No
Name of certificate(s):	Electro-Mechanical Technology	# credit: 42
Name of degree(s):	Electro-Mechanical Technology AAS	# credit: 98
Will this new course be part of a new, proposed CGCC certificate or degree?		☐ Yes ☒ No
Name of new certificate(s):		# credit:
Name of new degree(s):		# credit:
Briefly explain how this course fits into the new or existing degrees /certificates noted above (i.e. requirement or elective):	Requirement	
Is this course used to supply related instruction for a certificate?		☐ Yes ☒ No
If **yes,** the related instruction form, available on the curriculum office website, must be completed and submitted together with this form.		

SECTION #3 ADDITIONAL INFORMATION FOR NEW CTE COURSES	
Transferability: Will this course transfer to another academic institution? Identify and describe the nature of the transfer.	No.
IMPACT ON OTHER PROGRAMS AND DEPARTMENTS	
Are there degrees and/or certificates that are affected by the instruction of this course? If so, provide details.	N/A
Are there similar courses existing in other programs or disciplines at CGCC? If yes, provide details and/or describe the nature of acknowledgments and/or agreements that have been reached.	N/A
Is there any potential impact on another department? Identify and consult with Department chairs whose courses may be impacted by this course, such as: content overlap, course duplication, prerequisite need, enrollment increase or decrease, etc.	☐ Yes ☒ No
Explain and/or describe the nature of acknowledgments and/or agreements that have been reached.	N/A
Has the Library director been notified regarding the addition of this course and the need for any potential resources?	☒ Yes – date: as part of EM-Tech program in general ☐ No

Implementation term:	☒ Start of next academic year (summer term) ☐ Specific term (if BEFORE next academic year):
Course approval is dependent on approval of the related certificate/degree submission which documents the placement of the new course. Degree/certificate status will impact the speed of the process. The Curriculum Office will notify the submitter, department chair, and department director when the course has completed the approval process and is available to be scheduled. Curriculum changes generally go into effect at the beginning of the next academic year (summer term). Mid-year revisions/additions are discouraged but accommodated when possible if there is a specific, identifiable need.	

SECTION #4 DEPARTMENT REVIEW

"I vouch that this submission has been reviewed by the affiliated department chair and department dean and that they have given initial authorization for this submission. I am requesting that it be placed on the next Curriculum Committee agenda with available time slots. I understand that I am required to complete and submit, prior to the day my submission is reviewed by the Curriculum Committee, a Course Signature Form signed by the department chair and dean."

Submitter	Email	Date
Patrick Hawke	phawke@cgcc.edu	3/17/2022
Department Chair (enter name of department chair): Jim Pytel		
Department Dean (enter name of department dean): Kate Wurster		

NEXT STEPS:

1. Save this document as the course prefix and number (e.g. MTH 65 or HST 104). Send completed form electronically to curriculum@cgcc.edu or slewis@cgcc.edu.
2. Refer to the curriculum office website for the Curriculum Committee meeting schedule and submission deadlines. You are encouraged to send submissions prior to the deadline so that the curriculum office may review and provide feedback.
3. Course submissions will be placed on the next agenda with available time slots. You will be notified of your submission's time for review, and you will be sent a signature page that may be completed electronically or manually by your department chair and department dean. It is the submitter's responsibility to ensure that completed signature pages are delivered to the Curriculum Office the day before the Curriculum Committee meeting for which the submission is scheduled. Submissions without signed signature pages will be postponed.
4. It is not mandatory that you attend the Curriculum Committee meeting in which your submission is scheduled for review; however, it is strongly encouraged that you attend so that you may represent your submission and respond to any committee questions. Unanswered questions may result in a submission being rescheduled for further clarification.

CC date _____
CC decision _____
CC vote _____

Columbia Gorge Community College

Course Revision

(Double click on check boxes to activate dialog box)

What are you seeking to revise? Check all that apply		
☐ Course number	☐ Requisites	☐ Related Instruction
☐ Title	☒ Outcomes	☒ Content
☒ Description	☐ Repeatability	☒ Text / Materials

SECTION #1 GENERAL INFORMATION & REVISIONS			
Department	CTE – EM-Tech	Submitter name Phone Email	Kalie Brunton 541-256-6167 kbrunton@cgcc.edu
Current prefix and number	EET 221	Proposed prefix and number	No change
Current course title	Semiconductor Devices and Circuits 1	Proposed title (60 characters max)	No change
Current Repeatability	0	Proposed Repeatability	No change
Current transcript title (30 characters max)	Semiconductor Devices/Circuits 1	Proposed transcript title (30 characters max)	No change
Reason for above proposed changes	No changes		

COURSE DESCRIPTION: To be used in the catalog and schedule of classes. Begin each sentence of the course description with an active verb. Avoid using the phrases: "This course will …" and/or "Students will …" Include course requisites in the description. Guidelines for writing concise descriptions can be found at Writing Course Descriptions.

Current Description (required whether being revised or not)	Proposed Description
Examines the characteristics of semiconductor devices and biasing of diodes and transistors. Covers design and analysis of semiconductor circuits using diodes, bipolar transistors, field effect transistors, SCR's, MOSFET's, and IGBT's. Covers use of transistors as switches. Includes 3 hour lab that explores the application of semiconductor devices, configurations, and computer tools in circuit design, evaluation, and analysis. Prerequisite: EET 113. Audit available.	Examines the construction, theory of operation, and application of semiconductor devices including diodes (rectifier, zener, LED, photo), bipolar junction transistors (BJTs), metal oxide semiconductor field effect transistors (MOSFETs), and insulated gate bipolar transistors (IGBTs). Covers semiconductor circuit applications including rectification, amplification, and switching. Prerequisite: EET 113. Audit available.
Reason for description change	The proposed change is to clarify the emphasis of this course on essential semiconductor components and their modern applications - rectification, amplification, and switching.

REQUISITES: Note: If this course has been approved for the Gen Ed list, it will have, as a default the following requisites: "Prerequisite: MTH 20 or equivalent placement test scores. Prerequisite/concurrent: WR 121." If the department wants to set the RD, WR and/or MTH prerequisites at a lower level, you will need to submit the Opt-out of Standard Prerequisites Request form.			
Current prerequisites, corequisites and concurrent (if no change, leave blank)			
☐ Standard requisites - Prerequisite: MTH 20 or equivalent placement test scores. Prerequisite/concurrent: WR 121			
☐ Placement into:			
prefix & number:	☐ Prerequisite	☐ Corequisite	☐ pre/con
prefix & number:	☐ Prerequisite	☐ Corequisite	☐ pre/con
Proposed prerequisites, corequisites and concurrent			
☐ Standard requisites - Prerequisite: MTH 20 or equivalent placement test scores. Prerequisite/concurrent: WR 121			
☐ Placement into:			
prefix & number:	☐ Prerequisite	☐ Corequisite	☐ pre/con
prefix & number:	☐ Prerequisite	☐ Corequisite	☐ pre/con
Reason for requisite changes	No change		

LEARNING OUTCOMES: Describe what the student will be able to do "out there" (in their life roles as worker, family member, community citizen, global citizen or lifelong learners). Outcomes must be measurable through the application of direct and/or indirect assessment strategies. Three to six outcomes are recommended. Start each outcome with an active verb, completing the sentence starter provided. (See Writing Learning Outcomes on the curriculum website.) *****NOTE: Gen Ed Courses revising outcomes are required to submit a new Gen Ed Request form. A new Cultural Literacy Request form will also be required of any course with a Cultural Literacy designation.*****	
Current learning outcomes (required whether being revised or not)	New learning outcomes
Upon successful completion of this course, students will be able to: 1. Apply concepts of semiconductor devices, diodes and transistors, to design and analyze circuits. 2. Apply fundamentals of semiconductor devices in electronics projects and use computer tools in circuit design, evaluation, and analysis. 3. Write technical reports using collected experiment data. 4. Apply concepts of semiconductor devices to troubleshoot circuits. 5. Apply concepts of semiconductor devices in problem solving.	Upon successful completion of this course, students will be able to: 1. Identify various types of diodes and transistors, explain their theory of operation, and contrast their applications. 2. Apply electrical concepts to analyze circuits containing semiconductor components. 3. Build and troubleshoot circuits with diodes and transistors using instrumentation tools to observe circuit characteristics and computer software to model circuits. 4. Gather, plot, interpret, and communicate data from analysis and experiments.

Reason for outcomes change	The proposed change is to clarify the logical progression of content delivery - learn the component, analyze circuits containing the component, build circuits with the component, troubleshoot and interpret findings. The updated course content contains a list of essential semiconductor components that will be covered to meet intended outcome #1, a list of essential circuits and concepts which feature these components to meet intended outcome #2, a list of lab tools/circuits/software the students will complete projects on to meet intended outcome #3, and mentions that we will use data and graphs from experiments to meet outcome #4. • Revised Outcomes Assessment Strategies: In-class exercises, out-of-class projects

Course Content – organized by outcomes (list each outcome followed by an outline of the related content):	(required if revising outcomes)
	
	Outcome #1: Identify various types of diodes and transistors, explain their theory of operation, and contrast their applications.
	• p-type and n-type material
	  o doping
	  o PN junctions
	• rectifier diode
	  o diode curve
	  o biasing
	  o rectification
	• zener diode
	  o zener drop out
	  o voltage regulation
	• light emitting diode
	• photo diode
	• bipolar junction transistor (BJT)
	  o NPN versus PNP
	  o cutoff and saturation
	  o load line and Q point
	  o amplifying
	  o switching
	• metal oxide semiconductor field effect transistor (MOSFET)
	  o enhancement mode
	  o depletion mode
	• insulated gate bipolar transistor (IGBT)
	• datasheets
	
	Outcome #2: Apply electrical concepts to analyze circuits containing semiconductor components.
	• diode biasing circuits
	• half-wave rectifier
	• full-wave rectifier
	• single phase AC bridge rectifier
	• three phase AC half and full wave rectifiers
	• filtering/limiting/level-shifting circuits
	• clippers/clampers
	• voltage regulation circuits
	• transistor biasing circuits
	• transistor amplifiers

	• transistor switching circuits **Outcome #3:** Build and troubleshoot circuits with diodes and transistors using instrumentation tools to observe circuit characteristics and computer software to model circuits. • Instrumentation: oscilloscope, DMM, function generator, power supply • Circuits: diode biasing circuits, single and three phase rectifiers, filtering circuits, voltage regulation circuits, transistor biasing circuits, transistor amplifiers, transistor switching circuits • Software: Multisim **Outcome #4:** Gather, plot, interpret, and communicate data from analysis and experiments. • Record and plot data from lab findings, interpret • Use graphs to represent circuit solutions o load lines o operation point
Suggested Texts & Materials updates (specify if any texts or materials are required):	(update as needed) Suggested: Semiconductor Devices: Theory and Application by James M. Fiore
Department Required Course Activities (optional)	(update as needed) No change
Department Notes (optional)	(update as needed) No change

Is this course used for related instruction?	☐ Yes ☒ No
If yes, then check to see if the hours of student learning should be amended in the related instruction template to reflect the revision. This may require a related instruction curriculum revision.	

SECTION #2 IMPACT ON OTHER DEPARTMENTS	
Are there changes being requested that may impact other departments, such as academic programs that require this course as a prerequisite for courses, degrees, or certificates?	☐ Yes ☒ No
Please provide details, who was contacted and the resolution.	
Implementation term	☒ Start of next academic year after approval (summer term) ☐ Specify term (if other than next academic year):
Allow 2-6 months to complete the approval process before scheduling the course.	

SECTION #3 DEPARTMENT REVIEW		
"I vouch that this submission has been reviewed by the affiliated department chair and department dean and that they have given initial authorization for this submission. I am requesting that it be placed on the next Curriculum Committee agenda with available time slots. I understand that I am required to complete and submit, prior to the day my submission is reviewed by the Curriculum Committee, a Course Signature Form signed by the department chair and dean."		
Submitter	Email	Date
Kalie Brunton	kbrunton@cgcc.edu	3/3/2022
Department Chair (enter name of department chair): Jim Pytel		
Department Dean (enter name of department dean): Kate Wurster		

NEXT STEPS:

1. Save this document as the course prefix and number (e.g. MTH 65 or HST 104). Send completed form electronically to curriculum@cgcc.edu or slewis@cgcc.edu.
2. Refer to the curriculum office website for the Curriculum Committee meeting schedule and submission deadlines. You are encouraged to send submissions prior to the deadline so that the curriculum office may review and provide feedback.
3. Course submissions will be placed on the next agenda with available time slots. You will be notified of your submission's time for review, and you will be sent a signature page that may be completed electronically or manually by your department chair and department dean. It is the submitter's responsibility to ensure that completed signature pages are delivered to the Curriculum Office the day before the Curriculum Committee meeting for which the submission is scheduled. Submissions without signed signature pages will be postponed.
4. It is not mandatory that you attend the Curriculum Committee meeting in which your submission is scheduled for review; however, it is strongly encouraged that you attend so that you may represent your submission and respond to any committee questions. Unanswered questions may result in a submission being rescheduled for further clarification.

CC date _____
CC decision _____
CC vote _____

Columbia Gorge Community College

New Course
Career Technical Education (CTE)

(Double click on check boxes to activate dialog box)

SECTION #1 GENERAL INFORMATION			
Department:	CTE – EM-Tech	Submitter name: Phone: Email:	Kalie Brunton 541-256-6167 kbrunton@cgcc.edu
Prefix and Course Number:	EET 231	Credits:	5
Course Title: (60 characters max, including spaces)	Semiconductor Devices and Circuits 2	Transcript Title: (30 characters max, including spaces)	Semiconductor Devices/Circs 2
May this course be repeated for credit? ☐ Yes ☒ No	For how many times?	Contact hours:	Lecture: 40 Lec/lab: 0 Lab: 30
Is this course equivalent to another? They must have the same description, outcomes and credit.		☐ Yes ☒ No	Prefix, number and title:
Reason for the new course.	Comply with STEM committee guidance		

GRADE OPTIONS: Check as many or as few options as you'd like. **Choose the default grade option**. The default grade refers to the option that is listed at the top of the dropdown menu for the CRN. Students who do not make a choice or do not make a change in the dropdown menu will automatically be assigned to the default grade option.

	Check all that apply	Default (Choose one)
A-F (letter grade)	☒	☒
Pass/No pass	☒	☐
Audit in consultation with faculty	☒	☐

REQUISITES: Identify prerequisite, corequisite and concurrent course(s)

☐ Standard requisites – Prerequisite: MTH 20 or equivalent placement test scores.
Prerequisite/concurrent: WR 121.

☐ placement into:	☐ placement into:		
course prefix & number: EET 221	☒ prerequisite	☐ corequisite	☐ pre/co
course prefix & number:	☐ prerequisite	☐ corequisite	☐ pre/co
course prefix & number:	☐ prerequisite	☐ corequisite	☐ pre/co

COURSE DESCRIPTION: To be used in the catalog and schedule of classes. Begin each sentence of the course description with an active verb. Avoid using the phrases: "This course will …" and/or "Students will …" Include course requisites in the description. Guidelines for writing concise descriptions can be found at Writing Course Descriptions.

Explores modern applications of semiconductor devices with a focus on power electronics. Utilizes insulated gate bipolar transistors (IGBTs) to study the operation of buck and boost choppers, battery chargers, and pulse width modulated (PWM) inverters. Examines the construction and theory of operation of thyristors and their use in rectifiers, inverters, and motor drives. Prerequisites: EET 221. Audit available.

LEARNING OUTCOMES: Describe what the student will be able to do "out there" (in their life roles as worker, family member, community citizen, global citizen or lifelong learners). Outcomes must be measurable through the application of direct and/or indirect assessment strategies. Three to six outcomes are recommended. Start each outcome with an active verb, completing the sentence starter provided. (See Writing Learning Outcomes on the curriculum website.)

Outcomes: (Use observable and measurable verbs)	Upon successful completion of this course, students will be able to:
	1. Identify power electronic applications of semiconductor devices.
	2. Apply semiconductor principles to analyze the operation of DC to DC, AC to DC, and DC to AC converters.
	3. Apply semiconductor principles to analyze the use of IGBTs and thyristors in controlling DC and AC power.
	4. Build and troubleshoot circuits by interpreting schematic diagrams, using instrumentation tools and computer software to observe circuit characteristics.
Outcomes assessment strategies:	In class worksheets, quizzes, exams, and lab practical.

COURSE CONTENT, ACTIVITIES AND DESIGN

Activity & Design: The determination of teaching strategies used in the delivery of outcomes is generally left to the discretion of the instructor. On occasion, a department may decide that the inclusion of a particular strategy will be required (specify in "required activities" box below). For example, a department may determine that a course will be required to incorporate a service learning project into its curriculum delivery. However, for the most part, delivery mechanisms fall under academic freedom and so the individuality and creativity of each instructor.

Here are some strategies that you might consider when designing your course: lecture, small group/forum discussion, flipped classroom, dyads, oral presentation, role play, simulation scenarios, group projects, service learning projects, hands-on lab, peer review/workshops, cooperative learning (jigsaw, fishbowl), inquiry based instruction, differentiated instruction (learning centers), graphic organizers, etc.

Department required course activities (optional)	
Course Content – organized by outcomes (list each outcome followed by an outline of the related content)	**Outcome #1:** Identify power electronics applications of semiconductor devices. • converting (DC to DC) • rectifying (AC to DC) • inverting (DC to AC) • controlling **Outcome #2:** Apply semiconductor principles to analyze the operation of DC to DC, AC to DC, and DC to AC converters. • converting (DC to DC) o buck chopper (IGBT) o boost chopper (IGBT)

	o buck/boost chopper (IGBT) o four-quadrant chopper (IGBT) • rectifying (AC to DC) o three phase AC thyristor rectifier • inverting (DC to AC) o three phase AC thyristor inverter o single phase pulse width modulated inverter (IGBT) o three phase pulse width modulated inverter (IGBT) **Outcome #3:** Apply semiconductor principles to analyze the use of IGBTs and thyristors in controlling DC and AC power. • control of thyristors o phase angle modulation o burst firing • thyristor control of single phase AC • thyristor control of three phase AC o 4S, 6D, 3S, 3D • battery charger (IGBT) • solid state relay (SSR) o zero voltage switching • motor drives (SCR) **Outcome #4:** Gather, plot, interpret, and communicate data from analysis and experiments. • Instrumentation and equipment: oscilloscope, DMM, function generator, power supply, LVDAC-EMS trainer • Circuits: chopper, rectifier, inverter, battery charger, thyristor control • Software: LVDAC-EMS
Suggested Texts & Materials (specify if any texts or materials are required)	Semiconductor Devices: Theory and Application by James M. Fiore
Department Notes (optional)	

SECTION #2 FUNCTION OF COURSE WITHIN EXISTING AND/OR NEW PROGRAM(S)		
New CTE courses must be attached to a degree and/or certificate. They cannot be offered until the degree or certificate is approved. Please answer below, as appropriate.		
Will this new course be part of existing, currently approved CGCC certificate(s) and/or degree(s)?		☒ Yes ☐ No
Name of certificate(s):		# credit:
Name of degree(s):	Electro-Mechanical Technology AAS	# credit: 99
Will this new course be part of a new, proposed CGCC certificate or degree?		☐ Yes ☒ No
Name of new certificate(s):		# credit:
Name of new degree(s):		# credit:

Briefly explain how this course fits into the new or existing degrees /certificates noted above (i.e. requirement or elective):	Requirement
Is this course used to supply related instruction for a certificate?	☐ Yes ☒ No
If **yes,** the related instruction form, available on the curriculum office website, must be completed and submitted together with this form.	

SECTION #3 ADDITIONAL INFORMATION FOR NEW CTE COURSES	
Transferability: Will this course transfer to another academic institution? Identify and describe the nature of the transfer.	No.
IMPACT ON OTHER PROGRAMS AND DEPARTMENTS	
Are there degrees and/or certificates that are affected by the instruction of this course? If so, provide details.	N/A
Are there similar courses existing in other programs or disciplines at CGCC? If yes, provide details and/or describe the nature of acknowledgments and/or agreements that have been reached.	N/A
Is there any potential impact on another department? Identify and consult with Department chairs whose courses may be impacted by this course, such as: content overlap, course duplication, prerequisite need, enrollment increase or decrease, etc.	☐ Yes ☒ No
Explain and/or describe the nature of acknowledgments and/or agreements that have been reached.	N/A
Has the Library director been notified regarding the addition of this course and the need for any potential resources?	☒ Yes – date: as part of EM-Tech program in general ☐ No
Implementation term:	☒ Start of next academic year (summer term) ☐ Specific term (if BEFORE next academic year):

Course approval is dependent on approval of the related certificate/degree submission which documents the placement of the new course. Degree/certificate status will impact the speed of the process. The Curriculum Office will notify the submitter, department chair, and department director when the course has completed the approval process and is available to be scheduled. Curriculum changes generally go into effect at the beginning of the next academic year (summer term). Mid-year revisions/additions are discouraged but accommodated when possible if there is a specific, identifiable need.

SECTION #4 DEPARTMENT REVIEW

"I vouch that this submission has been reviewed by the affiliated department chair and department dean and that they have given initial authorization for this submission. I am requesting that it be placed on the next Curriculum Committee agenda with available time slots. I understand that I am required to complete and submit, prior to the day my submission is reviewed by the Curriculum Committee, a Course Signature Form signed by the department chair and dean."

Submitter	Email	Date
Kalie Brunton	kbrunton@cgcc.edu	3/3/2022
Department Chair (enter name of department chair): Jim Pytel		
Department Dean (enter name of department dean): Kate Wurster		

NEXT STEPS:

1. Save this document as the course prefix and number (e.g. MTH 65 or HST 104). Send completed form electronically to curriculum@cgcc.edu or slewis@cgcc.edu.
2. Refer to the curriculum office website for the Curriculum Committee meeting schedule and submission deadlines. You are encouraged to send submissions prior to the deadline so that the curriculum office may review and provide feedback.
3. Course submissions will be placed on the next agenda with available time slots. You will be notified of your submission's time for review, and you will be sent a signature page that may be completed electronically or manually by your department chair and department dean. It is the submitter's responsibility to ensure that completed signature pages are delivered to the Curriculum Office the day before the Curriculum Committee meeting for which the submission is scheduled. Submissions without signed signature pages will be postponed.
4. It is not mandatory that you attend the Curriculum Committee meeting in which your submission is scheduled for review; however, it is strongly encouraged that you attend so that you may represent your submission and respond to any committee questions. Unanswered questions may result in a submission being rescheduled for further clarification.

Columbia Gorge Community College

Contact Hours / Credit Change

(Double click on check boxes to activate dialog box)

SECTION #1 GENERAL INFORMATION			
Department	CTE – EM-Tech	Submitter name: Phone: Email:	Jim Pytel jpytel@cgcc.edu
Course prefix and number	SAF 188	Course title	Industrial Safety and OSHA 10

Contact and Credit Hours
- 1 credit of lecture meets 1 hr /wk, plus 2 hrs/wk of study for 10 weeks = 30 hr
- 1 credit of lec-lab meets 2 hr/wk, plus 1 hr of study, for 10 weeks = 30 hr
- 1 credit of lab or cooperative ed meets 3 hrs/wk, with minimal outside study, for 10 wks = 30 hr

Current Contact And Credit Hours		Proposed Contact And Credit Hours	
Lecture	2	Lecture	1
Lab		Lab	
Lecture/Lab		Lecture/Lab	
Total weekly contact hours	2	Total weekly contact hours	1
Total credits	2	Total credits	1
Reason for change:	To accurately reflect the number of hours required to teach the content of the course provided by the OSHA trainers.		

LEARNING OUTCOMES: Are learning outcomes affected by this change. If you are adding or removing credits, then it is expected there will be a change in the outcomes.

☒ Yes ☐ No	If yes, then revise the course learning outcomes by completing a course revision form found on the curriculum website.

IMPACT ON DEGREE AND CERTIFICATES: Are there degrees or certificates affected by this change?

☒ Yes ☐ No	If yes, complete a degree/certificate change form located on the curriculum website.

IMPACT ON OTHER DEPARTMENTS: Are there changes that will impact other departments? Are there degrees or certificates that require this course as part of their program or as a prerequisite?

☐ Yes ☒ No	If yes, please explain and describe how the impact was resolved	

Have you consulted with department chairs from other disciplines regarding potential course duplication, impact on enrollment or content overlap?		
☐ Yes ☒ No	If yes, please describe	
Implementation term		☒ Next academic year (summer term) ☐ Specific term (if before next academic year:

SECTION #2 DEPARTMENT REVIEW		
"I vouch that this submission has been reviewed by the affiliated department chair and department dean and that they have given initial authorization for this submission. I am requesting that it be placed on the next Curriculum Committee agenda with available time slots. I understand that I am required to complete and submit, prior to the day my submission is reviewed by the Curriculum Committee, a Course Signature Form signed by the department chair and dean."		
Submitter	Email	Date
Jim Pytel	jpytel@cgcc.edu	3.3.22
Department Chair (enter name of department chair): Jim Pytel		
Department Dean (enter name of department dean): Kate Wurster		

NEXT STEPS:

1. Save this document as ContHrChg.course prefix and course number (e.g. ContHrChg.HST 204). Send completed form electronically to curriculum@cgcc.edu or slewis@cgcc.edu.
2. Refer to the curriculum office website for the Curriculum Committee meeting schedule and submission deadlines. You are encouraged to send submissions prior to the deadline so that the curriculum office may review and provide feedback.
3. Course submissions will be placed on the next agenda with available time slots. You will be notified of your submission's time for review, and you will be sent a signature page that may be completed electronically or manually by your department chair and department director. It is the submitter's responsibility to ensure that completed signature pages are delivered to the Curriculum Office the day before the Curriculum Committee meeting for which the submission is scheduled. Submissions without signed signature pages will be postponed.
4. It is not mandatory that you attend the Curriculum Committee meeting in which your submission is scheduled for review; however, it is strongly encouraged that you attend so that you may represent your submission and respond to any committee questions. Unanswered questions may result in a submission being rescheduled for further clarification.

CC date _____
CC decision _____
CC vote _____

Columbia Gorge Community College

Course Revision

(Double click on check boxes to activate dialog box)

What are you seeking to revise? Check all that apply		
☐ Course number	☐ Requisites	☐ Related Instruction
☐ Title	☒ Outcomes	☒ Content
☒ Description	☐ Repeatability	☒ Text / Materials

SECTION #1 GENERAL INFORMATION & REVISIONS			
Department	CTE – EM-Tech	Submitter name Phone Email	Jim Pytel jpytel@cgcc.edu
Current prefix and number	SAF 188	Proposed prefix and number	No change
Current course title	Industrial Safety and OSHA 10	Proposed title (60 characters max)	No change
Current Repeatability	0	Proposed Repeatability	No change
Current transcript title (30 characters max)	Industrial Safety and OSHA 10	Proposed transcript title (30 characters max)	No change
Reason for above proposed changes	No changes		

COURSE DESCRIPTION: To be used in the catalog and schedule of classes. Begin each sentence of the course description with an active verb. Avoid using the phrases: "This course will …" and/or "Students will …" Include course requisites in the description. Guidelines for writing concise descriptions can be found at Writing Course Descriptions.

Current Description (required whether being revised or not)	Proposed Description
Introduces safety practices in the electronics industry and covers industry OSHA-10 Construction Safety Training. Includes handling hazardous materials; safe use of flammable and combustible liquids; types of Personal Protective Equipment; fall protection; crane, ladder and scaffolding safety; safe use of hand and power tools. An OSHA 10 card will be earned through the satisfactory, in-class completion of OSHA 10 construction safety and health requirements.	Introduces industrial safety practices and covers industry OSHA-10 Construction Safety Training. Includes handling hazardous materials; safe use of flammable and combustible liquids; types of personal protective equipment (PPE); fall protection; crane, ladder and scaffolding safety; safe use of hand and power tools. An OSHA 10 card will be earned through the satisfactory, in-class completion of OSHA 10 construction safety and health requirements.
Reason for description change	Update to match new outcomes and credits.

REQUISITES: Note: If this course has been approved for the Gen Ed list, it will have, as a default the following requisites: "Prerequisite: MTH 20 or equivalent placement test scores. Prerequisite/concurrent: WR 121." If the department wants to set the RD, WR and/or MTH prerequisites at a lower level, you will need to submit the Opt-out of Standard Prerequisites Request form.			
Current prerequisites, corequisites and concurrent (if no change, leave blank)			
☐ Standard requisites - Prerequisite: MTH 20 or equivalent placement test scores. Prerequisite/concurrent: WR 121			
☐ Placement into:			
prefix & number:	☐ Prerequisite	☐ Corequisite	☐ pre/con
prefix & number:	☐ Prerequisite	☐ Corequisite	☐ pre/con
Proposed prerequisites, corequisites and concurrent			
☐ Standard requisites - Prerequisite: MTH 20 or equivalent placement test scores. Prerequisite/concurrent: WR 121			
☐ Placement into:			
prefix & number:	☐ Prerequisite	☐ Corequisite	☐ pre/con
prefix & number:	☐ Prerequisite	☐ Corequisite	☐ pre/con
Reason for requisite changes	No change		

LEARNING OUTCOMES: Describe what the student will be able to do "out there" (in their life roles as worker, family member, community citizen, global citizen or lifelong learners). Outcomes must be measurable through the application of direct and/or indirect assessment strategies. Three to six outcomes are recommended. Start each outcome with an active verb, completing the sentence starter provided. (See Writing Learning Outcomes on the curriculum website.) *****NOTE: Gen Ed Courses revising outcomes are required to submit a new Gen Ed Request form. A new Cultural Literacy Request form will also be required of any course with a Cultural Literacy designation.*****	
Current learning outcomes (required whether being revised or not)	New learning outcomes
Upon successful completion of this course, students will be able to: 1. Recognize hazardous situations on the job. 2. Apply the 29 CFR 1926 OSHA construction industry safety regulations in an industrial environment. 3. Understand the OSHA 1910 and 1926 construction industry regulations. 4. Understand worker safety rights.	Upon successful completion of this course, students will be able to: 1. Recognize hazardous situations on the job. 2. Understand and apply the OSHA 1910 and 1926 construction industry safety regulations. 3. Understand worker safety rights.
Reason for outcomes change	OSHA 10 is a 10-hour course. Does not necessitate 20 contact hours.

Course Content – organized by outcomes (list each outcome followed by an outline of the related content):	**Outcome #1:** Recognize hazardous situations on the job. • Slips, trips, and falls • Electrocution • Struck-by • Caught in/between • Hazardous materials • Machine guarding • Bloodborne pathogens • Ergonomics **Outcome #2:** Understand and apply the OSHA 1910 and 1926 construction industry safety regulations. • Cranes, derricks, hoists, elevators, and conveyors • Excavations • Handling, storage, usage, and disposal of materials • Scaffolds • Hand and power tools **Outcome #3:** Understand worker safety rights. • Rights of workers • Responsibilities of employers • How to file a complaint
Suggested Texts & Materials updates (specify if any texts or materials are required):	• Training material provided • osha.gov website
Department Required Course Activities (optional)	(update as needed)
Department Notes (optional)	(update as needed)

Is this course used for related instruction?	☐ Yes ☒ No
If yes, then check to see if the hours of student learning should be amended in the related instruction template to reflect the revision. This may require a related instruction curriculum revision.	

SECTION #2 IMPACT ON OTHER DEPARTMENTS	
Are there changes being requested that may impact other departments, such as academic programs that require this course as a prerequisite for courses, degrees, or certificates?	☐ Yes ☒ No
Please provide details, who was contacted and the resolution.	
Implementation term	☒ Next academic year after approval (summer term) ☐ Specify term (if BEFORE the next academic year):
Allow 2-6 months to complete the approval process before scheduling the course.	

SECTION #3 DEPARTMENT REVIEW		
"I vouch that this submission has been reviewed by the affiliated department chair and department dean and that they have given initial authorization for this submission. I am requesting that it be placed on the next Curriculum Committee agenda with available time slots. I understand that I am required to complete and submit, prior to the day my submission is reviewed by the Curriculum Committee, a Course Signature Form signed by the department chair and dean."		
Submitter	Email	Date
Jim Pytel	jpytel@cgcc.edu	03.03.22
Department Chair (enter name of department chair): Jim Pytel		
Department Dean (enter name of department dean): Kate Wurster		

NEXT STEPS:

1. Save this document as the course prefix and number (e.g. MTH 65 or HST 104). Send completed form electronically to curriculum@cgcc.edu or slewis@cgcc.edu.
2. Refer to the curriculum office website for the Curriculum Committee meeting schedule and submission deadlines. You are encouraged to send submissions prior to the deadline so that the curriculum office may review and provide feedback.
3. Course submissions will be placed on the next agenda with available time slots. You will be notified of your submission's time for review, and you will be sent a signature page that may be completed electronically or manually by your department chair and department dean. It is the submitter's responsibility to ensure that completed signature pages are delivered to the Curriculum Office the day before the Curriculum Committee meeting for which the submission is scheduled. Submissions without signed signature pages will be postponed.
4. It is not mandatory that you attend the Curriculum Committee meeting in which your submission is scheduled for review; however, it is strongly encouraged that you attend so that you may represent your submission and respond to any committee questions. Unanswered questions may result in a submission being rescheduled for further clarification.

CC date	_____
CC decision	_____
CC vote	_____

Columbia Gorge Community College

CERTIFICATE REVISION

Submitted by: Jim Pytel	Email: jpytel@cgcc.edu	Phone:	Department: CTE – EM-Tech

(Double click on check boxes to activate dialog box)

SECTION #1 OVERVIEW			
Current Title:	Electro-Mechanical Technology	Proposed Title:	N/A
Current Credits:	43	Proposed Credits:	42
Overview and rationale for proposed changes:	To update to current industry standards.		
List of specific changes being proposed which may include, addition or deletion of courses, title changes, credit changes, prerequisite changes, outcome changes, course changes etc. Use consistent words – Add, Remove, Increase, Decrease, Change	1. Change credits for SAF 188 from 2 to 1 2. REMOVE EET 170 3. ADD EET 180 4. Change overall credit load from 43 to 42 5.		
Is this a Related Certificate?	☐ Yes ☒ No	Is this a Career Pathway?	☒ Yes ☐ No
If yes, what is the base degree?	Electro-Mechanical Technology AAS		
Will the proposed changes affect the base degree or certificate?			☒ Yes ☐ No
If yes, how?	Certificate is first year of base degree; therefore, the same curriculum changes will exist in the degree.		
Is this a statewide certificate?	☐ Yes ☒ No	If yes, have the changes been approved by the consortium?	☐ Yes ☐ No

Does the revision impact other areas of instruction?	☐ Yes ☒ No	Explanation of issues and how they are being resolved:	Has the revision been validated by the Advisory Committee?	☒ Yes ☐ No
If yes, have you talked with impacted departments and resolved any and all possible issues?	☐ Yes ☐ No		Date of Advisory Committee meeting:	Oct 21 and survey
Requested Implementation Term	Summer, 2022			

SECTION #2 REVISION AREAS			
Does the revision involve changing certificate requisites?			☐ Yes ☒ No
Note that degree/certificate/program entry prerequisites are only enforceable in limited entry programs. Program prerequisites for open entry programs only have meaning when they are representative of prerequisites associated to specific courses within the program. Prerequisites that students are not able to test out of using Next Gen Accuplacer result in hidden degree/certificate requirements and should be avoided. (Courses that may be tested out of using Next Gen Accuplacer include: RD 90, RD 115, WR 90, WR 115, MTH 20, MTH 60, MTH 65, MTH 95, MTH 98, MTH 105, MTH 111, MTH 112.)			
CURRENT PREREQUISITES **(Required whether or not prerequisites are being changed.)**			
Course Number	Course Title or Placement level	Requisites (if any)	Credits
MTH 65 completed with a "B" or higher	Beginning Algebra II	MTH 60 or equivalent placement test scores	4
RD 115	Critical Reading	Placement into RD 115	4
WR 115	Introduction to Expository Writing	Placement into WR 115 or completion of WR 90 and placement into RD 115 or completion of RD 90	4
PROPOSED PREREQUISITES **(No change, leave blank.)**			
Course Number	Course Title or Placement level	Requisites (if any)	Credits
	No change		

CERTIFICATE OUTCOMES All certificate outcomes will be reviewed by the committee regardless of whether or not outcomes have changed.	
Describe what the student will be able to do "out there" (in their life roles as worker, family member, community citizen, global citizen or lifelong learners). Outcomes must be measurable through the application of direct and/or indirect assessment strategies. Three to six outcomes are recommended. Start each outcome with an active verb, completing the sentence starter provided. (See Writing Learning Outcomes on the curriculum website.)	
Does the revision involve changing certificate outcomes?	☐ Yes ☒ No
CURRENT CERTIFICATE OUTCOMES (Required whether or not outcomes are being changed.)	
Students who complete this certificate will be able to:	
1. Qualify for employment in the electro-mechanical field as entry-level operators.	
2. Assist technicians with the repair, servicing, and manufacturing of electro-mechanical systems by applying basic knowledge of mathematic, electrical, electronic, mechanical, and hydraulic/ pneumatic concepts.	
3. Communicate effectively both at the individual level and within team settings.	
4. Qualify for employment in the high-tech field as electronics technicians.	
PROPOSED CERTIFICATE OUTCOMES	
Students who complete this certificate will be able to:	
No change	
RELATED INSTRUCTION	
Does the revision involve changing or adding Related Instruction?	☐ Yes ☒ No
If yes, complete the Related Instruction Template which may be found on the curriculum website.	
Additional Comments Or Changes	

SECTION #3 COURSE BY COURSE COMPARISON
List all courses (current AND proposed) in the term by term order that is to be displayed in the catalog certificate map. List course requisites under Course Title. Include elective list below. If you are adding a course, place it in the preferred term, identify such a course with (add) and bold the text in the line. If you want to rearrange the order of courses within the term-by-term sequence, do so on this form. If you are removing a course, identify the course with (remove) and bold the text. If the course title is changed, identify the course with (title change) and bold the text.

If the course credits have changed, identify the course with (increase or decrease credit) and bold the text.
If you need more lines to accommodate the courses, right click and insert rows.

The information you provide on this form will be reflected in the CGCC catalog pages. Please ensure it is correct.

Current Certificate Information			Proposed Certificate Information		
Course Number	**Course Title / Requisites**	**Credits**	**Course Number**	**Course Title / Requisites**	**Credits**
FALL TERM (16 credits)			FALL TERM (15 credits)		
EET 111	DC Circuits	5	EET 111	DC Circuits	5
MEC 123	Industrial Mechanical Systems	5	MEC 123	Industrial Mechanical Systems	5
SAF 188	**Industrial Safety and OSHA 10 (DECREASE CREDITS)**	**2**	**SAF 188**	**Industrial Safety and OSHA 10 (DECREASE CREDITS)**	**1**
WR 121	English Composition	4	WR 121	English Composition	4
WINTER TERM (14 credits)			WINTER TERM (14 credits)		
EET 112	AC Circuits	5	EET 112	AC Circuits	5
EET 170	**Embedded Computing (REMOVE)**	**3**	**EET 180**	**Industrial Computing (ADD)**	**3**
MEC 120	Fluid Power & Electrical Control of Fluid Power Systems	5	MEC 120	Fluid Power & Electrical Control of Fluid Power Systems	5
CG 209	Job Finding Skills	1	CG 209	Job Finding Skills	1
SPRING TERM (13 credits)			SPRING TERM (13 credits)		
EET 113	AC Power	5	EET 113	AC Power	5
EET 141	Motor Control	5	EET 141	Motor Control	5
MEC 124	Mechatronic Systems in Advanced Manufacturing	3	MEC 124	Mechatronic Systems in Advanced Manufacturing	3
	Credit total	**43**		**Credit total**	**42**

ELECTIVE LIST

Include all electives. Identify elective changes by stating if the elective is to be added or deleted and bold the text.
If you need more lines to accommodate the courses, right click and insert rows.

Current Electives			Proposed Electives		
Course Number	**Course Title / Requisites**	**Credits**	**Course Number**	**Course Title / Requisites**	**Credits**
	none				

SECTION #4 DEPARTMENT REVIEW		
"I vouch that this submission has been reviewed by the affiliated department chair and department dean and that they have given initial authorization for this submission. I am requesting that it be placed on the next Curriculum Committee agenda with available time slots. I understand that I am required to complete and submit, prior to the day my submission is reviewed by the Curriculum Committee, a Degree or Certificate Signature Form signed by the department chair and dean."		
Submitter	Email	Date
Jim Pytel	jpytel@cgcc.edu	3.3.22
Department Chair (enter name of department chair):		
Department Dean (enter name of department dean):		

Next steps:

1. Save the completed Certificate Revision Request Form and submit as an e-mail attachment to curriculum@cgcc.edu or slewis@cgcc.edu.
2. If needed, attach the completed Related Instruction Template to the same e-mail.
3. Refer to the curriculum office website for the Curriculum Committee meeting schedule and submission deadlines. You are encouraged to send submissions prior to the deadline so that the Curriculum Office may review and provide feedback.
4. Submissions will be placed on the next agenda with available time slots. You will be notified of your submission's time for review, and you will be sent a signature page that may be completed electronically or manually by your department chair and department dean. It is the submitter's responsibility to ensure that completed signature pages are delivered to the Curriculum Office the day before the Curriculum Committee meeting for which the submission is scheduled. Submissions without signed signature pages will be postponed.
5. It is required for a representative to attend the Curriculum Committee meeting in which your submission is scheduled for review. The representative will be asked to describe the proposal and respond to any committee questions. Unanswered questions may result in a submission being rescheduled for further clarification.

CC date	_____
CC decision	_____
CC vote	_____

Columbia Gorge Community College

REVISION of AAS DEGREE REQUEST

Submitted by: Jim Pytel	Email: jpytel@cgcc.edu	Phone:	Department: CTE – EM-Tech

(Double click on check boxes to activate dialog box)

SECTION #1 OVERVIEW			
Current Title:	Electro-Mechanical Technology	Proposed Title:	N/A
Current Credits:	99	Proposed Credits:	98
Overview and rationale for proposed changes:	To update degree to current industry standards.		
List of specific changes being proposed which may include, addition or deletion of courses, title changes, credit changes, prerequisite changes, outcome changes, course changes etc. Use consistent words – Add, Remove, Increase, Decrease, Change	1. Reduce credits for SAF 188 from 2 to 1 2. Remove EET 222, EET 170 3. Add EET 231, EET 180 4. Change overall credit load from 99 to 98		
Is this a statewide degree?	☐ Yes ☒ No	If so, have the changes been approved by the consortium?	☐ Yes ☐ No

Are there any career pathway(s) or related certificates attached to this degree?	☒ Yes ☐ No	If yes, list title of career pathway(s) or related certificate(s)	Electro-Mechanical Technology

Does the revision impact other areas of instruction?	☐ Yes ☒ No	Explanation of issues and how they are being resolved:	Has the revision been validated by the Advisory Committee?	☒ Yes ☐ No

If yes, have you talked with impacted departments and resolved any and all possible issues?	☐ Yes ☐ No		Date of Advisory Committee meeting:	Oct 21 and survey
Requested Implementation Term	Summer, 2022			

SECTION #2 REVISION AREAS			
Does the revision involve changing degree prerequisites?			☐ Yes ☒ No
Note that degree/certificate/program entry prerequisites are only enforceable in limited entry programs. Program prerequisites for open entry programs only have meaning when they are representative of prerequisites associated to specific courses within the program. Prerequisites that students are not able to test out of using Next Gen Accuplacer result in hidden degree/certificate requirements and should be avoided. (Courses that may be tested out of using Next Gen Accuplacer include: RD 90, RD 115, WR 90, WR 115, MTH 20, MTH 60, MTH 65, MTH 95, MTH 98, MTH 105, MTH 111, MTH 112.)			
CURRENT PREREQUISITES **(Required whether or not prerequisites are being changed.)**			
Course Number	Course Title or Placement level	Requisites	Credits
MTH 65 completed with a "B" or higher	Beginning Algebra II	MTH 60 or equivalent placement test scores	4
RD 115	Critical Reading	Placement into RD 115	4
WR 115	Introduction to Expository Writing	Placement into WR 115 or completion of WR 90 and placement into RD 115 or completion of RD 90	4
PROPOSED PREREQUISITES **(No change, leave blank.)**			
Course Number	Course Title or Placement level	Requisites	Credits
	No change		
DEGREE OUTCOMES All degree outcomes will be reviewed by the committee regardless of whether or not outcomes have changed.			
Describe what the student will be able to do "out there" (in their life roles as worker, family member, community citizen, global citizen or lifelong learners). Outcomes must be measurable through the application of direct and/or indirect assessment strategies. Three to six outcomes are recommended. Start each outcome with an active verb, completing the sentence starter provided. (See Writing Learning Outcomes on the curriculum website.)			

Does the revision involve changing degree outcomes?	☐ Yes ☒ No

CURRENT DEGREE OUTCOMES
(Required whether or not outcomes are being changed.)

Students who successfully complete this degree will be able to:

1. Qualify for employment in the electro-mechanical field as technicians.
2. Service/repair electro-mechanical systems and assist engineers with the design of electromechanical systems by applying knowledge of electrical, electronics, mechanical, control systems and hydraulic/pneumatic concepts.
3. Apply basic operations management practices and principles in an advanced manufacturing environment.
4. Control computer-driven devices through programming in the C language.

PROPOSED DEGREE OUTCOMES

Students who successfully complete this degree will be able to:

1. No change

SECTION #3 COURSE BY COURSE COMPARISON

List all courses (current AND proposed) in the term by term order that is to be displayed in the catalog certificate map. List course requisites under Course Title. Include elective list below.

If you are adding a course, place it in the preferred term, identify such a course with (add) and bold the text in the line.
If you want to rearrange the order of courses within the term-by-term sequence, do so on this form.
If you are removing a course, identify the course with (remove) and bold the text.
If the course title is changed, identify the course with (title change) and bold the text.
If the course credits have changed, identify the course with (increase or decrease credit) and bold the text.
If you need more lines to accommodate the courses, right click and insert rows.

The information you provide on this form will be reflected in the CGCC catalog pages. Please ensure it is correct.

Current Degree Information			Proposed Degree Information		
Course Number	**Course Title & Requisites**	**Credits**	**Course Number**	**Course Title & Requisites**	**Credits**
FALL TERM (16 credits)			FALL TERM (15 credits)		
EET 111	DC Circuits	5	EET 111	DC Circuits	5

MEC 123	Industrial Mechanical Systems	5	MEC 123	Industrial Mechanical Systems	5
SAF 188	**Industrial Safety and OSHA 10 (DECREASE CREDITS)**	**2**	**SAF 188**	**Industrial Safety and OSHA 10 (DECREASE CREDITS)**	**1**
MTH 110	Technical Math (or higher)	4	MTH 110	Technical Math (or higher)	4
WINTER TERM (18 credits)			WINTER TERM (18 credits)		
EET 112	AC Circuits	5	EET 112	AC Circuits	5
EET 170	**Embedded Computing (REMOVE)**	**3**	**EET 180**	**Industrial Computing (ADD)**	**3**
MEC 120	Fluid Power & Electrical Control of Fluid Power Systems	5	MEC 120	Fluid Power & Electrical Control of Fluid Power Systems	5
CG 209	Job Finding Skills	1	CG 209	Job Finding Skills	1
WR 121	English Composition	4	WR 121	English Composition	4
SPRING TERM (17 credits)			SPRING TERM (17 credits)		
EET 113	AC Power	5	EET 113	AC Power	5
EET 141	Motor Control	5	EET 141	Motor Control	5
MEC 124	Mechatronic Systems in Advanced Manufacturing	3	MEC 124	Mechatronic Systems in Advanced Manufacturing	3
	General Education Elective	4		General Education Elective	4
FALL TERM (19 credits)			FALL TERM (19 credits)		
EET 251	Digital Electronics 1: Programmable Logic Devices	5	EET 251	Digital Electronics 1: Programmable Logic Devices	5
EET 221	Semiconductor Devices and Circuits	5	EET 221	Semiconductor Devices and Circuits	5
RET 223	Power Generation	5	RET 223	Power Generation	5
	General Education Elective	4		General Education Elective	4
WINTER TERM (17 credits)			WINTER TERM (17 credits)		
EET 219	Programmable Logic Controllers	3	EET 219	Programmable Logic Controllers	3
EET 222	**Operational Amplifier Circuits (REMOVE)**	**5**	**EET 231**	**Semiconductor Devices and Circuits 2 (ADD)**	**5**
EET 252	Digital Electronics 2: Programmable Logic Devices	5	EET 252	Digital Electronics 2: Programmable Logic Devices	5
	General Education Elective	4		General Education Elective	4

SPRING TERM (12 credits)			SPRING TERM (12 credits)		
EET 242	Microcontroller Systems	5	EET 242	Microcontroller Systems	5
EET 273	Electronic Control Systems	3	EET 273	Electronic Control Systems	3
	General Education Elective	4		General Education Elective	4
	Credit Total	**99**		**Credit Total**	**98**

ELECTIVE LIST

Include all electives. Identify elective changes by stating if the elective is to be added or deleted and bold the text.
If you need more lines to accommodate the courses, right click and insert rows.

Current Electives			**Proposed Electives**		
Course Number	**Course Title & Requisites**	**Credits**	**Course Number**	**Course Title & Requisites**	**Credits**
	none				

SECTION #4 DEPARTMENT REVIEW

"I vouch that this submission has been reviewed by the affiliated department chair and department dean and that they have given initial authorization for this submission. I am requesting that it be placed on the next Curriculum Committee agenda with available time slots. I understand that I am required to complete and submit, prior to the day my submission is reviewed by the Curriculum Committee, a Degree or Certificate Signature Form signed by the department chair and dean."

Submitter	Email	Date
Jim Pytel	jpytel@cgcc.edu	3.3.22
Department Chair (enter name of department chair): Jim Pytel		
Department Dean (enter name of department dean): Kate Wurster		

Next steps:

1. Save the completed Degree Revision Request Form and submit as an e-mail attachment to curriculum@cgcc.edu or slewis@cgcc.edu.
2. Refer to the curriculum office website for the Curriculum Committee meeting schedule and submission deadlines. You are encouraged to send submissions prior to the deadline so that the Curriculum Office may review and provide feedback.
3. Submissions will be placed on the next agenda with available time slots. You will be notified of your submission's time for review, and you will be sent a signature page that may be completed electronically or manually by your department chair and department dean. It is the submitter's responsibility to ensure that completed

CC date _____
CC decision _____
CC vote _____

Columbia Gorge Community College

New Course
Lower Division Collegiate (LDC)

(Double click on check boxes to activate dialog box)

SECTION #1 GENERAL INFORMATION

Department:	Mathematics	Submitter name: phone: email:	Pam Morse/Abel Wolman pmorse@cgcc.edu awolman@cgcc.edu
Prefix and Course Number:	MTH 105L	Credits:	1
Course Title: (60 characters max, including spaces)	Foundations of Math in Society	Transcript Title: (30 characters max, including spaces)	Foundations of Math in Society
May this course be repeated for credit? ☐ Yes ☒ No	For how many times total?	Contact hours	Lecture: 0 Lec/lab: 0 Lab: 33
Reason for the new course	co-requisite support for math pathways		

GRADE OPTIONS: Check as many or as few options as you'd like. **Choose the default grade option** which will automatically be assigned for students who do not make a grade option choice when registering for classes.

	Check all that apply	Default (Choose one)
A-F (letter grade)	☒	☒
Pass/No pass	☒	☐
Audit in consultation with faculty	☐	☐

Is this course equivalent to another? If yes, they must have the same description and outcomes.	☐ Yes ☒ No	Course Number and Title

SECTION #2 REQUISITES: PLACEMENT INTO, PRE, CO AND CONCURRENT

Note: if this course is requesting approval for the Gen Ed list, it will have, as a default, the following standard requisites: Prerequisite: MTH 20 or equivalent placement test scores. Prerequisite/concurrent: WR 121. Higher levels of any of these prerequisites, or additional prerequisites can be requested. However, if the department wants to set the RD, WR and/or MTH prerequisites at a lower level, you will need to use the Prerequisite Opt-out form available on the Curriculum website.

☐ Standard requisites – Prerequisite: MTH 20 or equivalent placement test scores.
Prerequisite/concurrent: WR 121.

☐ Placement into:		☐ Placement into:		
course prefix & number:	MTH 105	☐ Prerequisite	☒ Corequisite	☐ pre/co
course prefix & number:		☐ Prerequisite	☐ Corequisite	☐ pre/co
course prefix & number:		☐ Prerequisite	☐ Corequisite	☐ pre/co

SECTION #3 COURSE DESCRIPTION, OUTCOMES, AND CONTENT

COURSE DESCRIPTION: To be used in the catalog and schedule of classes. Begin each sentence of the course description with an active verb. Avoid using the phrases: "This course will …" and/or "Students will …" Include course requisites in the description. Guidelines for writing concise descriptions can be found at Writing Course Descriptions.

Focuses on the foundational skills, concepts, and communication needed to be successful in MTH 105 Math in Society. Provides appropriate support in arithmetic skills, algebra skills, technology, and study skills in an interactive setting. Corequisite: MTH 105.

LEARNING OUTCOMES: Describe what the student will be able to do "out there" (in their life roles as worker, family member, community citizen, global citizen or lifelong learners). Outcomes must be measurable through the application of direct and/or indirect assessment strategies. Three to six outcomes are recommended. Start each outcome with an active verb, completing the sentence starter provided. (See Writing Learning Outcomes on the curriculum website.)

Outcomes: (Use observable and measurable verbs)	Upon successful completion of this course, students will be able to:
	1. Solve application problems, and communicate and interpret the results in context.
	2. Demonstrate relevant skills to effectively engage with the concepts and skills needed in MTH 105.
	3. Utilize study habits and learning strategies that promote success in MTH 105.
	4.
Outcomes assessment strategies:	Quizzes, reflections, lab assessments, projects

COURSE CONTENT, ACTIVITIES AND DESIGN

Activity & Design: The determination of teaching strategies used in the delivery of outcomes is generally left to the discretion of the instructor. On occasion, a department may decide that the inclusion of a particular strategy will be required (specify in "required activities" box below). For example, a department may determine that a course will be required to incorporate a service learning project into its curriculum delivery. However, for the most part, delivery mechanisms fall under academic freedom and so the individuality and creativity of each instructor.
Here are some strategies that you might consider when designing your course: lecture, small group/forum discussion, flipped classroom, dyads, oral presentation, role play, simulation scenarios, group projects, service learning projects, hands-on lab, peer review/workshops, cooperative learning (jigsaw, fishbowl), inquiry based instruction, differentiated instruction (learning centers), graphic organizers, etc.

Department required course activities (optional):	
Course Content – organized by outcomes (list each outcome followed by an outline of the related content):	**Outcome #1:** Solve application problems, and communicate and interpret the results in context. • Functional notation • Probability notation • Set notation • Technology skills, calculator skills • Mathematical vocabulary • Communicating mathematics

	• Interpreting results and judging reasonableness of results • Problem solving strategies • Arithmetic of fractions, decimals, percentages, signed integers, exponents, roots • Order of operations • Rounding • Estimation • Evaluating formulas • Solving equations in one variable • Solving formulas for a variable • Geometry, area, volume, units of measurement • Graphing • Logic concepts and notation **Outcome #2:** Demonstrate relevant skills to effectively engage with the concepts and skills needed in MTH 105. • Functional notation • Probability notation • Set notation • Technology skills, calculator skills • Mathematical vocabulary • Communicating mathematics • Interpreting results and judging reasonableness of results • Problem solving strategies • Arithmetic of fractions, decimals, percentages, signed integers, exponents, roots • Order of operations • Rounding • Estimation • Evaluating formulas • Solving equations in one variable • Solving formulas for a variable • Geometry, area, volume, units of measurement • Graphing • Logic concepts and notation **Outcome #3:** Utilize study habits and learning strategies that promote success in MTH 105. • Responding to feedback • Preparing for tests • Recognizing areas of struggle • Studying what you need to study • Recognizing when and how to get help • Persistence and resilience in problem solving
Suggested Texts & Materials (specify if any texts or materials are required):	Math in Society, Lippman MyOpenMath software/LMS

Department Notes: (optional)	

SECTION #4 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 requires us to certify that at least one Oregon university will accept our new LDC course in transfer. To ensure the quality of our transfer programs and to provide students with the best information on how individual courses will transfer, we require faculty to ascertain the transferability of a proposed course by communicating with colleagues at a minimum of three Oregon universities, asking the following 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? While you may contact any Oregon university, we recommend, based on CGCC student transfer history, that you conduct transferability screening with OSU, PSU and EOR as these are the more common destinations of CGCC transfer students. 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 Oregon universities will the course transfer to? List all	UofO, EOU, PSU
How does it transfer? Check all that apply	☐ Required or support for major ☐ General education distribution requirement ☒ General elective ☐ Other (provide details)
Provide evidence of transferability from three or more universities. Recommended universities based on CGCC transfer history: OSU, PSU and EOU	☒ Completed Transferability/Articulation of Individual CGCC Courses form ☐ Other - describe
Identify comparables at Oregon community colleges; list college, course prefix, number and title.	
Are special designations being sought at this time?	☐ General Education – Discipline specific Gen Ed form required. ☐ Cultural Literacy – Cultural Literacy designation request form required. (Cultural Literacy designation requires that the course has a Gen Ed designation.)

SECTION #5 ADDITIONAL INFORMATION FOR NEW LDC COURSES		
Is this course in a degree or certificate as required, an elective or a prerequisite? Please provide details.		
Name of certificate(s):		# credits:
Name of degree(s):		# credits:
Briefly explain how this course fits into the above program(s), i.e. requirement or elective:	Students will be placed into this course based on multiple measures. The targeted audience will be: 1. students out of high school 1 - 5 years 2. students who scored a "c" in their preceding math course ie. Math 95, 98,	
Impact on other Programs and Departments		

Are there similar courses existing in other programs or disciplines at CGCC? If yes, explain and/or describe the nature of acknowledgements and/or agreements that have been reached.	Yes – This course is being created as an additional pathway for students. By offering this course as a co-requisite, students can have the potential for more success in MTH 105
Have you consulted with the Department Chair(s) of other program(s) regarding potential impact such as content overlap, duplication, prerequisites, enrollment impact etc. Explain and/or describe the nature of acknowledgements or agreements reached.	The math department chair acknowledges that multiple measures will be used to properly place students in MTH 105L. This may reduce the number of students flowing through the MTH 60, 65, 95 sequence. This sequence will not go away. Many of the current degrees only need 65 or 95 and those students will not need to take Math 243.
Has the Library director been notified regarding the addition of this course and the need for any potential resources?	☒ Yes – date: 2/25/2022 ☐ No
Implementation term:	☒ Start of next academic year (summer term) ☐ Specify term (if BEFORE start of next academic year):
Allow 1-2 months to complete the new course approval process before the course can be scheduled. The Curriculum Office will notify the submitter, department chair, and department director when the course has completed the approval process and is available to be scheduled. Curriculum changes generally go into effect at the beginning of the next academic year (summer term). Mid-year revisions/additions are discouraged but accommodated when possible if there is a specific, identifiable need.	

SECTION #6 DEPARTMENT REVIEW

"I vouch that this submission has been reviewed by the affiliated department chair and department dean and that they have given initial authorization for this submission. I am requesting that it be placed on the next Curriculum Committee agenda with available time slots. I understand that I am required to complete and submit, prior to the day my submission is reviewed by the Curriculum Committee, a Course Signature Form signed by the department chair and dean."

Submitter	Email	Date
Pam Morse	pmorse@cgcc.edu	3.2.22
Department Chair (enter name of department chair): Pam Morse		
Department Dean (enter name of department dean): Rebecca Schwartz		

NEXT STEPS:

1. Save this document as the course prefix and number (e.g. MTH 65 or HST 104). Send completed form electronically to curriculum@cgcc.edu or slewis@cgcc.edu.
2. Refer to the curriculum office website for the Curriculum Committee meeting schedule and submission deadlines. You are encouraged to send submissions prior to the deadline so that the curriculum office may review and provide feedback.

Transfer/Articulation of Individual CGCC Courses

Directions:
Complete this form with all applicable information and as much detail as possible. Include any communication (letters, email strings, phone transcripts) you've had with faculty/staff at the Oregon universities. When you have finished, e-mail this as an attachment to the Curriculum Office at: curriculum@cgcc.edu or slewis@cgcc.edu.

In order to obtain a General Education designation, at least three Oregon universities must confirm the course will transfer and one of the schools must approve the transfer as General Education. While it is not mandatory, we highly recommend that the three universities that you contact are Portland State University (PSU), Oregon State University (OSU), and Eastern Oregon University (EOU) as these are the most common transfer destinations of CGCC students.

Course #: MTH105L Title: Foundations of Math in Society

Credits: 1 Total Contact Hours: Lec: _____ Lab: 33 Lec-Lab: _____

Course Description:
Focuses on the foundational skills, concepts, and communication needed to be successful in MTH 243 Statistics I. Provides appropriate support in arithmetic skills, algebra skills technology, and study skills in an interactive setting. Co-req MTH243

Course Prerequisites:
MTH 95 or MTH 98 or equivalent placement test scores. Prerequisite/concurrent: WR 121.

This course will be accepted in transfer as counting towards:(please check all that apply, identify receiving university, and provide details)

- ☐ Gen Ed/Distribution req. in: (Arts & Letters, Social Science, Science/Computer Science, Math)_____
- ☐ Requirement in major: (list major)_____
- ☐ Elective for major: (list major)_____
- ☐ Course Equivalency: (list comparable courses; identify univ.)_____
- ☐ Other: _____
- ☒ Elective only

Rationale, college/university departments contacted, etc., in support of requested transfer status (**include contact names and titles, times and dates of conversations/emails, and be specific documenting agreements/understandings; include attachments to verify documentation as needed**):
This is a support class for MTH 105. This course is new and CGCC is one of the first schools in the state to offer the co-requisite. See attached for OSU and EOU and PSU

Based on my conversations with faculty and/or staff at Oregon universities, I verify that to the best of my knowledge, this course will transfer as noted above.

Signature: Pam Morse Date 2/25/2022

Printed Name: Pam Morse Title: Department Chair/Instructor

Department: Mathematics E-mail: pmorse@cgcc.edu

COLUMBIA GORGE COMMUNITY COLLEGE

Pam Morse <pmorse@cgcc.edu>

New Course Transferability

3 messages

Pam Morse <pmorse@cgcc.edu> Fri, Feb 25, 2022 at 11:29 AM
To: Brooke Hewitt <bhewitt@eou.edu>

Good Morning,

My team here at CGCC is in the process of creating a corequisite course for Math 105 Math in Society. I am attaching the course description and outcomes. Will this course transfer as an elective course? If not, what do we need change in order for it to transfer?

Thank you for time and consideration,
Pam Morse
Chair Math Dept.
Mathematics Instructor
541-308-8218
541-645-0512 (cell/text)
https://cgcc.zoom.us/j/5704017360 (zoom conferencing by appt.)
https://www.cgcc.edu/patricia-pam-morse

"Learning is a treasure that will follow its owner everywhere" - Chinese Proverb

Math isn't just about numbers, it's about any kind of abstract object that has properties we can reason about.

Course outcomes Math 105.doc
46K

Brooke Hewitt <bhewitt@eou.edu> Fri, Feb 25, 2022 at 1:38 PM
To: Pam Morse <pmorse@cgcc.edu>

Course will come in as MATH LDT Math in Society*SMI. It will meet institutional math requirement, gen ed SMI, towards 180, outside of program, as well as program math requirement for some programs.

Thanks!

Brooke Hewitt, MBA
Transfer Articulation Specialist
541-962-3936 | bhewitt@eou.edu

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COLUMBIA GORGE COMMUNITY COLLEGE

Pam Morse <pmorse@cgcc.edu>

New Course Transferability

2 messages

Pam Morse <pmorse@cgcc.edu> Fri, Feb 25, 2022 at 11:30 AM
To: RO Articulation <articulation@pdx.edu>

Good Morning.

My team here at CGCC is in the process of creating a corequisite course for Math 105 Math in Society. I am attaching the course description and outcomes. Will this course transfer as an elective course? If not, what do we need change in order for it to transfer?

Thank you for time and consideration,
Pam Morse
Chair Math Dept.
Mathematics Instructor
541-308-8218
541-645-0512 (cell/text)
https://cgcc.zoom.us/j/5704017360 (zoom conferencing by appt.)
https://www.cgcc.edu/patricia-pam-morse

"Learning is a treasure that will follow its owner everywhere" - Chinese Proverb

Math isn't just about numbers, it's about any kind of abstract object that has properties we can reason about.

Course outcomes Math 105.doc
46K

RO Articulation <articulation@pdx.edu> Fri, Feb 25, 2022 at 11:47 AM
To: Pam Morse <pmorse@cgcc.edu>

Hi Pam,

This class will also transfer as GEN LD, only counting towards the 180 credits needed for degree.

Also, there's a typo near the end of the course outcomes guide you may want to correct-MTH 109 is used instead of MTH 105.

Thanks,
Suzanne

[Quoted text hidden]

[Quoted text hidden]

COLUMBIA GORGE COMMUNITY COLLEGE

Pam Morse <pmorse@cgcc.edu>

New Course Transferability

3 messages

Pam Morse <pmorse@cgcc.edu> Fri, Feb 25, 2022 at 11:32 AM
To: Shelly Ehlers <sehlers@uoregon.edu>

Good Morning.

My team here at CGCC is in the process of creating a corequisite course for Math 105 Math in Society. I am attaching the course description and outcomes. Will this course transfer as an elective course? If not, what do we need change in order for it to transfer?

Thank you for time and consideration,

Pam Morse
Chair Math Dept.
Mathematics Instructor
541-308-8218
541-645-0512 (cell/text)
https://cgcc.zoom.us/j/5704017360 (zoom conferencing by appt.)
https://www.cgcc.edu/patricia-pam-morse

"Learning is a treasure that will follow its owner everywhere" - Chinese Proverb

Math isn't just about numbers, it's about any kind of abstract object that has properties we can reason about.

Course outcomes Math 105.doc
46K

Shelly Ehlers <sehlers@uoregon.edu> Fri, Feb 25, 2022 at 11:44 AM
To: Pam Morse <pmorse@cgcc.edu>

Good morning Pam,

Here is how this course will transfer to the University of Oregon:

Columbia Gorge Community College 041519

MATH 105L = MATH 1AAT Math 100 level course (elective)

Please let me know if you have any questions or concerns regarding this matter.

Sincerely,

Shelly

Shelly Ehlers

Transfer Program Coordinator

Office of the Registrar

UNIVERSITY OF OREGON

[Quoted text hidden]

Pam Morse <pmorse@cgcc.edu> Fri, Feb 25, 2022 at 11:45 AM
To: Shelly Ehlers <sehlers@uoregon.edu>

Thank you so very much!

Pam Morse
Chair Math Dept.
Mathematics Instructor
541-308-8218
541-645-0512 (cell/text)
https://cgcc.zoom.us/j/5704017360 (zoom conferencing by appt.)
https://www.cgcc.edu/patricia-pam-morse

"Learning is a treasure that will follow its owner everywhere" - Chinese Proverb

Math isn't just about numbers, it's about any kind of abstract object that has properties we can reason about.

[Quoted text hidden]

Math in Society

Course Number: MTH 105
Transcript Title: Math in Society
Created: December 14, 2015
Updated: February 28, 2022
Total Credits: 4
Lecture Hours: 40
Lecture / Lab Hours: 0
Lab Hours: 0
Satisfies Cultural Literacy requirement: No
Satisfies General Education requirement: Yes
Grading options: A-F (default), P-NP, audit
Repeats available for credit: 0

Prerequisites
MTH 65 (https://www.cgcc.edu/courses/mth-65) or MTH 98 (http://www.cgcc.edu/courses/mth-98) or equivalent placement test scores.

Prerequisite / Concurrent
WR 121 (/courses/wr-121)

Course Description

Explores applications of mathematics in society including quantitative techniques in personal and public finance, basic probability and statistics for understanding risk and uncertainty, and concepts and applications of formal logic to argumentation and persuasion. Investigates a variety of mathematical problem-solving techniques and provides a sampling of more advanced mathematics or mathematics-related topics. Integrates technology where appropriate. Prerequisites: MTH 65 or MTH 98 or equivalent placement test scores. Prerequisite/concurrent: WR 121. Audit available.

Intended Outcomes

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

1. Use relevant mathematical concepts and techniques to critically analyze and make knowledgeable decisions about issues in personal and public finance.
2. Use relevant concepts and techniques from probability and statistics to critically analyze and make knowledgeable decisions about problems involving risk and uncertainty.
3. Construct, interpret, and critique the graphical display of information.
4. Formulate logically rigorous arguments and critique those that are not.
5. Effectively communicate orally and in writing arguments and results based on quantitative and other rigorous forms of mathematical reasoning.

Alignment with Institutional Core Learning Outcomes

Major	1. Communicate effectively using appropriate reading, writing, listening, and speaking skills. *(Communication)*
Major	2. Creatively solve problems by using relevant methods of research, personal reflection, reasoning, and evaluation of information. *(Critical thinking and Problem-Solving)*
Major	3. Extract, interpret, evaluate, communicate, and apply quantitative information and methods to solve problems, evaluate claims, and support decisions in their academic, professional and private lives. *(Quantitative Literacy)*
Not addressed	4. Use an understanding of cultural differences to constructively address issues that arise in the workplace and community. *(Cultural Awareness)*
Major	5. Recognize the consequences of human activity upon our

social and natural world. *(Community and Environmental Responsibility)*

To establish an intentional learning environment, Core Learning Outcomes (CLOs) require a clear definition of instructional strategies, evidence of recurrent instruction, and employment of several assessment modes.

Major Designation

1. The outcome is addressed recurrently in the curriculum, regularly enough to establish a thorough understanding.
2. Students can demonstrate and are assessed on a thorough understanding of the outcome.
   - The course includes at least one assignment that can be assessed by applying the appropriate CLO rubric.

Minor Designation

1. The outcome is addressed adequately in the curriculum, establishing fundamental understanding.
2. Students can demonstrate and are assessed on a fundamental understanding of the outcome.
   - The course includes at least one assignment that can be assessed by applying the appropriate CLO rubric.

Outcome Assessment Strategies

Assessment shall include some combination of the following:

- Class participation
- Group projects
- Presentations
- Portfolios
- Research papers
- Homework assignments
- Written paper
- Quizzes
- Exams
- Other assessments of the instructor's choosing

Texts and Materials

Lippman, D, *Math in Society Edition 2.5* The text is open source and available online at https://www.opentextbookstore.com/mathinsociety/

Course Activities and Design

The determination of teaching strategies used in the delivery of outcomes is generally left to the discretion of the instructor. Here are some strategies that you might consider when designing your course: lecture, small group/forum discussion, flipped classroom, dyads, oral presentation, role play, simulation scenarios, group projects, service learning projects, hands-on lab, peer review/workshops, cooperative learning (jigsaw, fishbowl), inquiry based instruction, differentiated instruction (learning centers), graphic organizers, etc.

Course Content (Themes, Concepts, Issues and Skills)

Outcome #1: Use relevant mathematical concepts and techniques to critically analyze and make knowledgeable decisions about issues in personal and public finance.

- Financial Literacy
  - Taxes (percent sales, income, value added, other)
  - Simple and compound interest
  - Annuities
  - Loans and credits

Outcome #2: Use relevant concepts and techniques from probability and statistics to critically analyze and make knowledgeable decisions about problems involving risk and uncertainty.

- Probability and statistics
  - Counting rules
  - Measures of central tendency and spread
  - Calculating and interpreting basic probabilities
  - Margins of error and polling
  - Expectation
  - Probability distribution
  - Risk and uncertainty
  - Misuse of data and statistics

Outcome #3: Construct, interpret, and critique the graphical display of information

- Constructing and interpreting graphical displays of information using technology
- Construct and interpret meaningful labels

Outcome #4: Formulate logically rigorous arguments and critique those that are not.

- Describing and critiquing arguments
- Understanding the language of logic
- Recognizing common logical fallacies
- Non-algebraic solving problem-solving strategies

Outcome #5. Effectively communicate orally and in writing arguments and results based on quantitative and other rigorous forms of mathematical reasoning.

- Appropriate mathematical notation
- Describing and critiquing arguments

Additional Content Information

Financial Literacy, Logic and reasoning, and Probability and statistics are required topics. This comprises approximately 60% of the course content. Instructors may choose any combination of the following for the remaining 40%:

- Applied trigonometry
- Apportionment
- Boolean algebra
- Category theory
- Chaos theory
- Classical and quantum computing
- Complexity theory
- Cryptography
- Data science
- Dimensional analysis
- Discrete mathematics
- Economics
- Fair division
- Fractal geometry
- Game theory
- Graph theory and networks
- Group theory and symmetry
- History of mathematics
- Machine learning
- Math and ecology (biodiversity, climate change)
- Math and the arts
- Math and the law
- Measurement theory
- Modeling growth and decay
- Non-Euclidean geometry
- Number theory
- Numerical analysis
- Optimization
- Probability (frequentist, Bayesian, randomization)
- Scheduling and linear programming
- Set theory and transfinite arithmetic
- Topology (general, algebraic)
- Voting theory

Department Notes

Word problems are to be answered using complete sentences and include appropriate units.

Columbia Gorge Community College

Contact Hours / Credit Change

(Double click on check boxes to activate dialog box)

SECTION #1 GENERAL INFORMATION			
Department	Mathematics	Submitter name: Phone: Email:	Pam Morse/Abel Wolman pmorse@cgcc.edu awolman@cgcc.edu
Course prefix and number	MTH243	Course title	Statistics I

Contact and Credit Hours
- 1 credit of lecture meets 1 hr /wk, plus 2 hrs/wk of study for 10 weeks = 30 hr
- 1 credit of lec-lab meets 2 hr/wk, plus 1 hr of study, for 10 weeks = 30 hr
- 1 credit of lab or cooperative ed meets 3 hrs/wk, with minimal outside study, for 10 wks = 30 hr

Current Contact And Credit Hours		Proposed Contact And Credit Hours	
Lecture	5	Lecture	3
Lab		Lab	
Lecture/Lab		Lecture/Lab	2
Total weekly contact hours	5	Total weekly contact hours	5
Total credits	5	Total credits	4
Reason for change:	With the addition of the corequisite class, there can only be a maximum of 5 credits between the core class and the corequisite. By having a lecture/lab it should benefit students not in the corequisite with some more hands on. By restructuring how the course is taught, the same outcomes should be able to be achieved.		

LEARNING OUTCOMES: Are learning outcomes affected by this change. If you are adding or removing credits, then it is expected there will be a change in the outcomes.

☐ Yes ☒ No	If yes, then revise the course learning outcomes by completing a course revision form found on the curriculum website.

IMPACT ON DEGREE AND CERTIFICATES: Are there degrees or certificates affected by this change?

☐ Yes ☒ No	If yes, complete a degree/certificate change form located on the curriculum website.

IMPACT ON OTHER DEPARTMENTS: Are there changes that will impact other departments? Are there degrees or certificates that require this course as part of their program or as a prerequisite?

☐ Yes ☒ No	If yes, please explain and describe how the impact was resolved	

Have you consulted with department chairs from other disciplines regarding potential course duplication, impact on enrollment or content overlap?		
☐ Yes ☒ No	If yes, please describe	
Implementation term		☐ Next available term after approval ☒ Specific term (if after next available term): Fall 2022

SECTION #2 DEPARTMENT REVIEW		
"I vouch that this submission has been reviewed by the affiliated department chair and department dean and that they have given initial authorization for this submission. I am requesting that it be placed on the next Curriculum Committee agenda with available time slots. I understand that I am required to complete and submit, prior to the day my submission is reviewed by the Curriculum Committee, a Course Signature Form signed by the department chair and dean."		
Submitter	Email	Date
Pam Morse/Abel Wolman	pmorse@cgcc.edu/awolman@cgcc.edu	2/25/2022
Department Chair (enter name of department chair): Pam Morse		
Department Dean (enter name of department dean): Rebecca Schwartz		

NEXT STEPS:

1. Save this document as ContHrChg.course prefix and course number (e.g. ContHrChg.HST 204). Send completed form electronically to curriculum@cgcc.edu or slewis@cgcc.edu.
2. Refer to the curriculum office website for the Curriculum Committee meeting schedule and submission deadlines. You are encouraged to send submissions prior to the deadline so that the curriculum office may review and provide feedback.
3. Course submissions will be placed on the next agenda with available time slots. You will be notified of your submission's time for review, and you will be sent a signature page that may be completed electronically or manually by your department chair and department director. It is the submitter's responsibility to ensure that completed signature pages are delivered to the Curriculum Office the day before the Curriculum Committee meeting for which the submission is scheduled. Submissions without signed signature pages will be postponed.
4. It is not mandatory that you attend the Curriculum Committee meeting in which your submission is scheduled for review; however, it is strongly encouraged that you attend so that you may represent your submission and respond to any committee questions. Unanswered questions may result in a submission being rescheduled for further clarification.

Statistics I

Course *MTH 243* has been updated.

Course Number: MTH 243
Transcript Title: Statistics I
Created: September 1, 2012
Updated: March 11, 2022
Total Credits: 5
Lecture Hours: 50
Lecture / Lab Hours: 0
Lab Hours: 0
Satisfies Cultural Literacy requirement: No
Satisfies General Education requirement: Yes
Grading options: A-F (default), P-NP, audit
Repeats available for credit: 0

Prerequisites
MTH 95 or MTH 98 or equivalent placement test scores.

Prerequisite / Concurrent
WR 121 (/courses/wr-121)

Course Description

Introduces displaying data with graphs, numerical descriptions of data, producing data, elementary probability, probability distributions, confidence intervals and significance testing. Investigates applications from science, business, and social science perspectives. Graphing calculator required. Prerequisite: MTH 95 or MTH 98 or equivalent placement test scores. Prerequisite/concurrent: WR 121. Audit available.

Intended Outcomes

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

1. Identify concepts and techniques from descriptive and inferential statistics and real-world applications of the same.
2. Use concepts and techniques from descriptive and inferential statistics to describe, model, and analyze real-world problems.
3. Critique the application of probability and statistics to real-world problems and effectively communicate these ideas in written and verbal form.

Alignment with Institutional Core Learning Outcomes

Major	1. Communicate effectively using appropriate reading, writing, listening, and speaking skills. *(Communication)*
Major	2. Creatively solve problems by using relevant methods of research, personal reflection, reasoning, and evaluation of information. *(Critical thinking and Problem-Solving)*
Major	3. Extract, interpret, evaluate, communicate, and apply quantitative information and methods to solve problems, evaluate claims, and support decisions in their academic, professional and private lives. *(Quantitative Literacy)*
Not addressed	4. Use an understanding of cultural differences to constructively address issues that arise in the workplace and community. *(Cultural Awareness)*
Major	5. Recognize the consequences of human activity upon our social and natural world. *(Community and Environmental Responsibility)*

To establish an intentional learning environment, Core Learning Outcomes (CLOs) require a clear definition of instructional strategies, evidence of recurrent instruction, and employment of several assessment modes.

Major Designation

1. The outcome is addressed recurrently in the curriculum, regularly enough to establish a thorough understanding.
2. Students can demonstrate and are assessed on a thorough understanding of the outcome.
   - The course includes at least one assignment that can be assessed by applying the appropriate CLO rubric.

Minor Designation

1. The outcome is addressed adequately in the curriculum, establishing fundamental understanding.
2. Students can demonstrate and are assessed on a fundamental understanding of the outcome.
   - The course includes at least one assignment that can be assessed by applying the appropriate CLO rubric.

Outcome Assessment Strategies

Assessment shall include some combination of the following:

- Class participation
- Group projects
- Presentations
- Portfolios
- Research papers
- Homework assignments
- Written paper
- Quizzes
- Exams
- Other assessments of the instructors choosing

Texts and Materials

Moore, D. et al., *Introduction to the Practice of Statistics, 7^{th} Ed.*, W. H. Freeman, 2012.

Course Activities and Design

The determination of teaching strategies used in the delivery of outcomes is generally left to the discretion of the instructor. Here are some strategies that you might consider when designing your course: lecture, small group/forum discussion, flipped classroom, dyads, oral presentation, role play, simulation scenarios, group projects, service learning projects, hands-on lab, peer review/workshops, cooperative learning (jigsaw, fishbowl), inquiry based instruction, differentiated instruction (learning centers), graphic organizers, etc.

Course Content (Themes, Concepts, Issues and Skills)

Outcome #1: Identify concepts and techniques from descriptive and inferential statistics and real-world applications of the same.

1. The concepts of descriptive and inferential statistics
2. Common statistical terminology, including
   - Population
   - Sample
   - Variable
   - Statistical inference
3. Data sets and their distributions
   - Qualitative and quantitative data
   - Discrete and continuous data
   - Pie charts and bar charts
   - Frequency tables
   - Histograms
   - Density curves
   - Stem-and-leaf plots
   - Boxplots
   - Dotplots
   - The shape of a distribution, including
     - symmetric, skewed left, or skewed right
     - Heavy (fat) and light tails
     - Unimodal, bimodal, and multimodal

- Calculation and interpretation of numerical measures of central tendency, including
  - Mean
  - Median
  - Mode
- Calculation and interpretation of numerical measures of dispersion, including
  - Range
  - Interquartile range
  - Variance
  - Standard deviation
- Calculation and interpretation of measures of relative standing, including
  - Quartiles
  - Percentiles
  - Z-scores

4. Relationships between two variables
   - Response and explanatory variables
   - Scatterplots
   - Positive or negative association between variables
   - Calculation and interpretation of the correlation coefficient and the coefficient of determination
   - Calculation and interpretation of the least-squares regression line
   - Prediction for values of a dependent variable using the least-squares regression line
   - Caveats concerning regression and correlation, including
     - Residuals
     - Confounding and lurking variables
     - Causation versus association
5. Use of technology
   - Input and edit data
   - Create dotplots, histograms, boxplots, scatterplots, and residual plots
   - Calculate one-variable summary statistics
6. Data production
   - Differences between experiments and observational studies
   - Sampling designs, including
     - Voluntary response sample
     - Simple random sample
     - Stratified sample
     - Multistage sample
     - Systematic sample
     - Cluster sample
   - Use of technology or tables of random numbers to select a simple random sample
   - Identification of the elements of experiments and observational studies, including
     - Experimental units
     - Factors
     - Placebo
     - Bias
     - Control
     - Replication
     - Randomization
7. Elementary probability theory
   - Terminology, including
     - Experiment
     - Simple event
     - Sample space
     - Disjoint events
     - Independent events
     - Complementary events
     - Law of Large Numbers

- Calculation and interpretation of marginal, joint, and conditional probabilities
- Calculation and interpretation of probabilities using
  - Venn diagrams
  - Contingency tables
  - Tree diagrams
  - Additive rule
  - Multiplicative rule
- Calculation and interpretation of conditional probabilities using Bayes' Rule

8. Random variables
   - Terminology, including
     - Random variable
     - Probability distribution
     - Expected value
     - Variance
     - Standard deviation
     - Probability density function
   - Discrete and continuous random variables
   - Binomial probability distributions
   - Normal probability distributions
   - Normal approximations to binomial distributions
   - Use of technology to
     - Input a probability density function
     - Compute and interpret the probability that a discrete random variable is equal to a specified value.
     - Compute and interpret the probability that a discrete random variable lies within an interval of values.
     - Compute and interpret the probability that a continuous random variable lies within an interval of values.
     - Simulate probability distributions by generating random data.
   - Compute and interpret mean and standard deviation for
     - A discrete random variable
     - A linear transformation of a random variable
     - The sum or difference of two independent random variables
9. Sampling distributions.
   - Terminology, including
     - Parameter
     - Statistic
     - Point estimator
     - Biased vs. unbiased estimator
   - Calculation and interpretation of a sample mean and its standard deviation
   - The sampling distribution of a statistic
   - Properties of sampling distributions
   - Properties of the sampling distribution of the mean
   - Central Limit Theorem.
10. Estimation
    - Terminology, including
      - Point estimator
      - Confidence level
      - Confidence interval
    - Calculation and interpretation of large-sample estimators of a population means, counts, and proportions
    - Sample size calculations to attain a desired margin of error and confidence level.
11. Significance testing
    - Terminology, including
      - Null hypothesis
      - Alternative hypothesis, one-sided and two-sided
      - Significance level
      - P-value
      - Statistical significance

- Methods and interpretation of results, including
  - Specification of an appropriate parameter of interest
  - Verification of required conditions for the test of significance
  - Identification, production of data, and set up a basic significance test
  - Computation of P-values using technology or tables of distribution values
  - Assessment of significance tests for predetermined significance levels
  - Distinction between statistical versus practical significance.
- Comparison of information from confidence intervals and significance tests

Outcome #2: Use concepts and techniques from descriptive and inferential statistics to describe, model, and analyze real-world problems.

1. Specific real-world applications of the following statistical concepts and techniques
2. The concepts of descriptive and inferential statistics
3. Common statistical terminology, including
   - Population
   - Sample
   - Variable
   - Statistical inference
4. Data sets and their distributions
   - Qualitative and quantitative data
   - Discrete and continuous data
   - Pie charts and bar charts
   - Frequency tables
   - Histograms
   - Density curves
   - Stem-and-leaf plots
   - Boxplots
   - Dotplots
   - The shape of a distribution, including
     - symmetric, skewed left, or skewed right
     - Heavy (fat) and light tails
     - Unimodal, bimodal, and multimodal
   - Calculation and interpretation of numerical measures of central tendency, including
     - Mean
     - Median
     - Mode
   - Calculation and interpretation of numerical measures of dispersion, including
     - Range
     - Interquartile range
     - Variance
     - Standard deviation
   - Calculation and interpretation of measures of relative standing, including
     - Quartiles
     - Percentiles
     - Z-scores
5. Relationships between two variables
   - Response and explanatory variables
   - Scatterplots
   - Positive or negative association between variables
   - Calculation and interpretation of the correlation coefficient and the coefficient of determination
   - Calculation and interpretation of the least-squares regression line
   - Prediction for values of a dependent variable using the least-squares regression line
   - Caveats concerning regression and correlation, including
     - Residuals
     - Confounding and lurking variables
     - Causation versus association
6. Use of technology

- Input and edit data
- Create dotplots, histograms, boxplots, scatterplots, and residual plots
- Calculate one-variable summary statistics

7. Data production
   - Differences between experiments and observational studies
   - Sampling designs, including
     - Voluntary response sample
     - Simple random sample
     - Stratified sample
     - Multistage sample
     - Systematic sample
     - Cluster sample
   - Use of technology or tables of random numbers to select a simple random sample
   - Identification of the elements of experiments and observational studies, including
     - Experimental units
     - Factors
     - Placebo
     - Bias
     - Control
     - Replication
     - Randomization
8. Elementary probability theory
   - Terminology, including
     - Experiment
     - Simple event
     - Sample space
     - Disjoint events
     - Independent events
     - Complementary events
     - Law of Large Numbers
   - Calculation and interpretation of marginal, joint, and conditional probabilities
   - Calculation and interpretation of probabilities using
     - Venn diagrams
     - Contingency tables
     - Tree diagrams
     - Additive rule
     - Multiplicative rule
   - Calculation and interpretation of conditional probabilities using Bayes' Rule
9. Random variables
   - Terminology, including
     - Random variable
     - Probability distribution
     - Expected value
     - Variance
     - Standard deviation
     - Probability density function
   - Discrete and continuous random variables
   - Binomial probability distributions
   - Normal probability distributions
   - Normal approximations to binomial distributions
   - Use of technology to
     - Input a probability density function
     - Compute and interpret the probability that a discrete random variable is equal to a specified value.
     - Compute and interpret the probability that a discrete random variable lies within an interval of values.
     - Compute and interpret the probability that a continuous random variable lies within an interval of values.

    - Simulate probability distributions by generating random data.
  - Compute and interpret mean and standard deviation for
    - A discrete random variable
    - A linear transformation of a random variable
    - The sum or difference of two independent random variables
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  - Terminology, including
    - Parameter
    - Statistic
    - Point estimator
    - Biased vs. unbiased estimator
  - Calculation and interpretation of a sample mean and its standard deviation
  - The sampling distribution of a statistic
  - Properties of sampling distributions
  - Properties of the sampling distribution of the mean
  - Central Limit Theorem.
11. Estimation
  - Terminology, including
    - Point estimator
    - Confidence level
    - Confidence interval
  - Calculation and interpretation of large-sample estimators of a population means, counts, and proportions
  - Sample size calculations to attain a desired margin of error and confidence level.
12. Significance testing
  - Terminology, including
    - Null hypothesis
    - Alternative hypothesis, one-sided and two-sided
    - Significance level
    - P-value
    - Statistical significance
  - Methods and interpretation of results, including
    - Specification of an appropriate parameter of interest
    - Verification of required conditions for the test of significance
    - Identification, production of data, and set up a basic significance test
    - Computation of P-values using technology or tables of distribution values
    - Assessment of significance tests for predetermined significance levels
    - Distinction between statistical versus practical significance.
  - Comparison of information from confidence intervals and significance tests

Outcome #3: Critique the application of probability and statistics to real-world problems and effectively communicate these ideas in written and verbal form.

1. Application to real-world problems of the following statistical concepts and techniques with an emphasis on effective communication, verbal and written, of the real-world implications and interpretations of the resulting statistical summaries, descriptions and inferences.
2. The concepts of descriptive and inferential statistics
3. Common statistical terminology, including
  - Population
  - Sample
  - Variable
  - Statistical inference
4. Data sets and their distributions
  - Qualitative and quantitative data
  - Discrete and continuous data
  - Pie charts and bar charts
  - Frequency tables
  - Histograms
  - Density curves

- Stem-and-leaf plots
- Boxplots
- Dotplots
- The shape of a distribution, including
  - symmetric, skewed left, or skewed right
  - Heavy (fat) and light tails
  - Unimodal, bimodal, and multimodal
- Calculation and interpretation of numerical measures of central tendency, including
  - Mean
  - Median
  - Mode
- Calculation and interpretation of numerical measures of dispersion, including
  - Range
  - Interquartile range
  - Variance
  - Standard deviation
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  - Quartiles
  - Percentiles
  - Z-scores

5. Relationships between two variables
   - Response and explanatory variables
   - Scatterplots
   - Positive or negative association between variables
   - Calculation and interpretation of the correlation coefficient and the coefficient of determination
   - Calculation and interpretation of the least-squares regression line
   - Prediction for values of a dependent variable using the least-squares regression line
   - Caveats concerning regression and correlation, including
     - Residuals
     - Confounding and lurking variables
     - Causation versus association
6. Use of technology
   - Input and edit data
   - Create dotplots, histograms, boxplots, scatterplots, and residual plots
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7. Data production
   - Differences between experiments and observational studies
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     - Voluntary response sample
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     - Systematic sample
     - Cluster sample
   - Use of technology or tables of random numbers to select a simple random sample
   - Identification of the elements of experiments and observational studies, including
     - Experimental units
     - Factors
     - Placebo
     - Bias
     - Control
     - Replication
     - Randomization
8. Elementary probability theory
   - Terminology, including

    - Experiment
    - Simple event
    - Sample space
    - Disjoint events
    - Independent events
    - Complementary events
    - Law of Large Numbers
  - Calculation and interpretation of marginal, joint, and conditional probabilities
  - Calculation and interpretation of probabilities using
    - Venn diagrams
    - Contingency tables
    - Tree diagrams
    - Additive rule
    - Multiplicative rule
  - Calculation and interpretation of conditional probabilities using Bayes' Rule
9. Random variables
  - Terminology, including
    - Random variable
    - Probability distribution
    - Expected value
    - Variance
    - Standard deviation
    - Probability density function
  - Discrete and continuous random variables
  - Binomial probability distributions
  - Normal probability distributions
  - Normal approximations to binomial distributions
  - Use of technology to
    - Input a probability density function
    - Compute and interpret the probability that a discrete random variable is equal to a specified value.
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    - Compute and interpret the probability that a continuous random variable lies within an interval of values.
    - Simulate probability distributions by generating random data.
  - Compute and interpret mean and standard deviation for
    - A discrete random variable
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  - Calculation and interpretation of a sample mean and its standard deviation
  - The sampling distribution of a statistic
  - Properties of sampling distributions
  - Properties of the sampling distribution of the mean
  - Central Limit Theorem.
11. Estimation
  - Terminology, including
    - Point estimator
    - Confidence level
    - Confidence interval
  - Calculation and interpretation of large-sample estimators of a population means, counts, and proportions
  - Sample size calculations to attain a desired margin of error and confidence level.

12. Significance testing
    - Terminology, including
        - Null hypothesis
        - Alternative hypothesis, one-sided and two-sided
        - Significance level
        - P-value
        - Statistical significance
    - Methods and interpretation of results, including
        - Specification of an appropriate parameter of interest
        - Verification of required conditions for the test of significance
        - Identification, production of data, and set up a basic significance test
        - Computation of P-values using technology or tables of distribution values
        - Assessment of significance tests for predetermined significance levels
        - Distinction between statistical versus practical significance.
    - Comparison of information from confidence intervals and significance tests

Department Notes

This is the first term of a two-term sequence (MTH 243 and 244). This course is intended to provide an introduction to statistics in a data-based setting.

CC date _____
CC decision _____
CC vote _____

Columbia Gorge Community College

New Course
Lower Division Collegiate (LDC)

(Double click on check boxes to activate dialog box)

SECTION #1 GENERAL INFORMATION

Department:	Mathematics	Submitter name: phone: email:	Pam Morse/Abel Wolman pmorse@cgcc.edu awolman@cgcc.edu
Prefix and Course Number:	MTH 243L	Credits:	1
Course Title: (60 characters max, including spaces)	Foundations of Statistics	Transcript Title: (30 characters max, including spaces)	Foundations of Statistics
May this course be repeated for credit? ☐ Yes ☒ No	For how many times total?	Contact hours	Lecture: 0 Lec/lab: 0 Lab: 33
Reason for the new course	co-requisite support for math pathways		

GRADE OPTIONS: Check as many or as few options as you'd like. **Choose the default grade option** which will automatically be assigned for students who do not make a grade option choice when registering for classes.

	Check all that apply	Default (Choose one)
A-F (letter grade)	☒	☒
Pass/No pass	☒	☐
Audit in consultation with faculty	☐	☐

Is this course equivalent to another? If yes, they must have the same description and outcomes.	☐ Yes ☒ No	Course Number and Title

SECTION #2 REQUISITES: PLACEMENT INTO, PRE, CO AND CONCURRENT

Note: if this course is requesting approval for the Gen Ed list, it will have, as a default, the following standard requisites: Prerequisite: MTH 20 or equivalent placement test scores. Prerequisite/concurrent: WR 121. Higher levels of any of these prerequisites, or additional prerequisites can be requested. However, if the department wants to set the RD, WR and/or MTH prerequisites at a lower level, you will need to use the Prerequisite Opt-out form available on the Curriculum website.

☐ Standard requisites – Prerequisite: MTH 20 or equivalent placement test scores.
Prerequisite/concurrent: WR 121.

☐ Placement into:		☐ Placement into:		
course prefix & number:	MTH 243	☐ Prerequisite	☒ Corequisite	☐ pre/co
course prefix & number:		☐ Prerequisite	☐ Corequisite	☐ pre/co
course prefix & number:		☐ Prerequisite	☐ Corequisite	☐ pre/co

SECTION #3 COURSE DESCRIPTION, OUTCOMES, AND CONTENT

COURSE DESCRIPTION: To be used in the catalog and schedule of classes. Begin each sentence of the course description with an active verb. Avoid using the phrases: "This course will …" and/or "Students will …" Include course requisites in the description. Guidelines for writing concise descriptions can be found at Writing Course Descriptions.

Focuses on the foundational skills, concepts, and communication needed to be successful in MTH 243 Statistics I. Provides appropriate support in arithmetic skills, algebra skills, technology, and study skills in an interactive setting.

LEARNING OUTCOMES: Describe what the student will be able to do "out there" (in their life roles as worker, family member, community citizen, global citizen or lifelong learners). Outcomes must be measurable through the application of direct and/or indirect assessment strategies. Three to six outcomes are recommended. Start each outcome with an active verb, completing the sentence starter provided. (See Writing Learning Outcomes on the curriculum website.)

Outcomes: (Use observable and measurable verbs)	Upon successful completion of this course, students will be able to: 1. Demonstrate relevant skills to effectively engage with the concepts and skills needed in MTH 243 2. Utilize study habits and learning strategies that promote success in MTH 243 3. Analyze, communicate, and interpret results in context
Outcomes assessment strategies:	Quizzes, reflections, lab assessments, projects

COURSE CONTENT, ACTIVITIES AND DESIGN

Activity & Design: The determination of teaching strategies used in the delivery of outcomes is generally left to the discretion of the instructor. On occasion, a department may decide that the inclusion of a particular strategy will be required (specify in "required activities" box below). For example, a department may determine that a course will be required to incorporate a service learning project into its curriculum delivery. However, for the most part, delivery mechanisms fall under academic freedom and so the individuality and creativity of each instructor.
Here are some strategies that you might consider when designing your course: lecture, small group/forum discussion, flipped classroom, dyads, oral presentation, role play, simulation scenarios, group projects, service learning projects, hands-on lab, peer review/workshops, cooperative learning (jigsaw, fishbowl), inquiry based instruction, differentiated instruction (learning centers), graphic organizers, etc.

Department required course activities (optional):	
Course Content – organized by outcomes (list each outcome followed by an outline of the related content):	**Outcome #1:** Demonstrate relevant skills to effectively engage with the concepts and skills needed in MTH 243. 1. Arithmetic Skills a. Operations with integers, fractions, and decimals b. Percentages c. Order of operations 2. Algebra skills a. Solving equations b. Simplifying expressions c. Summation (Sigma) notation d. Function notation e. Inequalities

3. Cartesian coordinate system
    a. Scales
    b. Plotting points
    c. Slopes and intercepts
    d. Linear equations
    e. Interpreting graphs
4. Geometry skills
    a. Area
    b. Measurement
5. Logic skills
    a. Propositional logic
    b. Proof by contradiction
6. Technology skills
    a. Graphing calculator
    b. Statistical programming language

Outcome #2: Utilize study habits and learning strategies that promote success in MTH 243.

1. Problem solving skills
    a. Reading strategies for comprehension
    b. Categorizing information
    c. Writing equations: translating words into equations
    d. Interpreting results
2. Study skills
    a. Affective domain
    b. Test taking strategies
    c. Reading a textbook for comprehension
    d. Note taking
3. Technology skills
    a. Graphing calculator
    b. Statistical programming language
    c. On-line Learning Management Systems (e.g., on-line homework, Moodle)

Outcome #3: Analyze, communicate, and interpret results in context.

1. Arithmetic Skills
    a. Operations with integers, fractions, and decimals
    b. Percentages
    c. Order of operations
2. Algebra skills
    a. Solving equations
    b. Simplifying expressions
    c. Summation (Sigma) notation
    d. Function notation
    e. Inequalities
3. Cartesian coordinate system
    a. Scales
    b. Plotting points
    c. Slopes and intercepts
    d. Linear equations
    e. Interpreting graphs
4. Geometry skills
    a. Area
    b. Measurement
5. Logic skills

	a. Propositional logic b. Proof by contradiction 6. Technology skills a. Graphing calculator b. Statistical programming language 7. Problem solving skills a. Reading strategies for comprehension b. Categorizing information c. Writing equations: translating words into equations d. Interpreting results
Suggested Texts & Materials (specify if any texts or materials are required):	Introduction to the Practice of Statistics, 7e (free from the CGCC Library) MyOpenMath software/LMS
Department Notes: (optional)	

SECTION #4 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 requires us to certify that at least one Oregon university will accept our new LDC course in transfer. To ensure the quality of our transfer programs and to provide students with the best information on how individual courses will transfer, we require faculty to ascertain the transferability of a proposed course by communicating with colleagues at a minimum of three Oregon universities, asking the following 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? While you may contact any Oregon university, we recommend, based on CGCC student transfer history, that you conduct transferability screening with OSU, PSU and EOR as these are the more common destinations of CGCC transfer students. 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 Oregon universities will the course transfer to? List all	UofO, EOU, PSU
How does it transfer? Check all that apply	☐ Required or support for major ☐ General education distribution requirement ☒ General elective ☐ Other (provide details)
Provide evidence of transferability from three or more universities. Recommended universities based on CGCC transfer history: OSU, PSU and EOU	☒ Completed Transferability/Articulation of Individual CGCC Courses form ☐ Other - describe
Identify comparables at Oregon community colleges; list college, course prefix, number and title.	
Are special designations being sought at this time?	☐ General Education – Discipline specific Gen Ed form required. ☐ Cultural Literacy – Cultural Literacy designation request form required. (Cultural Literacy designation requires that the course has a Gen Ed designation.)

SECTION #5 ADDITIONAL INFORMATION FOR NEW LDC COURSES		
Is this course in a degree or certificate as required, an elective or a prerequisite? Please provide details.		
Name of certificate(s):		# credits:
Name of degree(s):		# credits:
Briefly explain how this course fits into the above program(s), i.e. requirement or elective:	Students will be placed into this course based on multiple measures. The targeted audience will be: 1. students out of high school 1 - 5 years 2. students who scored a "c" in their preceding math course ie. Math 95, 98, 105, or 111	
Impact on other Programs and Departments		
Are there similar courses existing in other programs or disciplines at CGCC? If yes, explain and/or describe the nature of acknowledgements and/or agreements that have been reached.	Yes – This course is being created as an additional pathway for students. By offering this course as a co-requisite, students can have the potential for more success in MTH 243.	
Have you consulted with the Department Chair(s) of other program(s) regarding potential impact such as content overlap, duplication, prerequisites, enrollment impact etc. Explain and/or describe the nature of acknowledgements or agreements reached.	The math department chair acknowledges that multiple measures will be used to properly place students in MTH 243L. This may reduce the number of students flowing through the MTH 60, 65, 95 sequence. This sequence will not go away. Many of the current degrees only need 65 or 95 and those students will not need to take Math 243.	
Has the Library director been notified regarding the addition of this course and the need for any potential resources?	☒ Yes – date: 2/25/2022 ☐ No	
Implementation term:	☒ Start of next academic year (summer term) ☐ Specify term (if BEFORE start of next academic year):	
Allow 1-2 months to complete the new course approval process before the course can be scheduled. The Curriculum Office will notify the submitter, department chair, and department director when the course has completed the approval process and is available to be scheduled. Curriculum changes generally go into effect at the beginning of the next academic year (summer term). Mid-year revisions/additions are discouraged but accommodated when possible if there is a specific, identifiable need.		

SECTION #6 DEPARTMENT REVIEW		
"I vouch that this submission has been reviewed by the affiliated department chair and department dean and that they have given initial authorization for this submission. I am requesting that it be placed on the next Curriculum Committee agenda with available time slots. I understand that I am required to complete and submit, prior to the day my submission is reviewed by the Curriculum Committee, a Course Signature Form signed by the department chair and dean."		
Submitter	Email	Date
Pam Morse	pmorse@cgcc.edu	2/25/2022
Department Chair (enter name of department chair): Pam Morse		
Department Dean (enter name of department dean): Rebecca Schwartz		

Transfer/Articulation of Individual CGCC Courses

Directions:
Complete this form with all applicable information and as much detail as possible. Include any communication (letters, email strings, phone transcripts) you've had with faculty/staff at the Oregon universities. When you have finished, e-mail this as an attachment to the Curriculum Office at: curriculum@cgcc.edu or slewis@cgcc.edu.

In order to obtain a General Education designation, at least three Oregon universities must confirm the course will transfer and one of the schools must approve the transfer as General Education. While it is not mandatory, we highly recommend that the three universities that you contact are Portland State University (PSU), Oregon State University (OSU), and Eastern Oregon University (EOU) as these are the most common transfer destinations of CGCC students.

Course #: MTH243L Title: Foundations of Statistics

Credits: 1 Total Contact Hours: Lec: _____ Lab: 33 Lec-Lab: _____

Course Description:
Focuses on the foundational skills, concepts, and communication needed to be successful in MTH 243 Statistics I. Provides appropriate support in arithmetic skills, algebra skills technology, and study skills in an interactive setting. Co-req MTH243

Course Prerequisites:
MTH 95 or MTH 98 or equivalent placement test scores. Prerequisite/concurrent: WR 121.

This course will be accepted in transfer as counting towards:(please check all that apply, identify receiving university, and provide details)

- ☐ Gen Ed/Distribution req. in: (Arts & Letters, Social Science, Science/Computer Science, Math)_____
- ☐ Requirement in major: (list major)_____
- ☐ Elective for major: (list major)_____
- ☐ Course Equivalency: (list comparable courses; identify univ.)_____
- ☐ Other: _____
- ☒ Elective only

Rationale, college/university departments contacted, etc., in support of requested transfer status (**include contact names and titles, times and dates of conversations/emails, and be specific documenting agreements/understandings; include attachments to verify documentation as needed**):
This is a support class for MTH 243. This course is new and CGCC is one of the first schools in the state to offer the co-requisite. See attached for OSU and EOU and PSU

Based on my conversations with faculty and/or staff at Oregon universities, I verify that to the best of my knowledge, this course will transfer as noted above.

Signature: Pam Morse Date 2/25/2022

Printed Name: Pam Morse Title: Department Chair/Instructor

Department: Mathematics E-mail: pmorse@cgcc.edu

COLUMBIA GORGE COMMUNITY COLLEGE

Pam Morse <pmorse@cgcc.edu>

New Course Transferability

3 messages

Pam Morse <pmorse@cgcc.edu> Fri, Feb 18, 2022 at 9:48 AM
To: Brooke Hewitt <bhewitt@eou.edu>

Good Morning.

My team here at CGCC is in the process of creating a corequisite course for Math 243. I am attaching the course description and outcomes. Will this course transfer as an elective course? If not, what do we need change in order for it to transfer?

Thank you for time and consideration,
Pam Morse
Chair Math Dept.
Mathematics Instructor
541-308-8218
541-645-0512 (cell/text)
https://cgcc.zoom.us/j/5704017360 (zoom conferencing by appt.)
https://www.cgcc.edu/patricia-pam-morse

"Learning is a treasure that will follow its owner everywhere" - Chinese Proverb

Math isn't just about numbers, it's about any kind of abstract object that has properties we can reason about.

Foundations of Statistics cog.docx
18K

Brooke Hewitt <bhewitt@eou.edu> Tue, Feb 22, 2022 at 8:51 AM
To: Pam Morse <pmorse@cgcc.edu>

Course will come in as MTH LDT Foundations of Statistics*SMI, will have 1 credit of gen ed, count outside of 90 needed for graduation for non math majors, and towards the 180 for everyone.

Thanks!

Brooke Hewitt, MBA
Transfer Articulation Specialist
541-962-3936 | bhewitt@eou.edu

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> [Quoted text hidden]

error, please notify the sender immediately.

Pam Morse <pmorse@cgcc.edu> Tue, Feb 22, 2022 at 8:54 AM
To: Brooke Hewitt <bhewitt@eou.edu>

Thank you so much.

Pam Morse
Chair Math Dept.
Mathematics Instructor
541-308-8218
541-645-0512 (cell/text)
https://cgcc.zoom.us/j/5704017360 (zoom conferencing by appt.)
https://www.cgcc.edu/patricia-pam-morse

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COLUMBIA GORGE COMMUNITY COLLEGE

Pam Morse <pmorse@cgcc.edu>

New Course Transferability

3 messages

Pam Morse <pmorse@cgcc.edu> Fri, Feb 18, 2022 at 9:47 AM
To: RO Articulation <articulation@pdx.edu>

Good Morning.

My team here at CGCC is in the process of creating a corequisite course for Math 243. I am attaching the course description and outcomes. Will this course transfer as an elective course? If not, what do we need change in order for it to transfer?

Thank you for time and consideration,
Pam Morse
Chair Math Dept.
Mathematics Instructor
541-308-8218
541-645-0512 (cell/text)
https://cgcc.zoom.us/j/5704017360 (zoom conferencing by appt.)
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Foundations of Statistics cog.docx
18K

RO Articulation <articulation@pdx.edu> Mon, Feb 21, 2022 at 4:05 PM
To: Pam Morse <pmorse@cgcc.edu>

Hi Pam,

This class will transfer to PSU as GEN LD. It will only count towards the 180 credits needed for the degree.

Thanks,
Suzanne

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> [Quoted text hidden]
>
>

Pam Morse <pmorse@cgcc.edu> Mon, Feb 21, 2022 at 4:07 PM
To: RO Articulation <articulation@pdx.edu>

Thank you!

Pam Morse
Chair Math Dept.
Mathematics Instructor
541-308-8218
541-645-0512 (cell/text)
https://cgcc.zoom.us/j/5704017360 (zoom conferencing by appt.)
https://www.cgcc.edu/patricia-pam-morse

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COLUMBIA GORGE COMMUNITY COLLEGE

Pam Morse <pmorse@cgcc.edu>

[External] RE: New Course Transferability

3 messages

Shelly Ehlers <sehlers@uoregon.edu> Fri, Feb 18, 2022 at 1:53 PM
To: "pmorse@cgcc.edu" <pmorse@cgcc.edu>

Good afternoon Pam,

Thanks so much for reaching out to the Registrar's Office. Here is how this course will transfer to the University of Oregon:

Columbia Gorge Community College 041519

MTH 243L = MATH 2AAT Math 200 level course (elective credit)

Do you know what when this course will be offered? Feel free to reach out again if you have any further questions or concerns regarding this matter. Happy Friday!

Sincerely,

Shelly

Shelly Ehlers

Transfer Program Coordinator

Office of the Registrar

UNIVERSITY OF OREGON

From: Pam Morse <pmorse@cgcc.edu>
Sent: Friday, February 18, 2022 12:51:59 PM
To: UO Transfer Credits <transfercredits@uoregon.edu>

Good Morning.

My team here at CGCC is in the process of creating a corequisite course for Math 243. I am attaching the course description and outcomes. Will this course transfer as an elective course? If not, what do we need change in order for it to transfer?

Thank you for time and consideration,

Pam Morse

Chair Math Dept.

Mathematics Instructor

541-308-8218

541-645-0512 (cell/text)

https://cgcc.zoom.us/j/5704017360 (zoom conferencing by appt.)

https://www.cgcc.edu/patricia-pam-morse

"Learning is a treasure that will follow its owner everywhere" - Chinese Proverb

Math isn't just about numbers, it's about any kind of abstract object that has properties we can reason about.

Pam Morse <pmorse@cgcc.edu> Fri, Feb 18, 2022 at 2:06 PM
To: Shelly Ehlers <sehlers@uoregon.edu>

That is great news! We are hoping to start offering this course Fall of 2022.

Pam Morse
Chair Math Dept.
Mathematics Instructor
541-308-8218
541-645-0512 (cell/text)
https://cgcc.zoom.us/j/5704017360 (zoom conferencing by appt.)
https://www.cgcc.edu/patricia-pam-morse

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Math isn't just about numbers, it's about any kind of abstract object that has properties we can reason about.

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Shelly Ehlers <sehlers@uoregon.edu> Fri, Feb 18, 2022 at 2:16 PM
To: Pam Morse <pmorse@cgcc.edu>