



**Clackamas Community College
Associate of Science in Engineering
to
Oregon Institute of Technology
Bachelor of Science in Renewable Energy Engineering**

**Articulation Agreement
2019 - 2020 Catalog**

It is agreed that students transferring with Clackamas Community College's (CCC) Associate of Science in Engineering to Oregon Institute of Technology's (Oregon Tech) Bachelor of Science in Renewable Energy Engineering (BREE) program will be given full credit for all selected courses listed below. This agreement is based on the evaluation of the rigor and content of the general education and technical courses at both CCC and Oregon Tech, and is subject to a yearly reevaluation by both schools for continuance. This agreement is dated April 7, 2020.

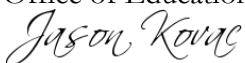
Baccalaureate students must complete a minimum of 60 credits of upper-division work before a degree will be awarded. Upper-division is defined as 300- and 400-level classes at a bachelor's degree granting institution. Baccalaureate students at Oregon Tech must complete 45 credits from Oregon Tech before a degree will be awarded.

Admission to Oregon Tech is not guaranteed. Students must apply for admission to Oregon Tech in accordance with the then-existing rules, policies and procedures of Oregon Tech. Dual Enrollment is possible according to an existing Memorandum of Understanding. Students are responsible for notifying the Oregon Tech Admissions and Registrar's Office when operating under an articulation agreement to ensure their credits transfer as outlined in this agreement. In order to utilize this agreement students must be attending CCC during the above catalog year. Students must enroll at Oregon Tech within three years of this approval.

Clackamas Community College

 06/15/2020

Jaime Clarke, Director
Office of Education Partnerships

 06/16/2020


Jason Kovac, Dean
Institutional Effectiveness and Planning

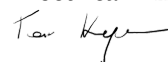
 06/23/2020


David Plotkin, Vice President
Instruction and Student Services

Oregon Institute of Technology

 05/18/2020

Carleen Drago Starr, Director
Educational Outreach and Partnerships
 06/10/2020

Hope Corsair, Department Chair
Electrical Engineering and Renewable Energy
 06/10/2020

Tom Keyser, Dean
College of Engineering, Technology, and Management
 06/13/2020

Wendy Ivie
University Registrar

Clackamas Community College Degree Courses & Oregon Tech Equivalent Credits

Clackamas Community College Course Number & Title	Qtr. Units	Oregon Institute of Technology Course Number & Title	Qtr. Units
CH 221 - General Chemistry	5	Satisfies CHE 201/204 Requirement: CHE 221 - General Chemistry I	4
CH 222 - General Chemistry	5	Satisfies CHE 202/205 Requirement: CHE 222 - General Chemistry II	4
COMM 111 - Public Speaking	4	SPE 111 - Public Speaking	3
EC 201 - Principles of Economics: Micro or EC 202 - Principles of Economics: Macro	4	ECO 201 - Principles of Microeconomics or ECO 202 - Principles of Macroeconomics	3
ENGR 111 - Introduction to Engineering or RET 200 - Renewable Energy Systems	3 or 4	Satisfies REE 201 requirement: ENGR 101 - Introduction to Engineering I ENGR 102 - Introduction to Engineering II	4
ENGR 211 - Statics	4	ENGR 211 - Engineering Mechanics: Statics	4
ENGR 221 - Electrical Circuit Analysis	4	EE 221 - Circuits I	4
ENGR 222 - Electrical Circuit Analysis II	4	EE 223 - Circuits II	4
ENGR 223 - Electrical Circuit Analysis III	4	EE 225 - Circuits III	4
Humanities ²	6	Humanities Elective ²	6
MTH 251 - Calculus I	5	MATH 251 - Differential Calculus	4
MTH 252 - Calculus II	5	MATH 252 - Integral Calculus	4
MTH 254 - Vector Calculus	5	MATH 254 - Vector Calculus I	4
MTH 256 - Differential Equations	4	MATH 321 - Applied Differential Equations I ³	4
MTH 261 - Linear Algebra	4	MATH 341 - Linear Algebra ³	4
PH 211 - General Physics with Calculus	5	PHY 221 - General Physics with Calculus	4
PH 212 - General Physics with Calculus	5	PHY 222 - General Physics with Calculus	4
PH 213 - General Physics with Calculus	5	PHY 223 - General Physics with Calculus	4
Social Science ⁴	6	Social Science Elective ⁴	6
WR 121 - English Composition	4	WRI 121 - English Composition	3
WR 122 - English Composition	4	WRI 122 - Argumentative Writing	3
WR 227 - Technical Report Writing	4	WRI 227 - Technical Report Writing	3
Total CCC Degree Credits ¹	99-100	Total Oregon Tech Degree Credits	87

Courses not required for Clackamas Community College's AS in Engineering but are required for Oregon Tech's BS in Renewable Energy Engineering and can be taken at CCC or Oregon Tech.

[Partner Institution] Course Number & Title	Qtr. Units	Oregon Institute of Technology Course Number & Title	Qtr. Units
COMM 219 - Small Group Communication	4	SPE 321 - Small Group & Team Communication ³	3
MTH 243 - Statistics I MTH 244 - Statistics II Must take both	8	MATH 361 - Statistical Methods I ³	4
Humanities Elective ²	3	Humanities Elective ²	3
Additional CCC Degree Credits ¹	15	Additional Oregon Tech Degree Credits	10
Total CCC Degree Credits ¹	114-115	Total Oregon Tech Degree Credits	97

In addition to the above courses, the courses listed below are also required for the BS in Renewable Energy Engineering and should be completed at Oregon Tech.

Oregon Institute of Technology Course Number & Title	Qtr. Units
CHE 260 - Electrochemistry for Renewable Energy Applications	4
EE 321 - Electronics I	5
EE 419 - Power Electronics	4
EE 461 - Control System Engineering	4
ENGR 267 - Engineering Programming	3
ENGR 355 - Thermodynamics	3
ENGR 465 - Capstone Project	6
HIST 356 - A History of Energy or HIST 357 - History of the Electrical Grid	3
MECH 318 - Fluid Mechanics I or ENGR 318 - Engineering Mechanics: Fluids	4
MECH 323 - Heat Transfer I	3
REE XXX - Thermal Energy Elective	3
REE 243 - Electrical Power	4
REE 253 - Electromechanical Energy Conversions	3
REE 3XX - Hydro Energy Elective	3
REE 331 - Fuel Cells	3

REE 337 - Materials for RE Applications or EE 343 - Solid-State Electronic Devices	3
REE 412 - Photovoltaic Systems	3
REE 413 - Electrical Power Conversion Systems	3
REE 42X - Global Energy Issues Elective	3
REE 463 - Energy Systems Instrumentation	3
REE 4XX - Senior Sequence	9
Renewable Energy Engineering Electives	6
Upper Division Writing Elective - choose from: WRI 327 - Advanced Technical Writing WRI 350 - Document Documentation WRI 410 - Proposal and Grant Writing	3
Additional Oregon Tech Credits ⁵	91
Total Oregon Tech Degree Credits ⁶	185

1. Excess credits will transfer to Oregon Tech as general elective credit with the exception of developmental course work; these credits will not be used toward the BREE.
2. Students can transfer up to nine (9) credit hours of Humanities electives into the BREE; these courses should be designated as Humanities electives by Oregon Tech. However, only three (3) humanities credits can be studio/performance based. Choose from the following CCC prefixes: ART, ENG, HUM, MUS, PHL, R, TA, or Languages (second year/200-level only).
3. Does not count toward the 60 upper-division credit requirement.
4. Students can transfer up to six (6) credit hours of Social Science electives into the BREE; these courses should be designated as Social Science elective by Oregon Tech. Choose from the following CCC prefixes: ANT, EC, GEO, HST, PS, PSY, or SOC.
5. Baccalaureate students must complete a minimum of 60 credits of upper-division work before a degree will be awarded. Upper-division is defined as 300- and 400- level classes at a bachelor's degree granting institution.
6. Oregon Tech's BREE requires 184-185 credits.