



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

**Articulation Agreement  
2021 - 2022 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 Mechanical Engineering 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 July 7, 2021.

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

DocuSigned by: 1/20/2022  
*Amy Cannata*

Amy Cannata, Interim Director  
Office of Education Partnerships

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Jason Kovac, Dean  
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Oregon Institute of Technology

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Carleen Drago Starr, Director  
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Tom Keyser, Dean  
College of Engineering, Technology, and Management

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*Wendy Ivie*

Wendy Ivie  
University Registrar

### Clackamas Community College Degree Courses & Oregon Tech Equivalent Credits

| Clackamas Community College<br>Course Number & Title   | Qtr.<br>Units | Oregon Institute of Technology<br>Course Number & Title   | Qtr.<br>Units |
|--|---------------|---|---------------|
| CDT 103 - Computer-Aided Drafting I  | 3             | MET 241 - CAD for Mechanical Design I   | 2             |
| CH 221 - General Chemistry   | 5             | Satisfies CHE 201/204 requirement:<br>CHE 221 - General Chemistry I   | 4             |
| CH 222 - General Chemistry   | 5             | Satisfies CHE 202/205 requirement:<br>CHE 222 - General Chemistry II  | 4             |
| COMM 111 - Public Speaking   | 4             | SPE 111 - Public Speaking   | 4             |
| <b>Choose:</b><br>EC 201 - Principles of Economics: Micro<br>or<br>EC 202 - Principles of Economics: Macro | 4             | Satisfies Economics Elective:<br>ECO 201 - Principles of Microeconomics<br>or<br>ECO 202 - Principles of Macroeconomics | 3             |
| ENGR 111 - Introduction to Engineering   | 3             | Elective <sup>1</sup>   | --            |
| ENGR 112 - Engineering Programming   | 3             | Elective <sup>1</sup>   | --            |
| ENGR 201 - Electrical Fundamentals   | 4             | Elective <sup>1</sup>   | --            |
| ENGR 211 - Statics   | 4             | ENGR 211 - Engineering Mechanics: Statics   | 4             |
| ENGR 212 - Dynamics  | 4             | ENGR 212 - Engineering Mechanics: Dynamics  | 3             |
| ENGR 213 - Strength of Materials   | 4             | ENGR 213 - Engineering Mechanics: Strength of<br>Materials  | 4             |
| ENGR 231 - Properties of Materials   | 4             | Elective <sup>1</sup>   | --            |
| Humanities (Arts and Letters) <sup>2</sup>   | 3             | Humanities Elective <sup>2</sup>  | 3             |
| 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 <sup>3</sup>  | 4             |
| MTH 261 - Linear Algebra   | 4             | MATH 341 - Linear Algebra I <sup>3</sup>  | 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 <sup>4</sup>  | 3             | Social Science Elective <sup>4</sup>  | 3             |
| WR 121 - English Composition   | 4             | WRI 121 - English Composition   | 4             |
| WR 227 - Technical Report Writing  | 4             | WRI 227 - Technical Report Writing  | 4             |
| <b>Total CCC Degree Credits <sup>1</sup></b>   | <b>99</b>     | <b>Total Oregon Tech Degree Credits</b>   | <b>74</b>     |

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

| Clackamas Community College<br>Course Number & Title  | Qtr.<br>Units | Oregon Institute of Technology<br>Course Number & Title                            | Qtr.<br>Units |
|---|---------------|--|---------------|
| COMM 219 - Small Group Communication  | 4             | SPE 321 - Small Group and Team Communication <sup>3</sup>                          | 3             |
| MFG 106 - Advanced Applied Geometric Dimensioning and Tolerancing for Manufacturing<br>Must be at least 3 credits | 3             | MFG 314 - Geometric Dimensioning and Tolerancing <sup>3</sup>                      | 3             |
| MFG 112 - Machine Tool Fundamentals II<br>Must be at least 4 credits  | 4             | MFG 120 - Manufacturing Processes I  | 4             |
| MTH 243 - Statistics I<br>MTH 244 - Statistics II<br>Must take both   | 8             | Satisfies Statistics Requirement:<br>MATH 361 - Statistical Methods I <sup>3</sup> | 4             |
| Social Science Elective <sup>4</sup>  | 6             | Social Science Elective <sup>4</sup>   | 6             |
| WLD 150 - Welding Processes   | 4             | MFG 103 - Introductory Welding   | 3             |
| <b>Additional CCC Degree Credits <sup>1</sup></b>   | <b>29</b>     | <b>Additional Oregon Tech Degree Credits</b>                                       | <b>23</b>     |
| <b>Total CCC Degree Credits <sup>1</sup></b>  | <b>128</b>    | <b>Total Oregon Tech Degree Credits</b>  | <b>97</b>     |

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

| Oregon Institute of Technology<br>Course Number & Title   | Qtr.<br>Units |
|---|---------------|
| ENGR 111 - MMET Orientation   | 2             |
| ENGR 236 - Fundamentals of Electric Circuits  | 3             |
| ENGR 266 - Engineering Computation  | 3             |
| ENGR 326 - Electric Power Systems   | 3             |
| ENGR 355 - Thermodynamics   | 3             |
| ENGR 491 - MMET Senior Projects I   | 3             |
| ENGR 492 - MMET Senior Projects II  | 3             |
| ENGR 493 - MMET Senior Projects III   | 3             |
| <b>Fluid Mechanics II Requirement</b><br>MECH 417 - Fluid Mechanics II<br>or<br>MECH 418 - Fluid Mechanics II | 3             |
| HUM 125 - Introduction to Technology, Society and Values  | 3             |
| MATH 451 - Numerical Methods I  | 4             |
| MECH Elective <sup>5</sup>  | 12            |

|  |            |
|--|------------|
| MECH 260 - Engineering Materials I                   | 3          |
| MECH 313 - Thermodynamics II                         | 3          |
| MECH 315 - Machine Design I                          | 3          |
| MECH 316 - Machine Design II                         | 3          |
| MECH 318 - Fluid Mechanics I                         | 4          |
| MECH 323 - Heat Transfer I                           | 3          |
| MECH 351 - Finite Element Analysis                   | 3          |
| MECH 360 - Engineering Materials II                  | 3          |
| MECH 363 - Engineering Instrumentation               | 3          |
| MECH 436 - Classical Control Systems                 | 3          |
| MECH 437 - Heat Transfer II                          | 2          |
| MECH 480 - Mechanical Vibrations                     | 3          |
| MET 242 - CAD for Mechanical Design II               | 2          |
| MET 375 - Solid Modeling                             | 3          |
| MGT 345 - Engineering Economy                        | 3          |
| PHIL 331 - Ethics in Professions                     | 3          |
| WRI 327 - Advanced Technical Writing                 | 3          |
| <b>Additional Oregon Tech Credits <sup>6</sup></b>   | <b>95</b>  |
| <b>Total Oregon Tech Degree Credits <sup>7</sup></b> | <b>192</b> |

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 BME.
2. Students can transfer up to three (3) credit hours of Humanities electives into the BME; these courses should be designated as Humanities electives by Oregon Tech. Activity or performance-based Humanities courses are not accepted. Choose from the following CCC prefixes: ART, ENG, HUM, MUS, PHL, R, or Languages (second year/200-level only).
3. Does not count toward the 60 upper-division credit requirement.
4. Students can transfer up to nine (9) credit hours of Social Science electives into the BME; 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. The BME requires at least twelve (12) MECH Electives, which are upper-division courses and must be taken at Oregon Tech. MET and MFG electives are not acceptable.
6. 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.

7. Oregon Tech's BME requires 192 credits.