



Southwestern Oregon Community College Transfer Guide Bachelor of Science in Engineering Science

Important Note:

Students are encouraged to dually enroll at OSU-Cascades spring term of their second year, to avoid a year delay in the ESE program. ST 314, is only offered spring term and once a year. ST 314 is an important pre-requisite for upper division courses offered fall term of third year. Failure to take ST 314 could result in a year delay in the ESE program.

Transfer Admissions:

osucascades.edu/admissions/admissions-advising

Program Requirements

OSU Graduation Requirement:

Students are required to meet the University Graduation requirements as well as complete course work required for their major to graduate with a Bachelor of Science in Energy Systems Engineering. **All catalog and course selection information is subject to change pending catalog declaration year.* catalog.oregonstate.edu/regulations/#text

- 180 minimum = total number of credits required to graduate
- 60 minimum = number of upper division credits required
- 45 of last 75 credits must be OSU credits
- Max 135 credits transferred to OSU
- Max 18 W grades (withdraw)
- Max 11 credits PAC

College of Engineering Academic Standing

Progression Model

- Grades of C or better and a minimum of 2.50 cumulative OSU GPA
- Maintain 2.50 term and/or cumulative OSU GPA and 65% of courses completed
 - Warning: OSU term GPA is below a 2.50 and/or completion is under 65%
 - Probation: After 24 OSU credits attempted, if both term and cumulative standards are not met
 - Suspension: If on probation and have a subsequent term OSU GPA under 2.50 and/or pace under 65%
- No major courses may be taken with S/U grading.

Academic Progression Model Information: <https://engineering.oregonstate.edu/current-students/advising/progression>

Important Notes:

- **It is the student's responsibility to double check that all requirements are met.** The advisor can suggest courses and assist the student in constructing a plan of study, but the student in the end is responsible for assuring all requirements for graduation are met.
- Degree requirements are subject to change and dependent on catalog year of admission and major declaration.
- MECOP Internship information: www.mecopinc.org/

Students will work with their Academic Advisor and use the Bacc Core approved list for OSU-Cascades to choose courses for the Bacc Core requirements. To find information about Bacc Core or for the approved list, visit: <https://admissions.oregonstate.edu/course-articulations>

Baccalaureate Core:

| x | Skills Requirements | Non-AAOT course | AAOT or ASOT |
|---|---|---------------------------|----------------|
| | Health/Fitness | PE 231 | AAOT completes |
| | Mathematics | MTH 251 in major | AAOT completes |
| | Writing I [^] | WR 121Z in major | AAOT completes |
| | Writing II | WR 227Z in major | AAOT completes |
| | Speech [^] | COMM 111Z/SP 112 in major | AAOT completes |
| x | Perspective Requirements: no more than 2 from 1 department | | |
| | Cultural Diversity | See Bacc Core guide | AAOT completes |
| | Literature & the Arts | See Bacc Core guide | AAOT completes |
| | Social Processes & Institutions | ECON 201 in major | AAOT completes |
| | Western Culture | See Bacc Core guide | AAOT completes |
| | Physical Science | PH 211-213 in major | AAOT completes |
| | Biological Science | See Bacc Core guide | AAOT completes |
| | Additional Science (Physical or Biological) | CHEM 221-222 in major | AAOT completes |
| | Difference, Power & Discrimination | See Bacc Core guide | AAOT completes |
| x | Synthesis Requirements: cannot be from the same department | | |
| | Contemporary Global Issues | OSU Only | OSU Only |
| | Science, Technology & Society | OSU Only | OSU Only |

A student who has completed (or plans on completing) an ASOT-Business or an AAOT has completed all Skills & Perspectives requirements in the Bacc Core. Students still need to complete synthesis courses.

Major Requirements

First & Second year courses: All courses must be completed with a C grade or better

| x | Major Requirement (OSU) | Southwestern Oregon CC Approved Transfer Courses: |
|---|--|---|
| | CH 201: Chemistry for Engineering Majors | CHEM 221: General Chemistry |
| | CH 202/205: Chem. For Engineering Major + Lab | CHEM 222: General Chemistry II |
| | COMM 111Z or 114: Public Speaking or Arg. & Critical Discord | COMM 111Z or SP 112: Public Speaking or Persuasive Speech |
| | CS 162: Intro. to Computer Science II | CS 162: Computer Science II |
| | ECON 201: Intro. to Microeconomics | ECON 201: Microeconomics |
| | ENGR 100: The OSU Engineering Student | ENGR 111: Engineering Orientation |
| | ENGR 102: Design Engineering & Problem Solving | ENGR 245: ENGR Graph/Design |
| | ENGR 103: Engineering Computation & Algorithmic Thinking | CS 161: Computer Science I |
| | ENGR 201: Electrical Fundamentals I | ENGR 201: Electrical Fundamentals I |
| | ENGR 202: Electrical Fundamentals II | ENGR 202: Electrical Fundamentals II |
| | ENGR 203: Electrical Fundamentals III | ENGR 203: Electrical Fundamentals III |
| | ENGR 211: Statics | ENGR 211: Statics |
| | ENGR 212: Dynamics | ENGR 212: Dynamics |
| | MTH 251: Differential Calculus | MTH 251: Calculus I |
| | MTH 252: Integral Calculus | MTH 252: Calculus II |
| | MTH 254: Vector Calculus I | MTH 254: Vector Calculus I |
| | MTH 256: Applied Differential Equations | MTH 256: Differential Equations |
| | MTH 264: Intro to Matrix Algebra | MTH 260: Matrix Methods & Linear Algebra |
| | PH 211: General Physics with Calculus | PH 211: General Physics w/ Calculus |
| | PH 212: General Physics with Calculus | PH 212: General Physics w/ Calculus |
| | PH 213: General Physics with Calculus | PH 213: General Physics w/ Calculus |
| | ST 314: Introduction to Statistics for Engineers | OSU Only |
| | WR 121Z: Composition I | WR 121Z: Composition I |
| | WR 227Z: Technical Writing | WR 227Z: Technical Writing |

Third & Fourth year courses: All courses must be completed with a C grade or better

| x | Major Requirement (OSU) | Southwestern Oregon CC Approved Transfer Courses: |
|--|---|---|
| | ECE 271/272: Digital Logic Design + Lab | OSU Only |
| | ENGR 390: Engineering Economy | OSU Only |
| | ESC 340: Intro. to Experimentation | OSU Only |
| | ESC 350: Engineering Materials | OSU Only |
| | ESC 440: Computational Methods for Engineers | OSU Only |
| | ENGR 415: Engineering Capstone Design I | OSU Only |
| | ENGR 416: Engineering Capstone Design II | OSU Only |
| | ESE 330: Modeling & Analysis of Dynamic Systems | OSU Only |
| | IE 471: Project Management in Engineering | OSU Only |
| | ME 311: Intro. to Thermal-Fluid Sciences | OSU Only |
| Restricted Electives: Selected Courses to meet option requirements (28 credits) | | |

Energy Systems Engineering Option: The Energy Systems Engineering option provides Engineering Science students with the opportunity to focus on the design, processes, and systems used to convert, distribute, and store energy with the 28 CH of required electives listed below.

| x | Major Requirement (OSU) | Southwestern Oregon CC Approved Transfer Courses: |
|---|---|---|
| | ESE 355: Energy Regulation | OSU Only |
| | ESE 430: Feedback Control Systems | OSU Only |
| | ESE 450: Energy Generation Systems | OSU Only |
| | ESE 470: Energy Distribution Systems | OSU Only |
| | ESE 471: Energy Storage Systems | OSU Only |
| | IE 415: Simulation and Decision Support Systems | OSU Only |
| | IE 425: Industrial Systems Optimization | OSU Only |

Choose Your Own Path: Students may also design their own individualize track by taking 28 credits from the list below.

| x | Major Requirement (OSU) | Southwestern Oregon CC Approved Transfer Courses: |
|---|---|---|
| | CS 261: Data Structures | CS 261: Data Structures |
| | CS 290: Web Development | OSU Only |
| | CS 325: Analysis of Algorithms | OSU Only |
| | CS 340: Intro. to Databases | OSU Only |
| | CS 434: Machine Learning & Data Mining | OSU Only |
| | ECE 322: Electronics I | OSU Only |
| | ESE 355: Energy Regulation | OSU Only |
| | ESE 430: Feedback Control Systems | OSU Only |
| | ESE 450: Energy Generation Systems | OSU Only |
| | ESE 470: Energy Distribution Systems | OSU Only |
| | ESE 471: Energy Storage Systems | OSU Only |
| | ESE 499: Special Topics | OSU Only |
| | IE 415: Simulation and Decision Support Systems | OSU Only |
| | IE 425: Industrial Systems Optimization | OSU Only |
| | ME 331: Intro. Fluid Mechanics | OSU Only |
| | ME 332: Heat Transfer | OSU Only |
| | MTH 231: Elements of Discrete Mathematics | MTH 231: Elements of Discrete Math I |

NOTES

* All info is subject to change at catalog policy

All PH courses need to be taken at the same institution