

# ***Engineering***

***at***

## ***Chemeketa Community College***

**[go.chemeketa.edu/engineering](https://go.chemeketa.edu/engineering)**

Engineers play an essential role in the technical building blocks of society. Huge earthmovers, super computers, space probes, lifesaving medical equipment, super efficient power plants, or a modern freeway; engineers are involved in design, construction and operation of new developments and technologies. Engineers are indispensable in almost every area of society.

Chemeketa offers programs that closely follow the first two years of study at many public and private universities. In most cases, students are able to complete the first two years of a Bachelor's of Science Degree in Engineering at Chemeketa before transferring to a university for completion.

In this advising guide, you will find lists of classes that you can take at Chemeketa Community College and then transfer to several different universities as you pursue one of a number of different engineering disciplines.

Questions?

Contact: Halston Tuss, P.E.

[halston.tuss@chemeketa.edu](mailto:halston.tuss@chemeketa.edu)

## **Answers to Important Questions:**

### **How do I know I would like engineering?**

Most engineers enjoy solving problems and helping people. Typical engineers like to plan or design and then build things. Having math and science skills or the willingness to learn these is also important.

### **What classes should I take while at Chemeketa?**

On the following pages you will find several lists of classes that you can take at Chemeketa to complete the first two years of many engineering disciplines before transferring to a variety of universities.

### **What if the kind of engineering I want to study is not listed or available?**

If the following pages do not contain a program of study for the kind of engineering discipline that you want to pursue it may, in many cases, be a simple matter of contacting an engineering advisor (Halston Tuss, P.E. [halston.tuss@chemeketa.edu](mailto:halston.tuss@chemeketa.edu)) to have a curriculum constructed for your particular engineering discipline. If the engineering discipline is not offered at an Oregon university then you might consider an alternative. For example, structural engineering is usually studied as a subcategory of civil engineering. Automotive engineering and robotics are often covered by mechanical or electrical engineering classes depending on the specialty.

### **Do I have to be accepted into the program at Chemeketa?**

No, as long as you are a registered Chemeketa student and meet the class prerequisites you can start taking engineering classes.

### **If I need help with my schedule whom should I talk to?**

Students are strongly encouraged to stay in contact with an engineering advisor at Chemeketa (Halston Tuss, P.E. [halston.tuss@chemeketa.edu](mailto:halston.tuss@chemeketa.edu)) in addition to an advisor at the school where they intend to transfer. See attached pages for contact information. Proper advising is very important because many classes have very restrictive prerequisites and many classes are only offered one time per year.

### **What if I am not ready to start with MTH251?**

Students may start the program with MTH112 in place of MTH251. The student will then have to catch up by taking MTH253 concurrently with MTH256 spring of their second year.

### **What degree do I get at Chemeketa?**

The class lists on the following pages do not, in most cases, satisfy the requirements for any associate degree through Chemeketa. Most engineering students simply transfer credits to the university on the way to a bachelor's degree. Students that want to pursue an associate degree through Chemeketa are encouraged to contact an advisor.

**CHEMEKETA COMMUNITY COLLEGE**  
**classes for transfer to**  
**PORTLAND STATE UNIVERSITY**  
**Transfer Engineering Guide**

**CIVIL ENGINEERING**

**ELEC. ENGINEERING**

**MECH. ENGINEERING**

**ENVIRO. ENGINEERING**

**COMP. ENGINEERING**

	COURSE	CR	COURSE	CR	COURSE	CR	COURSE	CR	COURSE	CR
FALL	CH221	5	CH221	5	CH221	5	CH221	5	CH221	5
	GE101	3	GE101	3	GE101	3	GE101	3	GE101	3
	MTH251	5	HUM or SS		MTH251	5	MTH251	5	HUM or SS	
	HUM or SS		MTH251	5	HUM or SS		HUM or SS		MTH251	5
	DRF130*	3			DRF130*	3	DRF130*	3		
WINTER	CH222	5	GE102	3	CH222	5	CH222	5	GE102	3
	GE102	3	MTH252	5	GE102	3	GE102	3	MTH252	5
	EGR248	3	WR121	4	EGR248	3	EGR248	3	WR121	4
	MTH252	5	HUM or SS		MTH252	5	MTH252	5	HUM or SS	
	WR121	4					WR121	4		
SPRING	COMM111	4	COMM111	4	COMM111	4	COMM111	4	COMM111	4
	MTH253	4	MTH253	4	WR121	4	MTH253	4	MTH253	4
	WR227	4	HUM or SS		HUM or SS		WR227	4		
	HUM or SS		SEE NOTE #5		SEE NOTE #5				SEE NOTE #5	
	SEE NOTE #1		SEE NOTE #1		SEE NOTE #1		SEE NOTE #1		SEE NOTE #1	
FALL	MTH254	5	EGR201	4	EGR201	4	MTH254	5	EGR201	4
	EGR211	4	MTH254	5	MTH254	5	EGR211	4	CS161	4
	PH211	5	PH211	5	EGR211	4	PH211	5	PH211	5
	HUM or SS		CS161	4	PH211	5				
	SEE NOTE #3		SEE NOTE #2				SEE NOTE #3		SEE NOTE #2	
WINTER	EGR212	4	EGR202	4	EGR212	4	EGR212	4	EGR202	4
	PH212	5	PH212	5	PH212	5	PH212	5	PH212	5
	HUM or SS		HUM or SS		HUM or SS		HUM or SS		CS162	4
			CS162	4			SEE NOTE #4			
SPRING	MTH256	4	EGR203	4	MTH256	4	MTH256	4	EGR203	4
	EGR213	4	MTH256	4	EGR213	4	EGR213	4	MTH256	4
	PH213	5	PH213	5	PH213	5	PH213	5	PH213	5

Students are encouraged to contact Halston Tuss, P.E. (halston.tuss@chemeketa.edu) at Chemeketa Community College for individual advising.

Students are encouraged to contact an advisor at PSU (<https://www.pdx.edu/cecs/academic-advising>) as early as possible to learn of any possible changes and deadlines.

\* DRF130 or equivalent is a prerequisite to EGR248.

HUM or SS -->Indicates humanities or social science electives that satisfy the arts and letters requirements for PSU.

NOTE #1 Students that have never used spreadsheets in a technical environment are encouraged to take GE 103.

NOTE #2 Students wanting to become professional engineers are strongly encouraged to take EGR 211 and EGR 212.

NOTE #3 Students wanting to become professional engineers are strongly encouraged to take EGR 201.

NOTE #4 Environmental engineering students need to take BI234 and its prerequisites.

NOTE #5 ME and ECE students will be required to take MTH261 at PSU. For ME, MTH231 is recommended.

**CHEMEKETA COMMUNITY COLLEGE**  
**classes for transfer to**  
**OREGON INSTITUTE of TECHNOLOGY**  
**Transfer Engineering Guide**  
*for*  
**CIVIL ENGINEERING**

	<i>First Year</i>		<i>Second Year</i>	
	COURSE	CR	COURSE	CR
FALL	CH221	4	MTH254	5
	GE101	3	EGR211	4
	MTH251	5	PH211	5
	DRF130	3		
WINTER	CH222	4	PH212	5
	GE102	5	STAT243Z	4
	MTH252	5	HUM or SS	
	WR121	4		
	DRF131	3		
SPRING	COMM111	4	MTH256	4
	GE103	3	EGR213	4
	WR227	4	STAT244	4
	HUM or SS		PH213	5

Students are encouraged to work CVL143 and 144 into their schedules before leaving Chemeketa Community College.

Students are encouraged to contact Halston Tuss, P.E. (halston.tuss@chemeketa.edu) at Chemeketa Community College for individual advising.

Students are encouraged to contact an advisor at OIT as early as possible to make contacts and learn of any possible changes.

HUM or SS - Indicates humanities or social science electives that satisfy the OIT requirements.

**CHEMEKETA COMMUNITY COLLEGE**  
**classes for transfer to**  
**OREGON STATE UNIVERSITY**  
**Transfer Engineering Guide**

	<b>CIVIL</b>	<b>ELECTRICAL &amp; COMPUTER</b>	<b>MECHANICAL</b>	<b>INDUSTRIAL or MANUFACTURING (systems)</b>	<b>ENERGY SYSTEMS</b>	<b>ARCHITECTURAL</b>
	COURSE CR	COURSE CR	COURSE CR	COURSE CR	COURSE CR	COURSE CR
FALL	BI101** 4 CH201 4 GE101 3 MTH251 5 HUM or SS DRF130* 3	BI101** 4 CH201 4 GE101 3 MTH251 5 HUM or SS	BI101** 4 CH201 4 GE101 3 MTH251 5 HUM or SS DRF130* 3	BI101** 4 CH201 4 GE101 3 MTH251 5 HUM or SS DRF130* 3	BI101** 4 CH201 4 GE101 3 MTH251 5 HUM or SS	BI101** 4 CH201 4 GE101 3 MTH251 5 HUM or SS DRF130* 3
WINTER	CH202 4 GE102 3 EGR248 3 MTH252 5 WR121 4	GE102 3 MTH 231 4 MTH252 5 WR121 4 HUM or SS	CH202 4 GE102 3 EGR248 3 MTH252 5 WR121 4	CH202 4 GE102 3 EGR248 3 MTH252 5 WR121 4	CH202 4 GE102 3 MTH252 5 WR121 4 NOTE #4	CH202 4 GE102 3 EGR248 3 MTH252 5 WR121 4
SPRING	COMM111 4 GE103 3 MTH253 5 WR227 4 HPE295 3	COMM111 4 GE103 3 MTH253 5 WR227 4 HPE295 3 HUM or SS	COMM111 4 GE103 3 MTH NOTE WR227 4 HPE295 3	COMM111 4 GE103 3 MTH NOTE HPE295 3 HUM or SS	COMM111 4 GE103 3 MTH253 5 WR227 4 HPE295 3	COMM111 4 GE103 3 MTH253 5 WR227 4 HPE295 3
FALL	MTH254 5 EGR211 4 PH211 5 HUM or SS NOTE #5	EGR201 4 MTH254 5 NOTE #1 PH211 5 CS161 4	EGR201 4 MTH254 5 EGR211 4 PH211 5 HUM or SS	EGR201 4 MTH254 5 EGR211 4 PH211 5	EGR201 4 MTH254 5 EGR211 4 PH211 5 HUM or SS	EGR201 4 MTH254 5 EGR211 4 PH211 5 HUM or SS
WINTER	EGR212 4 PH212 5 DRF220 2 HUM or SS HUM or SS	EGR202 4 MTH255 4 CS162 4 PH212 5 HUM or SS	EGR202 4 EGR212 4 PH212 5 HUM or SS HUM or SS	EGR212 4 PH212 5 HUM or SS NOTE #3	EGR202 4 EGR212 4 PH212 5 HUM or SS HUM or SS	EGR212 4 PH212 5 HUM or SS HUM or SS
SPRING	MTH256 4 EGR213 4 PH213 5 EGR214 3 HUM or SS	EGR203 4 MTH256 4 PH213 5 NOTE #2 CS260 4 HUM or SS	MTH256 4 EGR213 4 PH213 5 EGR214 3 HUM or SS	MTH256 4 EGR213 4 PH213 5 HUM or SS	MTH256 4 PH213 5 EGR214 3 HUM or SS	MTH256 4 EGR213 4 EGR214 3 PH213 5 HUM or SS

Students are encouraged to contact Halston Tuss, P.E. (halston.tuss@chemeketa.edu) at Chemeketa Community College for individual advising or for help with engineering disciplines not shown above.

Students are encouraged to contact an advisor at OSU (<http://enr.oregonstate.edu/>) as early as possible to make contacts and learn of any possible changes.

HUM or SS: Indicates humanities or social science electives that satisfy the Western Culture, Cultural Diversity, Literature and Arts, Social Processes and Institutions and Difference/Power/Discrimination categories in the Perspectives section of OSU's Baccalaureate Core. See the last page of this guide.  
 No more than two courses may be from the same department.

**Mechanical Engineering requires EC 201 or EC 202 for the Social Processes and Institutions category.**

**Civil Engineering, Energy Systems Engineering, and Architectural Engineering require EC 201 for the Social Processes and Institutions category.**

**Architectural Engineering also requires PHL 203 for the Western Culture category.**

NOTE #1 Electrical & Computer Engineering students wanting to become professional engineers or to take classes in Energy Systems, Robotics and Control are strongly encouraged to take EGR 211 and EGR 212.

NOTE #2 Electrical & Computer Engineering students are strongly encouraged to take EGR 214.  
 While the classes will not transfer directly, the material will be foundational for Junior and Senior study.  
 It is also recommended that Electrical & Computer Engineering students take OSU's ECE271 & 272 or an equivalent at another institution to prepare for Junior level study.

NOTE #3 Industrial or Manufacturing Engineering students are encouraged to take OSU's ME250, IE212, ENGR390, IE255 and IE / MFG 285 at OSU before their Junior year.

NOTE #4 Energy Systems Engineering students are encouraged to take OSU's IE212 and BA215 at OSU before their Junior year.

NOTE #5 Civil Engineering students wanting to become professional engineers are strongly encouraged to take EGR201.

MTH NOTE Mechanical and Industrial/Manufacturing Engineering students are encouraged to take OSU's MTH341 before their Junior year.  
 It's prereq is MTH254. It is offered each Summer term at OSU.

\* DRF130 or equivalent is a prerequisite to EGR248.

\*\* To satisfy OSU's Baccalaureate Core. See the last page of this guide.

**classes for transfer to  
OREGON STATE UNIVERSITY  
Transfer Engineering Guide**

	<b>CHEMICAL</b>		<b>ENVIRONMENTAL</b>		<b>BIOENGINEERING</b>	
	COURSE	CR	COURSE	CR	COURSE	CR
FALL	CH221	5	CH221	5	CH221	5
	GE101	3	GE101	3	GE101	3
	MTH251	5	MTH251	5	MTH251	5
	BI101**	4	HUM or SS		BI211***	5
	HPE295	3	HPE295	3	HPE295	3
			DRF130*	3		
WINTER	CH222	5	CH222	5	CH222	5
	GE102	3	GE102	3	GE102	3
	MTH252	5	EGR248	3	MTH252	5
	WR121	4	MTH252	5	WR121	4
	HUM or SS		WR121	4	HUM or SS	
			HUM or SS			
SPRING	COMM111	4	COMM111	4	COMM111	4
	GE103	3	GE103	3	GE103	3
	MTH253	5	MTH253	5	MTH253	5
	WR227	4	WR227	4	WR227	4
	CH223	5	CH223	5	CH223	5
FALL	EGR201	4	HUM or SS		EGR201	4
	MTH254	5	MTH254	5	MTH254	5
	EGR211	4	EGR211	4	EGR211	4
	PH211	5	PH211	5	PH211	5
	CH241	4	CH241	4	CH241	4
	CH241B	1	CH241B	1	CH241B	1
	NOTE #1		NOTE #1		NOTE #1	
					NOTE #2	
WINTER	CH242	4	CH242	4	CH242	4
	CH242B	1	CH242B	1	CH242B	1
	PH212	5	PH212	5	PH212	5
	HUM or SS		EGR212	4	HUM or SS	
	HUM or SS		HUM or SS		HUM or SS	
SPRING	MTH256	4	MTH256	4	MTH256	4
	PH213	5	EGR213	4	PH213	5
	CH243	4	PH213	5	CH243	4
	CH243B	1	CH243	4	CH243B	1
	HUM or SS		CH243B	1	HUM or SS	
	HUM or SS		HUM or SS		HUM or SS	
			NOTE #3			

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NOTE #1 Chemical, Environmental, and BioEngineering all have a sequence of second year classes not offered at Chemeketa. Contact OSU for more details on an online option, CBEE 280.

NOTE #2 It is also recommended that Bio Engineering students take OSU's BI231 and 233 or an equivalent at another institution to prepare for Junior level study. Otherwise full series BI231, BI232, BI233 at Chemkeeta will be required.

\* DRF130 or equivalent is a prerequisite to EGR248.

\*\* To satisfy OSU's Baccalaureate Core. See the last page of this guide.

\*\*\* Completion of or concurrent enrollment in CH221 required for BI211

**CHEMEKETA COMMUNITY COLLEGE**  
**classes for transfer to**  
**OREGON STATE UNIVERSITY**  
**Transfer Engineering Guide**

**Construction Engineering Management**

	<i>First Year</i>		<i>Second Year</i>	
	COURSE	CR	COURSE	CR
FALL	BI101****	4	EGR211	4
	CH201	4	PH211	5
	GE101	3	COMM111	4
	HUM or SS			
	DRF130*			
WINTER				
	GE102	3	PH212	5
	EGR248	3		
	MTH251**	5		
	WR121	4		
SPRING				
	GE103	3	EGR213	4
	MTH252	5	HUM or SS	
	WR227	4	HUM or SS	
	HPE295	3	EGR214	3

In addition to the above classes the following classes will transfer to OSU to help the student prepare themselves for Junior level study. They have not been placed in a particular term as they are offered in a variety of formats and at a variety of times. It is recommended that students take the BA classes in their second year of study after the GE sequence.

EC201  
 EC202  
 PHL203  
 BA211, BA212 and BA213\*\*\*  
 BA226

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\* DRF130 or equivalent is a prerequisite to EGR248.

\*\* Requires a prerequisite of MTH112

\*\*\* The Chemeketa BA211, 212, 213 sequence may be replaced with OSU's BA315 at OSU.

\*\*\*\* To satisfy OSU's Baccalaureate Core. See the last page of this guide.

**Chemeketa Community College - Oregon State University**

**BASIC COURSES REQUIRED FOR ALL DEGREES (Baccalaureate Core Curriculum 2023-2024)**

<b>Requirements</b>	<b>Credit Hrs</b>	<b>Chemeketa Courses Which Satisfy Requirements</b>	<b>Credit Hrs</b>
Writing I	3	WR121 (must be completed before transferring)	3-4
Writing II	3	BA214; JNL216; WR122, 227, 240, 241, 242, 243, 244, 245, 262, 263	3-4
Writing III	3	COMM111, 112, 218, 219	3-4
Mathematics	4-5	MTH105, 111, 112, 211, 241, 251	4-5
Fitness	3	HPE295 Health and Fitness for Life	3
Physical Science w/Lab*	4-5	CH104, 105, 106, 115, 116, 121, 122, 123, 201, 202, 221, 222, 223; GEG105; GEO142, 143, 144, 201, 202, 203; GS104, 106, 107, 108, 141, 142, 143, 151; PH201, 202, 203, 207, 208, 209, 211, 212, 213; SOIL205	4-5
Biological Science w/Lab*	4	BI101, 102, 103, 131, 132, 133, 143, 153, 200, 211, 212, 213, 234	4
Additional Physical or Biological Science class*	4-5	Choose from above options in the above 2 sections	4-5
Western Culture*	3-4	ART204, 205; ENG108, 204, 205, 206, 275; GEG201, 207; HST201, 202, 228, 237; PHL201, 203, 206; REL202, 203	3-4
Cultural Diversity*	3-4	ART201; ATH212, 214, 231; CLA201, 202, 203; ENG245, 257; 202, 220; HST104, 105, 106, 157, 257, 258, 270; HUM220; REL160, 201, 202; SSC100; WS102	3-4
Literature & the Arts*	3-4	ART101, 206; ENG100, 104, 105, 106, 108, 201, 202, 220, 245, 250, 253, 254, 256, 257, 258, 260, 269; FA255, 256, 257; FMS201, 203; MUS105, 161, 201, 202, 203; TA110	3-4
Social Process & Institutions*	3-4	ATH103; EC201, 202; GEG106; HE209; HM210; PS201, 202, 205; PSY100, 201, 202; SOC204, 205	3-4
Difference, Power & Discrimination*	3-4	HST201, 203; HUM221; SOC206, 210, 213	3-4

\*No more than two courses from the same department may be used to fulfill this group of requirements.

**STUDENTS ENTERING OSU WHO HAVE EARNED AN ASSOCIATE OF ARTS OREGON TRANSFER DEGREE FROM CHEMEKETA WILL BE CONSIDERED TO HAVE MET OSU'S LOWER DIVISION BACCALAUREATE CORE CURRICULUM REQUIREMENTS.**

Students graduating from high school in 1997 or after must have completed two years of the same foreign language in high-school with a C or better or two terms of the same college-level second language or demonstrate proficiency to be admitted.