MECHANICAL ENGINEERING TRANSFER, AS
OIT ADVISING GUIDE

Prerequisites and Course Availability per Term

(for complete information, see 2016-2017 UCC Catalog)   **REVISED 01/02/17**

Term	UCC Course No. and Course Name		F	W	S	S	Credits	Prerequisites/Notes	OIT Course No.	Credits
Term 1	CH 221	General Chemistry I /Lec/Lab/Rec	x				5	MTH 111	CHE 201/204 General Chemistry and Lab	4
	ENGR 111	Engineering Orientation I	x				3	MTH 65	ENGR 111 MMET Orientation	2
	MTH 251	Calculus I	x	x			5	MTH 112	MTH 251	4
	DRF 112	CAD I	x				3		MTE 241 CAD for Mechanical Design I	2
Term 2	CH 222	General Chemistry II		x			5	CH 221	CHE 202/205 General Chemistry and Lab	4
	ENGR 112	Engineering Orientation II		x			3	ENGR 111	ENGR 266 Computer Programming for Engineers	3
	MTH 252	Calculus II		x	x		4	MTH 251	MTH 252	4
	WR 121	English Composition: Intro to Argument	x	x	x	x	4	WR 115 or Placement Test	WR 121	3
	DRF 113	CAD II		x			3		MTE 242 CAD for Mechanical Design II	2
Term 3	WR 122	English Composition: Style & Argument	x	x	x	x	4	WR 121	WR 122	3
	Arts & Letters[1]	General Ed Req - See Advisor	x	x	x	x	3		Humanities Elective	3
	Social Science[1]	General Ed Req - See Advisor	x	x	x	x	3		Social Science Elective - See Advisor	3
	ECON 201	Economics	x		x		3	WR 121-123 & MTH 111	Economics Elective	3
	SP 111	Fundamentals of Public Speaking	x	x	x		4	WR 095	SPE 111 Public Speaking	3
Summer										
Term 4	ENGR 201	Electrical Fundamentals I	x				4	MTH 251 Co-requisite	UCC ENGR 201+202 = ENGR 236	3
	ENGR 211	Statics	x				4	MTH 112	ENGR 211	4
	MTH 254	Vector Calculus I	x				4	MTH 252	MTH 254	4
	PH 211	Physics I w/Calculus	x				5	MTH 251 Co-requisite	PH 221	4
Term 5	ENGR 202	Electrical Fundamentals II		x			4		See note above for OIT ENGR 236	0
	ENGR 212	Dynamics		x			4	ENGR 211	ENGR 212	3
	MTH 256	Differential Equations		x			4	MTH 252	MTH 256	4
	PH 212	Physics II w/Calculus		x			5	PH 211	PH 222	4
Term 6	ENGR 213	Strength of Materials			x		4	ENGR 211	ENGR 213	4
	MTH 265	Statistics for Engineers & Scientists			x		4	MTH 251	MATH 361 Statistical Methods I	4
	PH 213	Physics III w/Calculus			x		5	PH 212	PH 223	4
	WR 227	Technical Report Writing	x	x	x	x	4	WR 121	WR 227	3

Credits per term: Term 1 = 16, Term 2 = 19, Term 3 = 17, Term 4 = 17, Term 5 = 17, Term 6 = 17

	TOTAL DEGREE CREDITS	**103**		**84**

Program Advisor:
NOTES: 1. One of the Arts & Letters or Social Science electives must also meet the UCC Cultural Literacy requirements

ADDITIONAL CLASSES THAT CAN BE TAKEN AT UCC

UCC Course No. and Course Name		F	W	S	S	Credits	Prerequisites/Notes	OIT Course No.	Credits
MFG 111	Machine Shop Practices I	x				3	Instructor Approval	UCC MFG 111 + 112 = OIT MFG 120	4
MFG 112	Machine Shop Practices II		x			3	Instructor Approval	See note above on OIT MFG 120	0
PHL 202	Ethics		x			3		PHIL 331	3
WLD 101	Welding Processes & Applications	x				4		Math Elective	3
SP 219	Small Group Discussion		x	x		3		SPE 321	3
	ADDITIONAL CREDITS					**16**			**13**

TOTAL ARTICULATED CREDITS	**119**		**97**

**Umpqua Community College
Engineering Transfer Program**

to

**Oregon Institute of Technology
Bachelor of Science in Mechanical Engineering**

**Articulation Agreement
2016 - 2017 Catalog**

It is agreed that students transferring from Umpqua Community College's (UCC) Engineering Transfer program to Oregon Institute of Technology's (Oregon Tech) Bachelor of Science in Mechanical Engineering (BSME) degree program will be given credit for courses as specified below. This agreement is based on the evaluation of the rigor and content of the general education and technical courses at both UCC and Oregon Tech and is subject to a yearly reevaluation by both schools for continuance. This agreement is dated November 8, 2016.

Baccalaureate students must complete a minimum of 60 credits of upper-division courses before a degree will be awarded. Upper-division is defined as 300 and 400-level courses 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.

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 Umpqua Community College during the above catalog year, and they must enroll at Oregon Tech within three years of the agreement date.

By_____
   Clay Baumgartner
   Department Chair
   Umpqua Community College

By_____
   Marla R. Edge
   Director, Academic Agreements
   Oregon Institute of Technology

By_____
   Jesse Morrow
   Dean, Career and Technology Education
   Umpqua Community College

By_____
   Wendy Ivie
   University Registrar
   Oregon Institute of Technology

By_____
   David Farrington
   Director of Enrollment Services/Registrar
   Umpqua Community Collegege

By_____
   Jeffrey Hayen, Department Chair
   Mechanical and Manufacturing
   Engineering and Technology
   Oregon Institute of Technology

UCC's Engineering Transfer to
Oregon Tech's Bachelor of Science in Mechanical Engineering
2016 – 2017 Catalog
Page 2

Courses Required for Oregon Tech's Mechanical Engineering Degree
to be taken at UCC.

Umpqua Community College Course Number & Title	Qtr. Units	Oregon Tech Course Number & Title	Qtr. Units
CH 221 General Chemistry	5	CHE 201/204 General Chemistry and Lab	4
CH 222 General Chemistry	5	CHE 202/205 General Chemistry and Lab	4
DRF 112 CAD I (Must be AutoCAD based)	3	MET 241 CAD for Mechanical Design I	2
DRF 113 CAD II (Must be AutoCAD based)	3	MET 242 CAD for Mechanical Design II	2
ECON 201 Economics (Micro) [1]	3	Economics Elective [1]	3
ENGR 111 Engineering Orientation ENGR 112 Problem Solving & Technology	3 3	ENGR 111 MMET Orientation ENGR 266 Engineering Computation	2 3
ENGR 201 Electrical Fundamentals I and ENGR 202 Electrical Fundamentals II	4 4	ENGR 236 Fundamentals of Electric Circuits	3
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 Materials	4
Humanities electives [2]	3	Humanities electives [2]	3
Social Science electives [1]	3	Social Science electives [1]	3
MTH 251 Calculus I	5	MATH 251 Differential Calculus	4
MTH 252 Calculus II	4	MATH 252 Integral Calculus	4
MTH 254 Vector Calculus I	4	MATH 254N Vector Calculus I	4
MTH 256 Differential Equations [3]	4	MATH 321 Applied Differential Equations I [3]	4
MTH 265 Statistics for Engineers & Scient. [3]	4	MATH 361 Statistical Methods I [3]	4
PH 211 General Physics w/Calculus	5	PHY 221 General Physics with Calculus	4
PH 212 General Physics w/Calculus	5	PHY 222 General Physics with Calculus	4
PH 213 General Physics w/Calculus	5	PH 223 General Physics w/Calculus	4
SP 111 Fundamentals of Public Speaking	4	SPE 111 Public Speaking	3
WR 121 English Composition: Intro to Argument	4	WRI 121 English Composition	3
WR 122 English Composition: Style and Argument	4	WRI 122 Argumentative Writing	3
WR 227 Technical Report Writing	4	WRI 227 Technical Report Writing	3
Total UCC Credits [4]	**103**	**Total Articulated Degree Credits**	**84**

UCC's Engineering Transfer to
Oregon Tech's Bachelor of Science in Mechanical Engineering
2016 – 2017 Catalog
Page 3

Courses required for Oregon Tech's Bachelor of Science in Mechanical Engineering and can be taken at either UCC or Oregon Tech.

Umpqua Community College Course Number & Title	Qtr. Units	Oregon Institute of Technology Course Number & Title	Qtr. Units
MFG 111 Machine Shop Practices I MFG 112 Machine Shop Practices II	3 3	MFG 120 Manufacturing Processes I	4
PHIL 202 Ethics [2,3]	3	PHIL 331 Ethics in Professions[2,3]	3
SP 219 Small Group Discussion [3]	3	SPE 321 Small Group and Team Communication [3]	3
WLD 101 Welding Processes and Applications	4	MFG 103 Introductory Welding Processes	3
Additional UCC Credits [4]	**16**	**Additional Oregon Tech Credits**	**13**
Total Articulated Credits [4]	**119**	**Total Articulated Degree Credits**	**97**

In addition to the above courses, the courses listed below are also required for the Bachelor of Science in Civil Engineering and are offered only by Oregon Tech.

Oregon Institute of Technology Course Number & Title	Qtr. Units
ENGR 355 Thermodynamics	3
HUM 125 Introduction to Technology, Society and Values[2]	3
MET 160 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
Fluid Mechanics II Requirement	3
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
MECH 490 Senior Projects I	3

UCC's Engineering Transfer to
Oregon Tech's Bachelor of Science in Mechanical Engineering
2016 – 2017 Catalog
Page 4

MECH 491 Senior Projects II	3
MECH 492 Senior Projects III	3
MECH Elective [5]	12
MET 326 Electric Power Systems	3
MET 375 Solid Modeling	3
MFG 314 Geometric Dimensioning and Tolerancing	3
MGT 345 Engineering Economy	3
MATH 341 Linear Algebra I	4
MATH 451 Numerical Methods I	4
Social Studies Electives, 300 & 400 Level[3]	6
WRI 327 Advanced Technical Writing	3
Additional Oregon Tech Credits [6]	**95**
Total Degree Credits [7]	**192**

1. Six credits of lower division Social Science Electives are required. Choose from ANTH, ECON, HST, PS, PSY, and SOC prefixes or other courses designated as Social Science Electives by the Oregon Tech Registrar's Office. For Mechanical Engineering program, one of the Social Science Electives shall be an ECON course. An additional 6 credits of 300- and 400- level classes (combined total of 12 credits of Social Science Electives) will be taken at Oregon Tech.
2. Students must take 9 credits of Humanities Electives. However, only 3 humanities credits can be studio/performance based Choose from ART, ENG, FA, MUS, PHL, and R prefixes or other courses designated as Humanities Electives by the Oregon Tech Registrar's Office. For the Mechanical Engineering program, one of the electives shall be HUM 125 and one shall be PHIL 331 (6 credits of the 9 credit requirement).
3. Does not count toward 60 upper-division credit requirement.
4. Excess credits will transfer to Oregon Tech as general elective credit; these credits will not be used toward the Bachelor of Science in Mechanical Engineering Degree.
5. Oregon Tech requires a total of at least 12 credits of Mechanical Electives.
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 and 45 credits must be from Oregon Tech.
7. Oregon Tech's Bachelor of Science in Mechanical Engineering requires 192 total credits.

Degree Requirements

In the curriculum listings appear several courses titled "MECH Elective." MECH electives allow the student to select and pursue specific career objectives within the mechanical engineering field. MECH electives are upper-division MECH courses, not specifically required for graduation.

Students from other institutions should refer to the sections of this catalog titled "Transfer Students" and "Admission to Baccalaureate Programs."

The Bachelor of Science in Mechanical Engineering requires 192 credit hours as prescribed in the following curriculum outline.

Bachelor of Science in Mechanical Engineering
Curriculum

Required courses and recommended terms during which they should be taken:

Freshman Year		Fall
CHE 201	General Chemistry I	3
CHE 204	General Chemistry I Laboratory	1
ENGR 111	MMET Orientation	2
WRI 121	English Composition	3
	Humanities/Social Science Elective[1]	3
	College Algebra (if suggested by advisor)[2]	
Total		**12**

Freshman Year		Winter
CHE 202	General Chemistry II	3
CHE 205	General Chemistry II Laboratory	1
MFG 103	Introductory Welding Processes	3
WRI 122	Argumentative Writing	3
	Humanities/Social Science Elective[1]	3
	Trigonometry (if suggested by advisor)[2]	
Total		**13**

Freshman Year		Spring
MATH 251	Differential Calculus	4
MFG 120	Manufacturing Processes I	4
MET 160	Engineering Materials I	3
MET 241	CAD for Mechanical Design I	2
SPE 111	Public Speaking	3
Total		**16**

Sophomore Year		Fall
MATH 252	Integral Calculus	4
MET 242	CAD for Mechanical Design II	2
PHY 221	General Physics with Calculus	4
WRI 227	Technical Report Writing	3
	Economics Elective	3
Total		**16**

Sophomore Year		Winter
ENGR 211	Engineering Mechanics: Statics[6]	4
MATH 254N	Vector Calculus I	4
	Statistics Requirement[3]	4
PHY 222	General Physics with Calculus	4
Total		**16**

Sophomore Year		Spring
ENGR 213	Engineering Mechanics: Strength of Materials[6]	4
ENGR 236	Fundamentals of Electric Circuits	3
ENGR 266	Engineering Computation	3
MATH 321	Applied Differential Equations I	4
PHY 223	General Physics with Calculus	4
Total		**18**

Junior Year		Fall
MATH 341	Linear Algebra I	4
MECH 318	Fluid Mechanics I	4
MECH 363	Engineering Instrumentation	3
MET 375	Solid Modeling	3
MFG 314	Geometric Dimensioning and Tolerancing	3
Total		**17**

Junior Year		Winter
ENGR 212	Engineering Mechanics: Dynamics	3
ENGR 355	Thermodynamics	3
MECH 315	Machine Design I	3
MECH 360	Engineering Materials II	3
MET 326	Electric Power Systems	3
SPE 321	Small Group and Team Communication	3
Total		**18**

Junior Year		Spring
HUM 125	Introduction to Technology, Society and Values	3
MATH 451	Numerical Methods I	4
MECH 313	Thermodynamics II	3
MECH 316	Machine Design II	3
	MECH Elective[4]	3
Total		**16**

Senior Year		Fall
MECH 323	Heat Transfer I	3
MECH 351	Finite Element Analysis	3
MECH 490	Senior Projects I	3
WRI 327	Advanced Technical Writing	3
	Fluid Mechanics II Requirement[5]	3
	MECH Elective[4]	3
Total		**18**

Senior Year		Winter
MECH 437	Heat Transfer II	2
MECH 480	Mechanical Vibrations	3
MECH 491	Senior Projects II	3
PHIL 331	Ethics in the Professions	3
	Humanities/Social Science Elective[1]	3
	MECH Elective[4]	3
Total		**17**

Senior Year		Spring
MGT 345	Engineering Economy	3
MECH 436	Classical Control Systems	3
MECH 492	Senior Projects III	3
	Humanities/Social Science Elective[1]	3
	MECH Elective[4]	3
Total		**15**

Total Credits Required for B.S. in Mechanical Engineering: 192

1 – Along with HUM 125, PHIL 331, and an Economics course, another 3 credits of Humanities courses and 9 credits of Social Science courses. Furthermore, activity or performance-based Humanities courses are not accepted.

2 – MATH 111 (College Algebra) and MATH 112 (Trigonometry) should be taken if needed to adequately prepare for MATH 251. Any credits earned from these courses do not apply to the degree program. Consult with an academic advisor for further guidance.