Agreement for an Intercollegiate Dual Degree Program between University of Wisconsin-Stout and University of Wisconsin-La Crosse

This document states the terms of an agreement between the College of Science, Technology, Engineering, Mathematics and Management at the University of Wisconsin-Stout and the University of Wisconsin-La Crosse.

Beginning with the first semester of the 2018-19 school year, a dual program leading to a bachelor's degree in Physics from the University of Wisconsin-La Crosse and a bachelor's degree in a branch of engineering from the University of Wisconsin-Stout was available to qualified students. *This is an updated version of that agreement.* This dual degree program requires completion of appropriate coursework at both the University of Wisconsin-La Crosse (typically 3 academic years or roughly 90 credits) and the University of Wisconsin – Stout (typically 2 academic years or roughly 60 credits dependent on engineering program). Students transferring to the University of Wisconsin-La Crosse are eligible to participate. Transfer credits accepted by the University of Wisconsin-La Crosse count towards the physics degree. To be awarded a bachelor's degree from the University of Wisconsin-Stout a minimum of 32 credits must be earned in residence.

University of Wisconsin-La Crosse students will be selected for entrance into the University of Wisconsin-Stout College of Science, Technology, Engineering, Mathematics and Management based on the calculation of a cumulative grade point averaging using all grades and upon the positive recommendation of the Chair of the Department of Physics (or designee) at the University of Wisconsin-La Crosse. The minimum cumulative grade point average for admission will be 2.0 however, as part of ABET accreditation, a grade of B or higher is required in Calculus I or a 2.0 average across Calculus 1, Calculus 2, College Chemistry I is required. Students not meeting those requirements are admitted as pre-engineering until said requirements are met when the 'pre' designation will be dropped.

In the first three years of work taken at the University of Wisconsin-La Crosse, students must complete appropriate courses in chemistry, computer science, mathematics, and physics for the sought-after degrees at both schools. The College of Science, Technology, Engineering, Mathematics and Management will work with the University of Wisconsin-La Crosse advisors to recommend appropriate courses. Attendance during the summer or winterm at the University of Wisconsin-Stout may be recommended in some cases to reduce credit load during the fall and spring semesters.

Dual degree students should also take general education courses to meet the graduation requirements at the University of Wisconsin-La Crosse. Dual degree students will then "automatically" meet the general education requirements for the University of Wisconsin-Stout except for the specifically required general education course, ETECH 100 Impacts of Engineering - 3 credits. This is identified in table 2. UW-Stout's graduation requirements of Racial & Ethnic Studies and Global Perspective are also met with completion of the UWL degree.

Courses passed with a D or better will be transferred to the University of Wisconsin-Stout as credit for equivalent courses, even though they may not be required in the engineering curriculum selected by the student.

During the period at the University of Wisconsin-Stout, students will complete the requirements specified in the College of Science, Technology, Engineering, Mathematics and Management bulletin at the time of admission to their engineering degree programs. The coursework passed with a D or better at the University of Wisconsin-Stout will also be transferred to the University of Wisconsin-La Crosse to complete the requirements for the selected degree.

When transferring to the University of Wisconsin-Stout from the University of Wisconsin-La Crosse the student is expected to submit application for admission to include the application fee, high school transcripts, and official transcripts from all institutions of higher education attended.

Changes in curricula, at both institutions, will be accommodated as they occur. Students will be eligible to participate in commencement ceremonies at both the University of Wisconsin-Stout and University of Wisconsin-La Crosse.

The University of Wisconsin-Stout College of Science, Technology, Engineering, Mathematics and Management commits to report on a regular basis the performance of dual degree students currently enrolled. This will be sent to the Chair of the Physics Department at the University of Wisconsin-La Crosse.

Recruitment of students for this program will be the responsibility of the University of Wisconsin-La Crosse, with the cooperation of the University of Wisconsin-Stout.

This agreement constitutes a declaration of intent and is subject to renegotiation as conditions change and experience dictates. This agreement will be reviewed by both parties six months prior to five years after signing of the agreement. This agreement may also be reviewed, and changes made if there are curriculum changes in programs at either institution.

IN WITNESS WHEREOF the parties hereto have executed two copies of this instrument, each of which shall be considered an original.

Glendali Rodriguez 05/12/2023

Glendalí Rodriquez, Provost Date University of Wisconsin-Stout

Gindy Neidermyer 05/10/2023

Dr. Gindy Neidermyer, Interim Dean Date College of Science, Technology, Engineering, Mathematics and Management University of Wisconsin-Stout

Thomas Lacksonen 05/10/2023

Dr. Thomas Lacksonen, Chair Date Engineering and Technology Department University of Wisconsin-Stout 5/15/23

Dr. Betsy Morgan
Provost and Vice Chancellor
University of Wisconsin-La Crosse

Dr. Ju Kim, Dean
College of Science & Health

University of Wisconsin-La Crosse

05/15/2023

Dr. Shelly Lesher, Chair Date
Physics Department
University of Wisconsin-La Crosse

Table 1: University of Wisconsin-La Crosse – Physics

Dual Degree Program between University of Wisconsin-La Crosse Physics and University of Wisconsin-Stout

UNIVERSITY OF WISCONSIN-LA CROSSE REQUIREMENTS

Courses/Credits Required for UWL Physics DegreeUW-Stout Equivalent CourseCourseTitleCreditsCourseTitleRequired General Education – 37 CreditsRequired General Education – 40 creditsENG 110College Writing3ENGL 101Composition 1CST 110Communicating Effectively3COMST 100Fundamentals of SpeechMT11 207Calculus I5MAT11Calculus I/Calculus & AnalytiMinority Cultures or Multiracial Women's Studies3Equivalent will vary depending on course completed at UWLECO 110Microeconomics & Public Policy ORFCON 215Principles of MicroeconomicsECO 120Global MacroeconomicsECON 210Principles of MacroeconomicsInternational & Multicultural Studies (2 courses)6Fquivalent depends on course completed at UWLPHIY 203General Physics IPHYS 281University Physics IOR PHIY 103Fundamental Physics I4PHYS 211 'PHYS 211 'PHYS 212 'PHYS 212 'PHYS 212 'Introductory Physics LabART 102 ART 102 Art Appreciation THA 10 Healthy Active Lifestyle3ART11 222 ART11 222 ART102 ART 103 Autsic Appreciation Theatre Appreciation <br< th=""><th>3 3 3 4/5</th></br<>	3 3 3 4/5
Required General Education - 37 Credits Required General Education - 40 credits	3 3 4/5
ENG 110 College Writing CST 110 Communicating Effectively Calculus I Calculus II Calculus II	3 4/5
CST 110 Communicating Effectively 3 COMST 100 Fundamentals of Speech	3 4/5
MTH 207 Calculus I Minority Cultures or Multiracial Women's Studies ECO 110 OR ECO 120 Global Macroeconomics International & Multicultural Studies (2 courses) PITY 203 OR PITY 103 PITY 103 PITY 103 PITY 103 PITY 103 PITY 203 OR PITY 105 PITY 205 PITY 205 PITY 205 PITY 205 PITY 205 PITY 207 PITY 2	4/5
Minority Cultures or Multiracial Women's Studies Studies Women's Studies Women's Studies Studies Women's Studies Women's Studies FCON 215 Principles of Microeconomics OR FCON 215 Principles of Microeconomics OR FCON 210 Principles of Microeconomics on Course Completed at UWL	
Minority Cultures or Multiracial Women's Studies 3	
Women's Studies	2
ECO 110 Microeconomics & Public Policy OR ECO 120 Global Macroeconomics International & Multicultural Studies (2 courses) PIIY 203 General Physics I OR 'PIIY 103 Fundamental Physics I Humanistic Studies CHOOSE 2: ART 102 Art Appreciation THA 110 Theatre Appreciation THA 110 Theatre Appreciation HPR 105 Healthy Active Lifestyle MIII 208 Calculus II Microeconomics ECON 215 OR ECON 210 Principles of Microeconomics Equivalent depends on course completed at UWL University Physics I PIIYS 281 University Physics I PIIYS 212 Introductory Physics Lab Arts & Humanities general education ART 102 ART 11222 Introduction to Art MUSI 130 Music Appreciation Theatre Appreciation Theatre in our World Theatre in our World Theatre In Our World MATII Calculus II/Calculus & Analyte Required Physics – 51 credits of coursework including: MTII 208 Calculus II Principles of Microeconomics Fundariococonomics Fundariococonomics Fundariococonomics Fundariococonomics Fundariocococococococococococococococococococ	3
OR ECO 120 Global Macrocconomics International & Multicultural Studies (2 courses) PITY 203 General Physics I OR 'PITY 103 Fundamental Physics I Humanistic Studies CHOOSE 2: ART 102 Art Appreciation THA 110 Theatre Appreciation THA 110 Theatre Appreciation THA 110 Theatre Appreciation THA 110 Theatre Appreciation HTI 208 Calculus II OR ECON 210 Principles of Macrocconomics Fquivalent depends on course completed at UWL PITYS 281 University Physics I PHYS 211 Introductory Physics Lab Arts & Humanities general education ART 102 ART 11 222 Introduction to Art MUS 105 Music Appreciation Theatre Appreciat	
International & Multicultural Studies (2 courses) PIIY 203 General Physics I OR PIIY 103 Fundamental Physics I Humanistic Studies CHOOSE 2: ART 102 Art Appreciation MUS 105 Music Appreciation THA 110 Theatre Appreciation Thealthy Active Lifestyle Required Physics – 51 credits of coursework including: MTII 208 Calculus II FullYS 281 PIIYS 281 University Physics I Introductory Physics Lab Arts & Humanities general education ART 1122 Introduction to Art Music Appreciation THEA 232 Theatre in our World THEA 232 Theatre in our World THEA 235 THEA 236 THEA 237 Theatre in our World THEA 238 THEA 239 THEA 231 THEA 231 THEA 232 THEA	3
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PHY 203 General Physics I OR PHY 103 Fundamental Physics I Humanistic Studies CHOOSE 2: ART 102 Art Appreciation MUS 105 Music Appreciation THA 110 Theatre Appreciation THA 110 Theatre Appreciation HPR 105 Healthy Active Lifestyle Required Physics – 51 credits of coursework including: MTH 208 Calculus II PHYS 281 University Physics I PHYS 211 Introductory Physics Lab Arts & Humanities general education ART 102 ART11222 Introduction to Art MUSIC 130 Music Appreciation THEA 232 Theatre in our World PE 205 Lifelong Wellness Required Physics – 51 credits of coursework including: MTH 208 Calculus II A MATTI Calculus II/Calculus & Analyte	6
PHY 203 General Physics I OR 'PHY 103 Fundamental Physics I Humanistic Studies CHOOSE 2: ART 102 Art Appreciation MUS 105 Music Appreciation THA 110 Theatre Appreciation THA 110 Theatre Appreciation HPR 105 Healthy Active Lifestyle Required Physics – 51 credits of coursework including: MTH 208 Calculus II Art PHYS 281 PHYS 281 Introductory Physics I ART PHYS 211 Introductory Physics Lab Arts & Humanities general education Arts & Humanities general education ART 1022 Introduction to Art MUSIC 130 Music Appreciation THEA 232 Theatre in our World FE 205 Lifelong Wellness Required Physics – 51 credits of coursework including: MTH 208 Calculus II A MATH Calculus II/Calculus & Analyte	0
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HPR 105 Healthy Active Lifestyle 3 PE 205 Lifelong Wellness Required Physics – 51 credits of coursework including: MTH 208 Calculus II 4 MATH Calculus & Analytical Control of the Contr	2
Required Physics - 51 credits of coursework including: MTH 208 Calculus II 4 MATH Calculus II/Calculus & Analyt	2
MTH 208 Calculus II 4 MATH Calculus 11/Calculus & Analyt	3
	ic 4/5
154/156 Geometry II	
STAT 245 Probability and Statistics 4 STAT 330 Probability & Statistics for	3
Engineering and the Sciences	
MTH 308 Linear Algebra w/Differential 4 MATH 250 Differential Equations with	3(+1)
Equations Linear Algebra	` `
MTH 310 Calculus III: Multivariate Calculus 4 MATH 158 Calculus III	4
PHY 204 General Physics II PHYS 282 University Physics II	
OR 4	4
'PHY 104 Fundamentals Physics II PHYS GLX Physics Lab Electives	
PHY 306 Modern Physics 3 PHYS XXX Physics Electives	3
PHY 305 General Physics III 3 PHYS XXX Physics Electives	3
PHY 311 Experimental Physics (Writing 2 PHYS 3XX Physics Electives	2
Emphasis course)	
PHY 320 Statics 3 PHYS 291 Statics	3
PHY 321 Classical Mechanics 3 PHYS 381 Computational Classical Mechanics	3
PHY 334 Electrical Circuits (Writing Emphasis 3 ENGR 290 Circuits and Devices	3
course)	
PHY 343 Thermodynamics 3 ME 390 Engineering Thermodynamics	3
CHM 103 General Chemistry I 5 CHEM 135 College Chemistry I	5
CS 120 Software Design I 4 CS 144 Computer Science I	4

^{&#}x27;course does not meet Stout required physics course for major

Table 2: General Education requirements are the same for all four UW-Stout Engineering programs: Computer and Electrical, Manufacturing, Mechanical and Plastics

UW-La Crosse General Education		UW-Stout General Education			
Course Identifier	Credits	Course Identifier	Credits	GE AREA	@UWS
ENG 110 College Writing	3	ENGL 101 Composition 1	3	COMSK	
		@ENGL-102 Composition 2	3	COMSK	X
CST 110 Communicating	3	COMST 100 Fundamentals of	3	COMSK	
Effectively	3	Speech	3	COMSK	
MTH 207 Calculus I	5	MATH 153 Calculus I	4 (+1)	ARNS	
MTH 208 Calculus II	4	MATH 154 Calculus II	4(+1)	ARNS	
CHM 103 General Chemistry I	5	CHEM 135 College Chemistry I	5	ARNS	
Humanistic Studies	3	~Arts and Humanities			
Any 2 of:					
ART 102 Art Appreciation			6	ARHU	
MUS 105 Music Appreciation	4				
THA 110 Theatre Appreciation					
ECO 110 Microeconomics and		~Social & Behavioral Sciences			
Public Policy					
OR	3				
ECO 120 Global Macroeconomics					
Minority Cultures			6	SBSC	
OR			.,	BBSC	
Multiracial Women's Studies	3				
International and Multicultural					
Studies	3				
		©ETECH 100 Impacts of		CDED	•
		Engineering	3	SRER	X
HPR 105 Healthy Active Lifestyle	3	~Social Responsibility & Ethical	2	CCI	
		Reasoning	3	SEL	
UWL Gen Ed Credit Total	39	UWS Gen Ed Credit Total	40		

[~]General Education areas automatically met with completion of degree at UWL.

@Course to be taken at UW-Stout

UW-Stout General Education Areas:

COMSK – Communication Skills ARNS – Analytic Reasoning & Natural Science

ARHU – Arts and Humanities SBSC – Social & Behavioral Sciences

SRER – Social Responsibility & Ethical Reasoning SEL – Selective

Table 3-1: Major Requirements – Computer and Electrical Engineering

Dual Degree Program between University of Wisconsin-La Crosse Physics and University of Wisconsin-Stout

COMPUTER AND ELECTRICAL ENGINEERING

UNIVERSITY OF WISCONSIN-STOUT MAJOR REQUIREMENTS

UNIVERSITY OF WISCONSIN-STOUT MAJOR REQUIREMENTS					
Major Course/Credits required to earn the UW-Stout Degree	Credits	Fulfilled by UWL Degree	Still to be completed at UW-Stout		
Mathematics and Basic Sciences (20 credits)		(X=yes, blank=no)	(X=yes, blank=no)		
MATH 270 Discrete Mathematics	3		X		
MATTI 250 Differential Equations with Linear Algebra	3	X	Λ		
ENGR 292 Dynamics	3	Λ	X		
PHYS 291 Statics	3	X	Λ		
STAT 330 Probability and Statistics for Engineering	3	X			
and the Sciences	5	77			
PHYS 282 University Physics II		X			
Computer Engineering Concentration					
Engineering Core (11 credits)					
CEE 205 Circuit Analysis and Design	4		X		
CEE 349 or 449 Cooperative Education Experience	2		X		
INMGT 300 Engineering Economy	2		X		
ENGR 275 Thermodynamics & Heat Transfer	3		X		
Computer Engineering (57 credits)					
CEE 225 Digital Logic	3		X		
CEE 215 Electronics	4		X		
CEE 235 Signals & Systems	3		X		
CEE 325 Digital System Design	3		X		
CEE 461 Automatic Control Systems	3		X		
CEE 345 Microprocessor System Design	3		X		
CEE 355 Applied Electromagnetics	4		X		
CEE 405 Capstone 1: Computer Engineering Design	3		X		
CEE 410 Capstone II: Computer Engineering Design	3		X		
CEE 425 Data Communications & Computer Networks	3		X		
CEE 435 Digital Signal Processing OR	3		X		
CEE 455 Fundamentals of Wireless Communication					
CEE 445 Embedded System Design	3		X		
CS 144 Computer Science I	4	X			
CS 145 Computer Science II	4		X		
CS 244 Data Structures	4		X		
CS 441 Computer Architecture	4		X		
CS 442 Systems Programming	3		X		
Electrical Engineering Concentration					
Engineering Core (7 credits)					
CEE 205 Circuit Analysis and Design	4		X		
CEE 349 OR CEE 449 Cooperative Education Experience	1		X		
INMGT 300 Engineering Economy	2		X		
Electrical Engineering (61 credits)					
CEE 215 Electronics	4		X		
CEE 225 Digital Logic	3		X		
CEE 235 Signals and Systems	3		X		

CEE 315 Power Electronics and Renewable Energy Systems	4		X
CEE 325 Digital System Design	3		X
CEE 345 Microprocessor System Design	3		X
CEE 355 Applied Electromagnetics	4		X
CEE 361 Electric Machines and Control	3		X
CEE 405 Capstone I: Computer Engineering Design	3		X
CEE 410 Capstone II: Computer Engineering Design	3		X
CEE 445 Embedded System Design	3		X
CEE 461 Automatic Control Systems	3		X
ENGR 363 Controls and Instrumentation	4		X
ENGR 463 Robotics Design and Analysis	3		X
CS 144 Computer Science I	4	X	
CS 145 Computer Science II	4		X
CS 244 Data Structures	4		X
Technical Elective (Any 400-level course with prefixes: CEE, CS, ENGR, ETECH, ME)	3		X

Table 3-2: Major Requirements – Manufacturing Engineering

Dual Degree Program between University of Wisconsin-La Crosse Physics and University of Wisconsin-Stout MANUFACTURING ENGINEERING

UNIVERSITY OF WISCONSIN-STOUT MAJOR REQUIREMENTS

UNIVERSITY OF WISCONSIN-STOC	JI MAJU	IK KEQUIKEMIEN I	
		Fulfilled by UWL	Still to be completed
Major Course/Credits required to earn the UW-Stout Degree	Credits	Degree	at UW-Stout
		(X=yes, blank=no)	(X=yes, blank=no)
Mathematics and Basic Sciences (21 credits)			
CHEM 241 Chemistry of Materials	4		X
STAT 330 Probability and Statistics for Engineering		V	
And the Sciences	3	X	
MATH 250 Differential Equations with Linear Algebra	3	X	
PHYS 291 Statics	3	X	
ENGR 292 Dynamics	3		X
PHYS 282 University Physics II	5	X	
Engineering Core (14 credits)			
ENGR 290 Circuits and Devices	4	X	
ENGR 294 Mechanics of Materials	3		X
ENGR 275 Thermodynamics & Heat Transfer	3		X
ENGR 391 Fluid Mechanics	3		X
MFGE 349/449 Cooperative Education Experience	1		X
Materials & Manufacturing Processes (18 credits)			
ENGR 315 Metallurgy	3		X
MFGE 351 Manufacturing Process Engineering I	3		X
MFGE 352 Manufacturing Process Engineering II	3		X
ETECH 251 Fund of Plastics Materials & Processing	3		X
ETECH 252 Material Removal and Forming Processes	3		X
ETECH 253 Joining and Casting Processes	3		X
Process, Assembly and Product Engineering (9 credits)			
ETECH 201 Comm of Engineering Design 1	3		X
MFGE 405 Capstone I: Concurrent Design			
	3		X
MFGE 441 Design of Jigs, Fixtures, and tooling	3		X
Manufacturing Integration Methods and System Design (19 credits	(a)		-
ETECH-230 Industrial Robotics & Internet of Things Fundamentals	3		X
ENGR 325 Computer Aided Manufacturing for Mfg Engineers	3		X
MFGE 410 Capstone II: Senior Design Experience 2	3		X
ETECH-435 Advanced Industrial Robotics & Vision Systems	3		X
Integration			
ENGR 363 Controls and Instrumentation	4		X
MFGE 450/650 Industry 4.0 & Cyber Physical Systems	3		X
Manufacturing Competitiveness (9 credits)		1	
INMGT 300 Engineering Economy	2		X
INMGT 335 Lean Manufacturing Systems	4		X
INGMT 422/622 Quality Engineering	3		X

Table 3-3: Major Requirements – Mechanical Engineering

Dual Degree Program between University of Wisconsin-La Crosse Physics and University of Wisconsin-Stout MECHANICAL ENGINEERING

UNIVERSITY OF WISCONSIN-STOUT MAJOR REQUIREMENTS

UNIVERSITY OF WISCONSIN-STOU	JIMIAJU		
		Fulfilled by UWL	Still to be completed
Major Course/Credits required to earn the UW-Stout Degree	Credits	Degree	at UW-Stout
		(X=yes, blank=no)	(X=yes, blank=no)
Mathematics and Basic Sciences (23 credits)			
MATH 158 Calculus III	4	X	
MATH 250 Differential Equations with Linear Algebra	3	X	
ME 352 Intro to Numerical Methods in Engineering	4		X
STAT 330 Probability and Statistics for Engineering & the Sciences	3	X	
PHYS 282 University Physics II	5	X	
CHEM 241 Chemistry of Materials	4		X
Engineering Core (9 credits)			
ENGR 290 Circuits and Devices	4	X	
ENGR 363 Controls and Instrumentation	4		X
ME 349/449 Cooperative Education Experience	1		X
Engineering Graphics (3 credits)	•		•
ETECH 201 Communication of Engineering Design	3		X
Engineering Mechanics (13 credits)	•	•	•
PHYS 291 Statics	3	X	
ENGR 292 Dynamics	3		X
ENGR 294 Mechanics of Materials	3		X
ME 492 System Dynamics	4		X
Thermal and Fluid Sciences (11 credits)	•	•	•
ME 390 Engineering Thermodynamics	4	X	
ENGR 391 Fluid Mechanics	3		X
ME 392 Engineering Heat Transfer	4		X
Materials and Manufacturing Processes (12 credits)	•		•
ETECH 251 Fund of Plastics Materials & Processing	3		X
ETECH 252 Material Removal and Forming Processes	3		X
ETECH 253 Joining and Casting Processes	3		X
ENGR 315 Metallurgy	3		X
Competitive Manufacturing (2 credits)	•	•	•
INMGT 300 Engineering Economy	2		X
Design (13 credits)		•	•
ME 342 Machine Component Design	4		X
ME 405 Capstone I	3		X
ME 410 Capstone II	3		X
Technical Electives	7	X	

Table 3-4: Major Requirements – Plastics Engineering

Dual Degree Program between University of Wisconsin-La Crosse Physics and University of Wisconsin-Stout PLASTICS ENGINEERING

UNIVERSITY OF WISCONSIN-STOUT REQUIREMENTS

UNIVERSITY OF WISCONSIN-S	N LUULK		
		Fulfilled by UWL	Still to be completed
Major Course/Credits required to earn the UW-Stout Degree	Credits	Degree	at UW-Stout
		(X=yes, blank=no)	(X=yes, blank=no)
Mathematics and Basic Sciences (21 credit)			
CHEM 245 Chemistry of Polymers	4		X
MATH 250 Differential Equations with Linear Algebra	3	X	
ENGR 292 Dynamics	3		X
PHYS 282 University Physics II	5	X	
PHYS 291 Statics	3	X	
STAT 330 Probability and Statistics for Engineering & the Sciences	3	X	
Engineering Core (14 credits)			
ENGR 290 Circuits and Devices	4	X	
ENGR 294 Mechanics of Materials	3		X
ENGR 275 Thermodynamics & Heat Transfer	3		X
ENGR 391 Fluid Mechanics	3		X
PLE 349/449 Cooperative Education Experience	1		X
Polymer/Plastic Materials, Processes, Analysis and Testing (24 cro	dits)		
ETECH 250 Introduction to Plastics	3		X
ETECH 341 Injection Molding Technology	3		X
ETECH-343 Extrusion Technology	3		X
ETECH 460 Advanced Manufacturing with 3D Printing	3		X
PLE 310 Injection Molding Theory, Design & Application	3		X
PLE 340 Process Simulation and Analysis	3		X
PLE 360 Testing and Analysis of Plastics	3		X
PLE 380 Extrusion Theory and Design	3		X
Product and Production System Design (22 credits)			
ETECH 201 Comm of Engineering Design 1	3		X
ETECH 252 Material Removal and Forming Processes	3		X
ETECH 415 Robotic System Integration	3		X
ENGR 325 Computer Aided Manufacturing for Mfg Engineers	3		X
ENGR 363 Controls and Instrumentation	4		X
PLE 405 Capstone I: Process/Product Design	3		X
PLE 410 Capstone II: Process/Product Development	3		X
Engineering and Professional Competitiveness (8 credits)		1	·
INMGT 300 Engineering Economy	2		X
INMOT 335 Lean Manufacturing Systems	3		X
INMGT 422 Quality Engineering	3		X