



WESTERN MICHIGAN
UNIVERSITY

Program Agreement

Western Michigan University

Bachelor of Science, Industrial & Entrepreneurial Engineering, B.S.



Grand Rapids Community College

Associate of Arts, Pre- Industrial & Entrepreneurial Engineering, A.A.

I. GRAND RAPIDS COMMUNITY COLLEGE, ASSOCIATE OF ARTS (61-64 credits)			
GRCC Course	GRCC Course Title	WMU Equiv.	Transfer Credit Hours
CHM 130 & 131	General Chemistry I with lab	CHEM 1100 & 1110	5 HRS
EC 252	Principles of Microeconomics	ECON 2010	3 HRS
EG 110	Industrial Graphics with CAD	EDMM 1420	3 HRS
EL 161	Introduction to Digital Logic	ECE 2500	4 HRS
MA 133	Calculus with Analytic Geometry I	MATH 1220	5 HRS
MA 134	Calculus with Analytic Geometry II	MATH 1230	5 HRS
MA 255	Calculus with Analytic Geometry III	MATH 2720	4 HRS
MA 257	Differential Equations & Linear Algebra	MATH 3740	4 HRS
PH 245	Calculus Physics I	PHYS 2050 & 2060	5 HRS
PH 246	Calculus Physics I	PHYS 2070 & 2080	5 HRS
EN 101	English Composition I	ENGL 1050	3 HRS
EN 102, COM 131, OR COM 135	English Composition II, Fundamentals of Public Speaking, Interpersonal Communication	ENGL CR, COM 1040, COM 1700	3 HRS
Social Science- One course needed (Choose one non EC course from the options listed to the right)	Choose one from the list below:		3-4 HRS
	AN 201, 205, 210, 280	ANTH 1500, 2100, 1200, HIST CR	
	GST 200	GWS 2000	
	GE 135, 210, 253, 281	GEOG 1020, 2050, 3800, HIST CR	
	HS 101, 102, 120, 121, 160, 161, 215, 230, 251, 290	HIST 100, 1010, 3020, 3030, 2100, 2110, HIST CR	
	PS 110, 200, 201, 202, 215	PSCI 2000, 2020, 2400, 2500, CR	
	PY 201	PSY 1000	
SO 251, 254, 260	SOC 2000, 2100, 3140		
Humanities- Two courses needed (Choose two different subject areas from the options listed to the right)	Choose two from the list below:		6-8 HRS
	AT 105, 106, 270	ART 2200, 2210, CR	
	EN 118, 233, 235, 242, 247, 248, 251, 252, 261, 262, 270, 271, 272, 278, 284	ENGL 1100, 1100, 2070, 2070, 2660, 2660, 2070, 2520, 3200, 3210, 2220, 2230, 2230, 2070	
	ARA 101, 102	ARAB 1000, 1010	
	CHI 101, 102	CHIN 1000, 1010	
	FR 101, 102, 231, 232	FREN 1000, 1010, 2000, 2010	
	GR 101, 102, 231, 232	GER 1000, 1010, 2000, 2010	
	SP 101, 102, 231, 232	SPAN 1000, 1010, 2000, 2010	
	HS 101, 102, 120, 121, 160, 161, 215, 230, 251, 290	HIST 1000, 1010, 3020, 3030, 2100, 2110, CR	
	HU 204, 205, 210, 212, 219, 220, 245, 273, 274, 281	TGE D1, TGE D1, TGE D2, CLAS 2350, CBDRO, DGE D7, TGE D1, COM 2410, REL 1000	
	MUS 110, 111, 130	TGE D1, MUS 1510, TGE D3	
	PL 201, 202, 205, 207, 209	PHIL 2000, 2250, 2010, 3140, 3140	
TH 248	THEA 1000		
Approved Major Elective	Select from list:	CIS 225, MN 146 or minor approved courses selected in consultation with a WMU advisor	3 HRS
TOTAL CREDIT HOURS			61-64 CREDIT HOURS AT GRCC

II. WESTERN MICHIGAN UNIVERSITY, (72 credits)		
WMU Course	WMU Course Title	WMU Credit Hours
ECE 2100	Circuit Analysis	4 HRS
IEE 2010	Entrepreneurial Engineering I: Cost & Financial Analysis	3 HRS
IEE 2050	Work Design	4 HRS
IEE 2610	Engineering Statistics	3 HRS
IEE 2621	Probability for Engineers	3 HRS
IEE 2622	Statistical Quality Control	2 HRS
IEE 2990	Cooperative Education or Approved Elective	3 HRS
IEE 3010	Entrepreneurial Engineering II: Product & Service Design	3 HRS
IEE 3100	Engineering Economy	3 HRS
IEE 3110	Intro to Operations Research	3 HRS
IEE 3160	Report Preparation	3 HRS
IEE 3300	Simulation Modeling Analysis	3 HRS
IEE 3420	Ergonomics and Design	3 HRS
IEE 4010	Entrepreneurial Engineering III: Facilities Planning & Logistics	3 HRS
IEE 4160	Operations Control in Industry	4 HRS
IEE 4190	IE Senior Design	1 HRS
IEE 4190	IE Senior Design	3 HRS
ME 2560	Statics	3 HRS
Minor	Select minor with academic advisor	15 HRS
Approved Electives	Any approved course to be chosen with your academic advisor	3 HRS
TOTAL CREDIT HOURS		72 CREDIT HOURS AT WMU

TOTAL CREDITS (I –II)
61-64 GRCC Credits
72 WMU Credits
133-136 Total Credits

Advising Notes

This degree is designed with the intent that students can take classes and be advised at the WMU Grand Rapids- Downtown location via the AMP lab.

Program Agreement

This agreement shall commence as of Thursday, January 30, 2020. This program agreement shall abide by all language of the Articulation Agreement between Grand Rapids Community College and Western Michigan University.

Signatures

Grand Rapids Community College

 Michael Merchant
 Department Head, Mechanical & Architectural Design
 Grand Rapids Community College

 Amy Mansfield, Ph.D.
 Dean, School of Workforce Development
 Grand Rapids Community College

Western Michigan University

 Timothy Greene, Ph.D.
 Acting Chair, Industrial and Entrepreneurial Engineering &
 Engineering Mangement
 Western Michigan University

 Steve E. Butt, Ph.D
 Interim Dean, College of Engineering & Applied Sciences
 Western Michigan University

*Please Note: The signed version of the document is kept on file in the GRCC Instructional Support Office. For more information, please contact the Director of Transfer & Articulation Services at 616-234-3183.