



ARTICULATION AGREEMENT PROGRAM GUIDE

Exhibit A

Associate in Applied Science Pre-Engineering Oakland Community College (OCC)		Bachelor of Science Industrial Engineering Lawrence Technological University (LTU)	
Major Requirements:	Credit Hours	Equivalent Course:	
CHE 1510 General Chemistry I	4	CHM 1213	University Chemistry 1
EGR 2010 Engineering Programming	4	CHM 1221	University Chemistry 1 Lab
² ENG1510 Composition I	3	EGE 1102	Engineering Comp App Lab
ENG 2200 Professional Communication	4	COM 1103	College Composition
MAT 1730 Calculus I	4	COM 2103	Technical & Professional Com.
MAT 1740 Calculus II	4	MCS 1414	Calculus 1
MAT 2740 Calculus III	4	MCS 1424	Calculus 2
MAT 2810 Differential Equations	4	MCS 2414	Calculus 3
PHY 2400 Engineering Physics I	5	MCS 2423	Differential Equations
PHY 2500 Engineering Physics II	5	PHY 2413	University Physics 1
		PHY 2421	University Physics 1 Lab
		PHY 2423	University Physics 2
		PHY 2431	University Physics 2 Lab
Focus Area:		EIE 2012	Engineering Graphics
Industrial		MCS 3403	Probability and Statistics No Transfer Credit Awarded No Transfer Credit Awarded
CAD 1201 Introduction to CAD	4		
MAT 1580 Statistics	4		
ROB 2040 Programmable Control Application	4		
ROB 2140 Adv. Programmable Controllers Appl.	4		
Additional General Education Requirements:		LLT 1213	World Masterpieces 1
¹ MTA Fine Arts/Humanities	6	LLT 1223	World Masterpieces 2
¹ MTA Social Science	6	SSC 2413	Found. of the American Exp.
		SSC 2423	Develop. of the American Exp.
Total Credit Hours Required for Associate Degree:	69		



Additional courses that may be taken at OCC and required for the LTU, BS in Industrial Engineering Program:
(Deviation will result in additional LTU coursework upon transfer.)

EGR 1100 Introduction to Engineering	3
EGR 2100 Statics	3
EGR 2700 Engineering Circuits I	5
MAT 2880 Linear Algebra	4

Total additional credit hours that may be taken at OCC: 15

Total Credit Hours Taken at OCC: 84

EGE 1001 + EIE 1011	Fund. of Engineering Design & Foundations of Ind Engr
EGE 2013	Statics
EEE 2123	Circuits and Electronics
MCS 3863	Linear Algebra

Total OCC Credit Hours Applied Towards the LTU B.S. in Industrial Engineering: 63



**Bachelor of Science
Industrial Engineering
Lawrence Technological University (LTU)**

Remaining Requirements:

EGE 1023	Engineering Materials I	3
EGE 2123	Entrepreneurship Engineering Design	3
EGE 3003	Thermodynamics	3
EGE 3022	Leadership & Professional Development	2
EIE 2653	Industrial Engineering Finance	3
EIE 3023	Industrial Manufacturing Processes	3
EIE 3033	Engineering Numerical Methods	3
EIE 3043	Production, Planning and Control	3
EIE 3123	Plant Layout	3
EIE 3353	Operations Research Techniques	3
EIE 3453	Statistical Methods for Process Improvement	3
EIE 3753	Simulation in Systems Design	3
EIE 4013	Work Design and Measurement	3
EIE 4252	Senior Project Fundamentals	2
EIE 4253	Senior Capstone Project	3
EIE 4453	Applied Operations Research	3
EIE 4553	Occupational Ergonomics	3
EIE 4673	Supply Chain and Logistics	3
EIE	4/5xx3 Technical Elective	3
EIE	4/5xx3 Technical Elective	3
EIE	4/5xx3 Technical Elective	3
EIE	4/5xx3 Technical Elective	3
EME 2011	Materials Laboratory	1
LLT/SSC/PSY	3xx3/4xx3 Elective	3

Total Credit Hours Taken at LTU: 70

Minimum Credit Hours Required: 131

Total Credit Hours Taken: 154



Notes:

- ⁴Arts/Humanities, Social Science must be from two different disciplines. Students who complete MTA may choose from applicable courses listed in the OCC Catalog. Students who do not complete MTA can choose courses from the following:
 - Social Science: ANT 1540, 2510, 2750, GEO 2510, GLS 2510, 2520, 2904, HIS 1510, 1520, 1550, 1651, 1660, 1661, 1662, 1663, 1700, 2510, 2520, 2610, HUM 1710, PHI 1520, 1610, 1710, 2710, POL 1510, 1990, 1991, 1992, 1993, 2520, 2530, 2610, 2990, 2991, 2992, PSY 2510, 2710, 2730, 2810, SOC 2510, 2520, 2530, 2550, 2560, 2570, 2610, 2620
 - Fine Arts/Humanities: **ART** 2560, 2600, 2620, **ENG** 1610, 1710, 1720, 2300, 2510, 2520, 2530, 2540, 2550, 2560, 2750, 2760, 2770, 2780, 2800, **FSH** 1500, **HUM** 1510, 1520, 2720, 2900
- ²If a student completed ENG 1510 using the MTA then COM 1103 College Composition will be satisfied. If the student does not complete the MTA then ENG 1520 must be completed for transfer credits of COM 1103.
- The remaining degree requirements noted assume students have completed the articulation agreement as outlined- including successful completion of the specific recommended OCC electives.
- Deviation from this guide may result in none transferable and/or applicable OCC coursework, resulting in additional requirements.
- Completion of this Transfer Credit Agreement Program Guide does not guarantee admission to the Industrial Engineering program at the LTU. Students are encouraged to meet with an OCC Counselor prior to following this Transfer Credit Agreement Program Guide and with an LTU representative before enrolling in their final year at OCC to maximize admissions, scholarship, and transfer eligibility.
- This guide does not include any remedial courses that may be required at OCC and may not include prerequisite requirements.
- Lawrence Technological University requires that a minimum of a “C” (2.0) be earned in each course in order to be considered for transfer credit, non-germane and remedial courses may not qualify for transfer credit.
- For the full LTU Transfer Credit Policy, go to <https://www.ltu.edu/futurestudents/transfer/>.

For questions regarding the transferability of coursework not reflected on the guide, please contact Emily Phelan at Lawrence Technological University, 248-204-3169 or ephelan@edu. For questions regarding the Industrial Engineering program please contact Dr. Chris Riedel, Associate Department Chair of Mechanical, Robotics and Industrial Engineering, at criedel@ltu.edu.

This Transfer Credit Agreement Program Guide is valid from **May 2022 –May 2027**.