OAKLAND COMMUNITY COLLEGE®

Lawrence Tech THEORY AND PRACTICE 1932

ARTICULATION AGREEMENT PROGRAM GUIDE

Exhibit A

Associate in Applied Science **Pre-Engineering** **Oakland Community College (OCC)**			**Bachelor of Science** **Robotics Engineering** **Lawrence Technological University (LTU)**	
Major Requirements:		Credit Hours	Equivalent Course:	
CHE 1510	General Chemistry I	4		No Transfer Credit Awarded
				No Transfer Credit Awarded
EGR 2010	Engineering Programming	4		No Transfer Credit Awarded
[2]ENG1510	Composition I	3	COM 1103	College Composition
ENG 2200	Professional Communication	4	COM 2103	Technical & Professional Com.
MAT 1730	Calculus I	4	MCS 1414	Calculus 1
MAT 1740	Calculus II	4	MCS 1424	Calculus 2
MAT 2740	Calculus III	4	MCS 2414	Calculus 3
MAT 2810	Differential Equations	4	MCS 2423	Differential Equations
PHY 2400	Engineering Physics I	5	PHY 2413	University Physics 1
			PHY 2421	University Physics 1 Lab
PHY 2500	Engineering Physics II	5	PHY 2423	University Physics 2
			PHY 2431	University Physics 2 Lab
Focus Area:				
Mechanical/Civil				
CAD 1201	Introduction to CAD	4	EME 2012	Mechanical Engr. Graphics
ENG 2100	Statics	3	EGE 2013	Statics
EGR 2200	Mechanics of Materials	3	EGE 3013	Mechanics of Materials
EGR 2500	Dynamics	3	EGE 3043	Dynamics
Additional General Education Requirements:				
[1]MTA Fine Arts/Humanities		6	LLT 1213	World Masterpieces 1
			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:		66		

Additional courses that may be taken at OCC and required for the LTU, BS in Robotics Engineering Program: *(Deviation will result in additional LTU coursework upon transfer.)*					
CIS 2151	Object-Oriented Programming (Java)	4	MCS 1514	Computer Science 1	
or					
CIS 2252	Object-Oriented Programming (C++)	4			
CIS 2353	Data Structures	4	MSC 2534	Data Structures	
			EGE 1001	Fund. of Engineering Design &	
EGR 1100	Introduction to Engineering	3	+ MRE 1011	Foundations of Rob Eng	
EGR 2060	Engineering Digital Circuits	4	EEE 2214	Digital Electronics & Lab	
EGR 2080	Engineering Microcontrollers	4	EEE 3233	Microprocessors	
EGR 2700	Engineering Circuits I	5	EEE 2123	Circuits & Electronics	
MAT 1580	Statistics	4	MCS 3403	Probability & Statistics	
MAT 2880	Linear Algebra	4	MCS 3863	Linear Algebra	
Total additional credit hours that may be taken at OCC:		**32**	**Total OCC Credit Hours Applied Towards the LTU B.S. in Robotics Engineering:**		78
Total Credit Hours Taken at OCC:		**98**			

Bachelor of Science
Robotics Engineering
Lawrence Technological University (LTU)

Remaining Requirements:

EEE 4243	Embedded Systems	3
EGE 3012	Engineering Cost Analysis	2
EGE 3022	Leadership & Professional Development	2
EME 3112	Introduction to Projects	2
EME 3653	Measurement Systems	3
LLT/SSC/PSY	3xx3/4xx3 Elective	3
MCS 2514	Computer Science 2	4
MCS 2523	Discrete Mathematics	3
MRE 1011	Foundations of Robotic Engineering	1
MRE 2024	Unified Robotics I	4
MRE 3014	Unified Robotics II	4
MRE 3024	Unified Robotics III	4
MRE 3114	Systems Modeling and Control	4
MRE 4014	Unified Robotics IV	4
MRE 4113	Discrete Control	3
MRE 4902	Capstone Projects 1	2
MRE 4912	Capstone Projects 2	2
	MRE/EME/EEE/MCS 4/5xx3 – Technical Elective	3
	MRE/EME/EEE/MCS 4/5xx3 – Technical Elective	3
	MRE/EME/EEE/MCS 4/5xx3 – Technical Elective	3

Total Credit Hours Taken at LTU:	59
Minimum Credit Hours Required:	136
Total Credit Hours Taken:	157

Notes:

- [1]Arts/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
- [2]If 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 Robotics 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 Robotics 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.