



**TRANSFER GUIDE - ASSOCIATE DEGREE PROGRAMS**

**NTC Program: ELECTROMECHANICAL**

**MSUM Program: Operations Management: Technical Management BS**

**Minimum GPA for admission: 2.0**

**Initial effective date:**

**General Education Courses**

NTC			MSUM		
Course No.	Course Title	Credits	Course No.	Course Title/Field	Credits
10-804-195	College Algebra with Apps (3 cr.) <u>OR</u>	3 or 4	MATH 127	College Algebra	0-3
10-804-118	Intermediate Algebra with Apps (4 cr.)			NA	
10-806-154	General Physics 1	4	PHYS 160/160L	College Physics I with Lab	4
10-806-144	College Physics 2	3		NA	
10-801-196	Oral/Interpersonal Communication	3	COMM 100	Speech Communication	3
10-801-195	Written Communication <u>OR</u>	3		Goal Area 1B	3
10-801-136	English Composition 1		ENGL 101	English Composition I	
10-809-172	Intro to Diversity <u>OR</u>	3		Goal Area 7	3
10-809-196	Intro to Sociology		SOC 110	Intro to Sociology	
10-809-198	Intro to Psychology <u>OR</u>	3	PSY 113	General Psychology	3
10-809-199	Psychology of Human Relations		PSY 220	Social Behavior	
10-890-165	College 101	1			
<b>Total general education credits earned:</b>		<b>23-24</b>			
Total transferable general education credits:		16-19	<b>Total general education credits accepted:</b>		<b>16-19</b>

**Occupational Courses**

Course No.	Course Title	Credits	Course No.	Course Title	Credits
10-660-118	Electrical Fabrication	1			
10-612-120	Fluid Power Systems 1: Fundamentals	1			
10-612-121	Fluid Power Systems 2: Fundamentals of Pneumatics	1			
10-620-172	Industry Workplace Safety	1			
10-660-123	Industrial Ele Tech 1- Direct Current Ele Characteristics	1			
10-660-124	Industrial Ele Tech 2- Alternating Current Ele Characteristics	1			
10-620-171	AutoCAD for Technicians <u>OR</u>	1			
10-664-101	AutoCAD Electrical				
10-606-133	Solidworks 1	1			
10-660-121	Intro to Microcontrollers	1			
10-620-151	Machine Control 1: Ladder Logic Fund	1			
10-620-152	Machine Control 2: Motor & Actuator Control	1			
10-620-153	Machine Control 3: Sensors & Machine Safety	1			
10-620-157	Mechanical Systems 1: Basic Machine Comp	1			
10-620-158	Mechanical Systems 2: Power Trans Systems	1			
10-620-159	Industrial Motors 1: Electric Motors	1			
10-660-125	Industrial Ele Tech 3- Electronic Circuits and Devices	1			
10-660-126	Industrial Ele Tech 4- Electrical Systems	1			
10-660-127	Industrial Ele Tech 5- Advanced Electrical Characteristics	1			
10-660-128	Industrial Ele Tech 6- Advanced Digital Concepts	1			

Technical credits are accepted in transfer as a block.  
Additional credits will be accepted as unrestricted elective credits.

30+8

10-420-101	Intro to Machine Shop	2		
10-620-154	Robot App 1: Fundamentals of Robotic Control	1		
10-620-155	Robot App 2: Robotic System Comp & Software	1		
10-620-160	Industrial Motors 2: DC/AC Var Speed Motor Dr	1		
10-620-161	Servo Sys 1: Fundamentals of Industrial Control Systems	1		
10-620-162	Servo Sys 2: Motion Control Systems	1		
10-620-173	Electromechanical Troubleshooting	1		
10-620-164	PLC 1: PLC Fundamentals And Bit Based Instruction	1		
10-620-165	PLC 2: Timers, Counters, And Program Control	1		
10-620-166	PLC 3: Data, Math, Sequencer And Shift Instructions	1		
10-620-167	PLC 4: Advanced Instructions & Programming	1		
10-442-101	Intro to Welding	1		
10-620-163	Servo Systems 3: Advanced Position Controll & Integration	1		
10-620-145	Electromechanical Projects	3		
10-620-168	PLC 5: Industrial Networking	1		
10-620-169	PLC 6: PLC, PAC And PC Automation Integration	1		
	<b>Total occupational course credits earned:</b>	<b>38</b>	<b>Total occupational course credits accepted:</b>	<b>38</b>
	<b>Total credits required for graduation:</b>	<b>61-62</b>		
	<b>Total transferable credits:</b>	<b>54-57</b>	<b>Total credits accepted at MSUM:</b>	<b>54-57</b>

**Courses needed to complete degree at MSUM:**

Course No.	Course Title	Credits
	MnTC/ Gen Ed Goal Area (LASC) *	21-24
ACCT 230	Principles of Accounting I	3
OM 470	Purchasing & Sourcing Management	3
MGMT 260	Principles of Management	3
OM 380	Methods Improvement	3
OM 393	Occupational Safety & Health	3
OM 483	Cost Analysis	3
OM 395	Computer Applications for Technologists	3
OM 469	Internship	3
OM 482	Quality Management	3
OM 485	Production Inventory Management	3
PMGT 385	Process Leadership	3
PMGT 300	Project Management and Scheduling	3
	Electives (Consult MSUM Advisor)	6
MATH 127	College Algebra	0-3
MATH 234	Introduction to Probability & Statistics	3
ECON 202	Principles of Economics I: Micro	3
	*These courses are required, but may also count toward LASC	
	<b>Total credits needed at MSUM to complete degree:</b>	<b>63-66</b>

Disclaimer: Students planning to transfer should contact NTC's Transfer Specialist and transfer personnel at MSUM for the most current transfer information.