VSCC/MTSU Mechatronics Program Articulation

VSCC Course	Hrs	MTSU Course	Hrs
Communication			
ENGL 1010- English Composition I	3	ENGL 1010 – Expository Writing	3
COMM 2025 – Fundamentals of Speech Communication	3	COMM 2200 – Fundamentals of Speech Communication	3
Humanities and/or Fine Arts			
Humanities or Fine Arts (choose one) ART 1035 – Introduction to Art ARTH 2000 – Art History Survey I ARTH 2020 – Art History Survey II ENGL 2045 – Introduction to Literature ENGL 2055 – African American Literature ENGL 2110 – American Literature to 1865 ENGL 2120 – American Literature Since 1865 ENGL 2310 – Survey of World Literature I ENGL 2320 – Survey of World Literature II ENGL 2860 – Introduction to Film MUS 1030 – Music Appreciation PHIL 1030 – Introduction to Philosophy PHIL 1040 – Introduction to Ethics PHIL 2200 – Introduction to World Religions PHIL 2430 – Philosophy of Religion THEA 1030 – Introduction to Theater	3	Three credits of Fine Arts met	3
Social Behavioral Science			
ECON 2010 - Macroeconomics ECON 2020 – Microeconomics GEOG 1012 – Cultural Geography GEOG 1015 – Physical Geography GEOG 2010 – World Regional Geography HED 120 - Introduction to Wellness POLS 1010 – Introduction to Political Science POLS 1030 – American Government POLS 2025 – State & Local Government PSYC 1030 - Introduction to Psychology PSYC 2120 – Social Psychology PSYC 2130 – Life Span Development SOC 1010 – Introduction to Sociology SOC 1040 - Social Problems	3	Three credits of Social/Behavioral Sciences met	3
Mathematics			
MATH 1910 – Calculus I	4	MATH 1910 – Calculus I	4

Natural Science			
PHYS 2110 - Calculus Based Physics I (transfer students advised to take this science course)	4	PHY 2110/2111 – Calculus Based Physics I	4
Total General Education Credit Hours	**20**	**Total General Education Credit Hours**	**20**

Mechatronics Area of Emphasis
The following are requirements for the B.S. in Mechatronics Engineering at MTSU and the VSCC equivalent courses which will be accepted for transfer toward the degree requirements. A grade of C- (C minus) or higher is required for all area of emphasis courses.

VSCC Course	Hrs	MTSU Course	Hrs
CISP 1010 – Computer Science I	4	CSCI 1170 – Computer Science I	4
ENGR 2110 - Statics	3	ENGR 2110 – Statics	3
MECH 1310 – Electrical Components Formerly MECH 1100	3	ENGR 1100 – Engineering Fundamentals	3
MECH 1320 – Mechanical Components and Electrical Drives Formerly MECH 1200	3		
MECH 1330 – (Electro) Pneumatic and Hydraulic Control Circuits Formerly MECH 1300	3		
MECH 1340 – Digital Fundamentals and Programmable Logic Controllers Formerly MECH 1500	3		
MECH 2440 – Process Control Technologies Formerly MECH 2100	4	ENGR 2100 – Introduction to Engineering Design	3
MECH 2441 – Introduction to Totally Integrated Automation Formerly MECH 2200	4	ENGR 3915 – Technical Project Management & Soft Skills	3
MECH 2480 – Automation Systems Formerly MECH 2300	4	ENGR 3970 – Engineering Economy	3
MECH 2320 – Motor Controls Formerly MECH 2400	3		
MECH 2425 – Mechanics and Machine Elements Formerly MECH 2500	4	ENGR 4510 – Programmable Logic Controllers & Networks	3
MECH 2490 – Manufacturing Applications Formerly MECH 2600	4		
	42	**Total Area of Emphasis Credit Hours**	**22**

An MTSU major in Mechatronics requires a minimum of 64 semester hours of courses to include:
ENGR 2210, 2120, 2130, 3510, 3520, 3530, 3540, 3550, 3560, 3590, 4501, 4500, 4520, 4530, 4580, 4590.
Total: 46 credits

The following are additional courses that must be completed in order to earn a B.S. in Mechatronics Engineering from MTSU:

ENGL 1020 (3)
HIST 2010, 2020, or 2030 (6)
Literature (3)
Fine Art (3)
CHEM 1110/1111 (4)
Social Behavioral Science (3)
MATH 1920 (4)
MATH 3110 (4)
MATH 3120 (3)
MATH elective (3)
PHYS 2120/2121 (4)

Total: 40 credits

Students successfully completing this program will have at least 153 credits. Students have a full or part time option for B.S. completion.

Suggested **Full Time** scheduling of the MTSU courses based on prerequisites/co-requisites:

Summer- Year 1	Semester 1(Fall)	Semester 2 (Spring)
HIST (one course) (3) ENGL 1020 (3) MATH 1920 (4) 10 credits	ENGR 2120 (3) ENGR 2130 (3) PHYS 2120/21 (4) CHEM 1110/1111 (4) MATH 3110 (4) 18 credits	ENGR 3550 (3) ENGR 3590 (3) MATH 3120 (3) ENGR 3510 (3) ENGR 3520 (3) 15 credits
Summer- Year 2	Semester 3 (Fall)	Semester 4 (Spring)
ENGR 2210 (3) ENGR 3560 (3) Humanities/Fine Arts course (3) 9 credits	ENGR 3530 (3) ENGR 4500 (1) ENGR 4520 (3) ENGR 4580 (3) ENGR 3540 (3) MATH Elective (3) 16 credit	ENGR 4530 (3) ENGR 4590 (3) ENGR 4501(3) HIST (one course) (3) ENGL Literature (3) Social Behavioral Science course (3) 18 credits