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# TWO DEGREES, ONE PATH

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## TRANSFER PATHWAY GUIDE 2022-2023

Associate in Science To  
Bachelor of Science in Mechatronics Engineering Technology

### ***Overview***

Completion of the following curriculum will satisfy the requirements for the Associate in Science (AS) degree at a Kentucky Community and Technical College System (KCTCS) institution and leads to the Bachelor of Science (BS) in Mechatronics Engineering Technology degree at Northern Kentucky University (NKU).

### ***Applying to the KCTCS2NKU Program***

Students can apply to participate in the pathway program by completing the online application on the NKU transfer webpage. Students must be enrolled in at least six credit hours at their KCTCS institution, enrolled in an associate degree program, plan to transfer to NKU, and maintain a minimum 2.0 cumulative GPA at their KCTCS institution.

### ***Degree Requirements for KCTCS***

1) Completion of minimum 60 credit hours, 2) minimum cumulative GPA 2.0, 3) minimum of 15 credit hours earned at the institution awarding the degree, 4) cultural studies course, 5) demonstration of digital literacy, and 6) college success requirement.

### ***Admission Requirements to NKU***

Students completing an associate degree with a cumulative GPA of 2.0 or higher will be accepted into NKU.

This bachelor's degree program is designed to provide students with the knowledge and skills needed to succeed in today's highly integrated computer controlled manufacturing. Throughout their curriculum, students are required to take cooperative education ("co-op") in industry in their second or third year of the program, which often continues and leads to full-time employment. Graduates with a rigorous theoretical education and multidisciplinary technical skills are well prepared for engineering and technology positions in applied design, development, implementation, or oversight and maintenance of electromechanical systems and processes.

### ***Degree Requirements for NKU***

To earn a bachelor's degree at NKU, students must complete a minimum of 120 credit hours with at least 45 credit hours numbered 300 and above. In addition, at least 25% of the credit hours required for the degree and the last 30 credit hours must be completed at NKU. Students must have an overall GPA of 2.0 and meet all prerequisites for courses and requirements for the major. A minor is not required for this major.

### ***General Transfer Information***

Students must complete the online application to NKU. There is no application fee for students who are transferring from a KCTCS institution.

**KCTCS Scholars Award:** Students who are KY residents transferring directly from a KCTCS institution with at least 36 hours from that institution and minimum GPA of 3.0, were never enrolled as a degree-seeking student at NKU, and will be enrolled in at least 12 credit hours both fall and spring semester are eligible for a limited number of \$2,500 annual scholarships (\$1,250 per fall and spring). Students must gain admission to NKU by June 15 for fall and November 1 for spring to be eligible for a possible scholarship. Online accelerated programs are not eligible for the KCTCS Scholars Award.

## KCTCS AS TO NKU BS IN MECHATRONICS ENGINEERING TECHNOLOGY CHECKLIST

### Kentucky Community and Technical College System

#### Category 1: KCTCS General Education Requirements

KCTCS Course	Course or Category	Credits	NKU Course	Completed
ENG 101	Writing I (WC)	3	ENG 101	
ENG 102	Writing II (WC)	3	ENG 102	
COM 181 or COM 252	Basic Public Speaking (OC) or Introduction to Interpersonal Communications (OC)	3	CMST 110 CMST 220	
MAT 171	Precalculus (QR)	5	MAT 103 + MAT 119	
(MAT 151 or STA 151 or MAT 161) + STA 251 or STA 220	Applied Statistics Sequence (QR) or Statistics (QR)	3-8	STA 100G + STA 205 or STA 205	
CHE 170/175	General College Chemistry I and General College Chemistry Laboratory I (SL)	5	CHE 120/120L	
PHY 201/202	College Physics I/College Physics Laboratory I	5	PHY 211	
SOC 101	Introduction to Sociology (SB)	3	SOC 100	
TBS XXX	Social Behavioral Science Course (SB)	3	TBD XXX	
TBS XXX	Arts & Humanities (AH) – Heritage	3	TBD XXX	
TBS XXX	Arts & Humanities (AH) – Humanities	3	TBD XXX	
	<b>Subtotal General Education Core Courses</b>	<b>39-44</b>		

TBS XXX means to be selected by KCTCS student.

TBD XXX means to be determined by NKU based on course selected.

For Social and Behavioral Sciences courses, two disciplines must be represented and different from those in the Arts and Humanities category.

A grade of A or B in MAT 150 equates to MAT 103 + MAT 100T. Grade of C or D in MAT 150 equates to MAT 102 + MAT 100T.

#### Category 2: KCTCS AS Requirements

KCTCS Course	Course or Category	Credits	NKU Course	Completed
MAT 175	Calculus I	5	MAT 129	
	<b>Subtotal AS Requirement Courses</b>	<b>5</b>		

STA 251 equates to STA 205 only with the completion of MAT 151, STA 151 or MAT 161.

**Category 3: KCTCS Electives**

KCTCS Course	Course or Category	Credits	NKU Course	Completed
CAD 100	Introduction to Computer Aided Design	3	EGT 212	
FYE XXX	First Year Experience	0-3	UNV100T	
ELT 110	Circuits I	5	EGT 161	
ELT 114	Circuits II	5	EGT 243	
ELT 201	Statics and Strengths of Materials	4	EGT 300	
	<b>Subtotal Elective Courses</b>	<b>17-20</b>		
	<b>Total Associate Degree Hours</b>	<b>61-69</b>		

Degree Requirement: One course must be selected from the KCTCS identified Cultural Studies course list in the KCTCS catalog.

**Northern Kentucky University**

**Category 4: NKU Major Requirements for BS in Mechatronics Engineering Technology**

NKU Course	Course	Credits	KCTCS Course	Taken at KCTCS
CHE 130/130L	Chemistry: An Engineering Approach	4	Waived by CHE 170/175	x
MAT 119	Precalculus Mathematics	3	MAT 160 or MAT 171	x
MAT 129	Calculus I	4	MAT 175	x
PHY 211	General Physics with Laboratory I	4	PHY 201/202	x
PHY 213	General Physics with Laboratory II	4	PHY 203/204	
SOC 100	Introduction to Sociology	3	SOC 101	x
STA 205	Statistical Methods	3	STA 220 or (MAT 151 or STA 151 or MAT 161) + STA 251	x
EGT 116	Introduction to Manufacturing	3	WLD 152	
EGT 161	D.C. Circuit Analysis	3	ELT 110	x
EGT 212	Computer-Aided Drafting and Design	3	CAD 100	x
EGT 243	A.C. Circuit Analysis	3	ELT 114	x
EGT 245	Digital Electronics	3	ELT 120 + ELT 220 = EGT 245 + EGT 300T	
EGT 261	Engineering Materials	3		
EGT 267	Programming for Engineering Applications	3		
EGT 300	Statics and Strength of Materials	3	ELT 201	x
EGT 301	Cooperative Education in Engineering Technology	3		

NKU Course	Course	Credits	KCTCS Course	Taken at KCTCS
EGT 310	Project Management and Problem Solving	3		
EGT 340	Applied Dynamics	3		
EGT 361	Fluid Power	3	FPX100/101	
EGT 367	Microprocessors	3		
EGT 386	Electromechanical Instrumentation and Control	3	ELT 244 + ELT 250 = EGT 386 + EGT 300T	
EGT 402	Control Systems	3		
EGT 408	Mechatronics Topics	3		
EGT 416	Capstone I	1		
EGT 417	Capstone II	3		
	Choose one track: <b>Automated Systems Track</b> <b>Alternative Energy Track</b> <b>Laser Technology Track</b> <b>Computer Science Track</b> (Required courses for each track are listed in Categories 5-8 tables below.)	18		
	<b>Subtotal Major Credit Hours at NKU</b>	<b>62</b>		
	<b>Subtotal Major Credit Hours KCTCS</b>	<b>33</b>		
	<b>Total Major Credit Hours</b>	<b>95</b>		
	<b>Total Baccalaureate Degree Credit Hours</b>	<b>123-131</b>		

Students must choose one of the following tracks: Automated Systems Track, Alternative Energy Track, Laser Technology Track or Computer Science Track. Credits hours for the tracks and bachelor degree can vary based on the courses taken at KCTCS. Some courses in the Alternative Energy Track and the Laser Technology track will be taken at Cincinnati State Technical and Community College.

#### Category 5: NKU Requirements for the Automated Systems Track

NKU Course	Course or Category	Credits	KCTCS Course	Taken at KCTCS
EGT 265	Manufacturing Processes and Metrology	3		
EGT 320	Robotic Systems and Material Handling	3	ELT 260	
EGT 365	CNC & Manufacturing Process Planning	3		
EGT 465	Automated Manufacturing Systems	3		
EGT 480	Machine Design	3		
EGT XXX	Select 3 additional credit hours of EGT courses at NKU	3		
	<b>Additional Track Credit Hours</b>	<b>18</b>		

#### Category 6: NKU Requirements for the Alternative Energy Track

NKU Course	Course or Category	Credits	KCTCS Course	Taken at KCTCS
Take at CState (equates to EGT 140)	Power Systems Foundations (PSET 140 at Cincinnati State)	1		
Take at CState (equates to EGT 151)	Introduction to Controls and Robotics (EMET 150 at Cincinnati State)	2		
Take at CState (equates to EGT 210)	Energy Efficiency and Audits (EMET 210 at Cincinnati State)	3		
Take at CState (equates to EGT 325)	Solar and Renewable Energy (EMET 225 at Cincinnati State)	3		
EGT 450	Thermodynamics and Heat Transfer	3		
EGT XXX	Select 6 elective credit hours of EGT courses	6	ELT 260 = EGT 320	
<b>Additional Track Credit Hours</b>		<b>18</b>		

#### Category 7: NKU Requirements for the Laser Technology Track

NKU Course	Course or Category	Credits	KCTCS Course	Taken at KCTCS
Take at CState (equates to EGT 151)	Introduction to Controls and Robotics (EMET 150 at Cincinnati State)	2		
Take at CState (equates to EGT 293)	Laser Foundations and Safety (EMET 245 at Cincinnati State)	3		
Take at CState (equates to EGT 395)	Laser 2 (EMET 246 at Cincinnati State)	3		
Take at CState (equates to EGT 294)	Electric Drive Mechanisms (EMET 275 at Cincinnati State)	4		
EGT XXX	Select 6 additional credit hours of EGT/EMET courses	6	ELT 260 = EGT 320	
<b>Additional Track Credit Hours</b>		<b>18</b>		

#### Category 8: NKU Requirements for the Computer Science Track

NKU Course	Course or Category	Credits	KCTCS Course	Taken at KCTCS
CSC 260	Object Oriented Programming I	3	CIT 149 + CIT 249 = CSC 260 + CSC 360	
CSC 360	Object Oriented Programming II	3	CIT 149 + CIT 249 = CSC 260 + CSC 360	
CSC 362	Computer Systems	3		
CSC 407	Concepts of Programming Languages	3		
CSC 462	Computer Architecture	3		
INF 120	Elementary Programming	3		CIT 141 - CIT 148
<b>Additional Track Credit Hours</b>		<b>18</b>		

Updated April 2022