

# TRANSFER PATHWAY GUIDE

# 2019-2020

Associate in Science to Bachelor of Science in Mechanical and Manufacturing Engineering Technology

## Overview

Completion of the following curriculum will satisfy the requirements for the Associate in Science degree at a Kentucky Community and Technical College System institution and leads to the Bachelor of Science in Mechanical and Manufacturing Engineering Technology degree at Northern Kentucky University.

## Applying to the Gateway2NKU 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 Gateway CTC, enrolled in an associate degree program, plan to transfer to NKU, and maintain a minimum 2.0 cumulative GPA at Gateway CTC.

## Degree Requirements for GCTC

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, 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.

The accredited Bachelor of Science in mechanical and manufacturing engineering technology focuses on the design and development of parts, processes, and systems. Under this program graduates will acquire knowledge, problem-solving ability, and hands-on skills to enter careers in the design, installation, manufacturing, testing, evaluation, technical sales, or maintenance of mechanical systems. In addition, graduates will have strengths in the analysis, applied design, development, implementation, or oversight of more advanced mechanical systems and processes.

This bachelor’s degree program is designed to provide students with the knowledge and skills needed to succeed as engineers in today’s industry. Students are required to co-op in industry starting with their second year, which often continues and leads to full-time employment. Together with the study of engineering principles, design is the cornerstone of the mechanical and manufacturing engineering technology degree program.

The MMET program is accredited by the Engineering Technology Accreditation Commission of ABET (http://www.abet.org).

## 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 GCTC.

**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.

### GCTC AS TO NKU BS IN MECHANICAL AND MANUFACTURING ENGINEERING TECHOLOGY CHECKLIST

### Gateway Community and Technical College

#### Category 1: GCTC General Education Core Requirements (34 hours)

| **GCTC Course** | **Course or Category** | **Credits** | **NKU Course** | **Completed** |
| --- | --- | --- | --- | --- |
| ENG 101 | Writing I (WC) | 3 | ENG 101 |  |
| ENG 102 | Writing II (WC) | 3 | ENG 291 |  |
| COM 181 or COM 252 | Basic Public Speaking (OC) or Introduction to Interpersonal Communications (OC) | 3 | CMST 110 CMST 220 |  |
| MAT 161 | Statistics and Algebra (QR) | 3 | MAT 161 + STA 251 = MAT 101 + MAT 102 + STA 205 |  |
| MAT 171 | Precalculus (QR) | 5 | MAT 103 + MAT 119 |  |
| STA 251 | Applied Statistics (QR) | 3 | MAT 161 + STA 251 = MAT 101 + MAT 102 + STA 205 |  |
| CHE 170/  CHE 175 | General College Chemistry I and General College Chemistry Laboratory I (SL) | 5 | CHE 120/ CHE 120L |  |
| PSY 110 or SOC 101 | General Psychology or  Introduction to Sociology | 3 | PSY 100 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 |  |
|  | **Subtotal General Education Core Courses** | **37** |  |  |

TBS XXX means to be selected by GCTC student.

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

One of these courses must be selected from the KCTCS identified Cultural Studies course list, indicate by placing (CS) next to the course name in Category 1 or 2 table.

#### Category 2: GCTC AS Requirements (10 hours)

| **GCTC Course** | **Course or Category** | **Credits** | **NKU Course** | **Completed** |
| --- | --- | --- | --- | --- |
| MAT 175 | Calculus I | 5 | MAT 129 |  |
| PHY 201/202 | College Physics I/College Physics Laboratory I | 5 | PHY 211 |  |
|  | **Subtotal AS Requirement Courses** | **10** |  |  |

#### Category 3: GCTC Electives (21 hours)

| **GCTC Course** | **Course or Category** | **Credits** | **NKU Course** | **Completed** |
| --- | --- | --- | --- | --- |
| CIT 105 or OST 105 | Introduction to Computers OR  Introduction to Information Systems | 3 | BIS 101 |  |
| FYE 105 | Achieving Academic Success | 3 | UNV100T |  |
| ELT 110 | Circuits I | 5 | EGT 161 |  |
| ELT 201 | Statics and Strengths of Materials | 4 | EGT 300 |  |
| QMS 101 | Introduction to Quality Management Systems | 3 | EGT 211 |  |
|  | **Subtotal Elective Courses** | **18** |  |  |
|  | **TOTAL Associate Degree Hours** | **65** |  |  |

### Northern Kentucky University

#### Category 4: Major Requirements for BS in Mechanical and Manufacturing Engineering Technology

| **NKU Course** | **Course** | **Credits** | **GCTC Course** | **Taken at GCTC** |
| --- | --- | --- | --- | --- |
| CHE 130/130L | Chemistry: An Engineering Approach | 4 | Waived by CHE 170/175 | x |
| MAT 119 | Precalculus Mathematics | 3 | MAT 171 | x |
| MAT 128 &  MAT 227 or  MAT 129 | Calculus A & Calculus B or  Calculus I | 4-6 | MAT 175 | x |
| PHY 211 | General Physics with Laboratory I | 5 | PHY 201/202 | x |
| PHY 213 | General Physics with Laboratory II | 5 | PHY 203/204 |  |
| STA 205 | Statistical Methods | 3 | STA 220 or  STA 151+  STA 251 | x |
| EGT 116 | Introduction to Manufacturing | 3 |  |  |
| EGT 161 | DC Circuit Analysis | 3 | ELT 110 | x |
| EGT 211 | Quality Control | 3 | QMS 101 | x |
| EGT 212 | Computer-Aided Drafting and Design | 3 |  |  |
| EGT 261 | Engineering Materials | 3 |  |  |
| EGT 265 | Manufacturing Processes and Metrology | 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 |  |  |
| EGT 310 | Project Management and Problem Solving | 3 |  |  |
| EGT 317 | Introduction to Capstone Project in EGT | 1 |  |  |
| EGT 318 | Introduction to Nanotechnology | 3 |  |  |
| EGT 320 | Robotic Systems and Material Handling | 3 |  |  |
| EGT 340 | Applied Dynamics | 3 |  |  |
| EGT 361 | Fluid Power | 3 |  |  |
| EGT 365 | CNC & Manufacturing Process Planning | 3 |  |  |
| EGT 405 | Metrology and Geometric Tolerancing | 3 |  |  |
| EGT 417 | Senior Design in Technology | 2 |  |  |
| EGT 450 | Thermodynamics and Heat Transfer | 3 |  |  |
| EGT 465 | Automated Manufacturing Systems | 3 |  |  |
| EGT 480 | Machine Design | 3 |  |  |
| Select 2:  EGT 260  EGT 280  EGT 362  EGT 386  EGT 411  EGT 423 | Select 2 courses from the following:  Industrial Standards, Safety, and Codes  Introduction to Microtechnology  Tool Design & Computer Aided Manufacturing  Electro-Mechanical Instrumentation & Control  Quality Assurance and Auditing  Planning and Design of Industrial Facilities | 6 |  |  |
| **Design Track:**  EGT 412  EGT 462  or  **Quality Track:**  EGT 321  EGT 341 | Select Design Track or Quality Track:  **Design Track:**  Advanced CADD  Finite Element Modeling  **Quality Track:**  Productivity Management, Scheduling, and Planning  Integrated Resource Management | 6 |  |  |
|  | **Subtotal Major Credit Hours at NKU** | **68** |  |  |
|  | **Subtotal Major Credit Hours at GCTC** | **28** |  |  |
|  | **Total Major Credit Hours** | **96** |  |  |
|  | **Total Baccalaureate Degree Credit Hours** | **133** |  |  |

Updated July 2019