



DEPARTMENT OF
HIGHER EDUCATION &
WORKFORCE DEVELOPMENT

New Program Report

Date Submitted:

06/13/2023

Institution

Ranken Technical College

Site Information

Implementation Date:

8/28/2023 12:00:00 AM

Added Site(s):

Selected Site(s):

Ranken Technical College, 4431 Finney Avenue, St. Louis, MO, 63113

Ranken West, 755 Parr Road, Wentzville, MO, 63385

CIP Information

CIP Code:

150613

CIP Description:

A program that prepares individuals to apply basic engineering principles and technical skills to the identification and resolution of production problems in the manufacture of products. Includes instruction in machine operations, production line operations, engineering analysis, systems analysis, instrumentation, physical controls, automation, computer-aided manufacturing (CAM), manufacturing planning, quality control, and informational infrastructure.

CIP Program Title:

Manufacturing Engineering Technology/Technician

Institution Program Title:

Applied Engineering Technology

Degree Level/Type

Degree Level:

Associate Degree

Degree Type:

Associate of Science

Options Added:

Collaborative Program:

N

Mode of Delivery

Current Mode of Delivery

Hybrid

Student Preparation



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Special Admissions Procedure or Student Qualifications required:
See attachment

Specific Population Characteristics to be served:
n/a

Faculty Characteristics

Special Requirements for Assignment of Teaching for this Degree/Certificate:
See attachment

Estimate Percentage of Credit Hours that will be assigned to full time faculty:
See attachment

Expectations for professional activities, special student contact, teaching/learning innovation:
See attachment

Student Enrollment Projections Year One-Five

Year 1	Full Time: 5	Part Time: 0	
Year 2	Full Time: 5	Part Time: 0	
Year 3	Full Time: 5	Part Time: 0	Number of Graduates: 5
Year 4	Full Time: 5	Part Time: 0	
Year 1	Full Time: 5	Part Time: 0	
Year 2	Full Time: 5	Part Time: 0	
Year 3	Full Time: 5	Part Time: 0	Number of Graduates: 5
Year 4	Full Time: 5	Part Time: 0	
Year 5	Full Time: 5	Part Time: 0	Number of Graduates: 5

Percentage Statement:
n/a

Program Accreditation

Institutional Plans for Accreditation:
See attachment

Program Structure

Total Credits:
58

Residency Requirements:
50% must be completed in Ranken courses

General Education Total Credits:
36



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Major Requirements Total Credits:

58

Course(s) Added

COURSE NUMBER	CREDITS	COURSE TITLE
APM1110	12	Machining Theory and Applied Foundations
APM2015	5	Professional Internship II
APM2115	5	Professional Internship III
APM2110	8	CAD and CAM Programming
APM1210	8	CNC Mill Programming
APM1205	5	Professional Internship I

Free Elective Credits:

0

Internship or other Capstone Experience:

See attachment

Assurances

I certify that the program will not unnecessarily duplicate an existing program of another Missouri institution in accordance with 6 CSR 10-4.010, subsection (9)(C) Submission of Academic Information, Data and New Programs.

I certify that the program will build upon existing programs and faculty expertise.

I certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful. Institutions' decision to implement a program shall be based upon demand and/or need for the program in terms of meeting present and future needs of the locale, state, and nation based upon societal needs, and/or student needs.

Contact Information

First and Last Name: Jodi
Olson

Email: jaolson@ranken.edu

Phone: 314-286-3355

From: Shannon C. Brueggemann <scbrueggemann@ranken.edu>

Sent: Tuesday, May 23, 2023 4:05 PM

Cc: J.C Owens <jowens@ranken.edu>; David Cadle <dacadle@ranken.edu>; Julia M. Bradshaw <jmbradshaw@ranken.edu>; Charles G. Corrigan <cgcorrigan@ranken.edu>

Subject: Applied Engineering Technology -- New Program

The Education Committee recently approved a new program called Applied Engineering Technology program at the and Troy locations effective 2023-2024.

Applied Engineering Technology (AS/AT only) (CIP 15.0613)

- Degree path includes 75% of the Advanced Precision Machining Technical Coursework.
- HLC has already approved.
- There are no new courses. The degree includes already existing courses.
- Another name for this program is called the Boeing Engineering Technology Apprenticeship (BETA Program).
 - Please note it is VERY important that if you refer to this degree programs as the BETA program, then you must follow the approved messaging below. Boeing is very strict on messaging as it relates to their name.
 - Students in this degree path would go through the interview process with Boeing in November every year where they are willing to accept 5 students for this first cohort.
 - Boeing is working on tuition assistance. If they are offered the internship position at Boeing, they will be eligible for tuition assistance. (This has the potential to be a significant amount).

Please let me know if you have questions or concerns.

Opportunity to Join Boeing's Engineering Technician Apprenticeship (BETA) Program

Do you enjoy taking things apart and figuring out how they work?

Do you have a passion for and dream of being a part of impacting the future of aerospace?

Boeing Saint Louis supports a wide variety of defense and commercial aircraft. Boeing's need for Engineering Technicians has driven a partnership with Ranken Technical College. Currently the BETA program develops production engineering technicians through a combination of onsite courses and Boeing internship rotations. Upon graduation qualifying BETA participants start full time with the company. This gives a pathway to leverage continuing education with Boeing to pursue a Bachelor's Degree at the qualifying University of your choosing.

At Boeing, our production engineering technicians utilize their skills in lean build, configuration management, advanced manufacturing design, tooling and equipment to define the plan for fabrication, assembly, delivery, post-production and modification of the most advanced aerospace products. Each day, you'll work alongside experts in industrial engineering, production, quality, design, and supply chain roles to guide our products from design to delivery and beyond. Bring your ideas to Boeing and help shape the future of aerospace manufacturing.

Shannon Brueggemann
Vice President for Education

Ranken Technical College
4431 Finney Avenue
St. Louis, MO 63113
T 314-286-3331
scbrueggemann@ranken.edu
www.ranken.edu

New Program: AT/AS in Applied Engineering Technology

Rationale:

- Based on request from industry:
- Boeing is requesting a program that creates the entry level technician that can exchange and translate the manufacturing needs between teams of engineers and production workers.
- In anticipation of the Advanced Manufacturing Innovation Center (AMIC) set to open doors in late 2024, this type of technician is anticipated to assist in research facilities as engineers need assistance with bringing their innovating work to fruition.
- Goal in developing the program was to incorporate some flexibility while using courses in existence.

BOEING ENGINEERING TECHNOLOGY APPRENTICESHIP (BETA) PROGRAM

Associate of Technology in Applied Engineering Technology

Program Learning Outcomes:

- Interpret engineering drawings and apply mathematical principles that result in the creation of parts that meet industry applications.
- Setup, calibrate, operate, and interpret results from industry-level tools and equipment.
- Employ Computer Aided Drafting (CAD) and 3D Modeling software to communicate technical information.
- Collect, organize, analyze, and interpret data to produce meaningful conclusions and recommendations.

Semester	8 Weeks	8 Weeks	Total Credits
1 st	APM 1110 Machining Theory and Applied Foundations (12)		21 Credits
	GENED: BUS 1000 Career Success Skills (3)	GENED: ENG 1101 Comp I (3)	
		GENED: MTH 1110 Elem Algebra (3)	
BOEING PRESENTS IN OCTOBER & HIRES AS INTERNS BY DECEMBER			
2 nd	APM 1210 CNC Milling (8)		22 Credits
	GENED: ENG 2102 Comp II (3)	GENED: COM 1105 Oral Comm (3)	
	GENED: MTH 1111 Interm Algebra (3)		
3 rd	APM 2100-2100 CAD and CAM Programming (8)		19 Credits
	MTH 3113 Statistical Analysis (3)	GENED: MNG 1204 Intro to Business & Mgmt (3)	
4 th	GENED: SOC 1206 Sociology (3)	APM Internship III (5)	20 credits
	Selection of three BSAM Courses: (Total of 9 Credits)	MNG 4115 Lean Six Sigma(3)	
	<i>MNG 4150 Project Management</i>		
	<i>MNG 4110 Production and Operation Management</i>		
	<i>MNG 4300 Management Information Systems</i>		
	<i>ETH 2222 Business Ethics</i>		



Applied Engineering Technology

Degree Choices: AT, AS

Campus: St. Louis and Troy

2023-24 Curriculum Guide

	<u>Hours</u>	<u>Prerequisites</u>
<u>1st Semester</u>		
APM 1110 Machining Theory and Applied Foundations	12	
WEG PM11 Work Ethic Grade course	0	
General Education classes as needed per degree choice		
<u>2nd Semester</u>		
APM 1210 CNC Mill Programming	8	APM 1110
APM 1205 Professional Internship I	5	APM 1210
WEG PM12 Work Ethic Grade course	0	
General Education classes as needed per degree choice		
<u>3rd Semester</u>		
MTH 3113 Statistical Analysis	3	
APM 2110 CAD and CAM Programming	8	APM 1210
APM 2015 Professional Internship II	5	APM 1210
WEG PM20 Work Ethic Grade course	0	
General Education classes as needed per degree choice		
<u>4th Semester</u>		
MNG 4115 Lean Six Sigma	3	
APM 2115 Professional Internship III	5	APM 1210
WEG PM21 Work Ethic Grade course	0	
Complete 3 courses selected from:		
MNG 4150 Project Management	3	
MNG 4110 Production and Operation Management	3	
MNG 4300 Management Information Systems	3	
ETH 2222 Business Ethics	3	
General Education classes as needed per degree choice		

General Education Requirements	Hours	Associate of Technology (AT)	Associate of Science (AS)	Prerequisite /Corequisite
Communications	3	COM 1105 Oral Communications	COM 1105	
Business & Information Technology	3	BUS 1000 Career Success Skills	BUS 1000	
	3	MNG 1204 Intro to Business & Mgmt	MNG 1204	ENG 1099 (coreq)
English	3	ENG 1099 Foundations of Composition	ENG 1099	
	3	ENG 1101 College Composition I	ENG 1101	ENG 1099
	3	ENG 2102 College Composition II	ENG 2102	ENG 1101
Social Sciences	3	SOC 1206 Principles of Sociology or PSY 1206 Introduction to Psychology	SOC 1206 or PSY 1206	ENG 1099 (coreq)
Mathematics & Science	3	MTH 1110 Elementary Algebra	MTH 1110	
	3	MTH 1111 Intermediate Algebra	MTH 1111	MTH 1110
	3		MTH 2112 College Algebra	MTH 1111
	3		MTH 2220 Trigonometry	MTH 2112
	3		PHY 2230 College Physics	MTH 2220
	3		MTH 2240 Survey of Calculus	MTH 2112

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Interoffice use only: Major = APENT; Concentration = none; major hours = 58; Degree Audit Code: APENT