Wayne Community College
Program Review and Outcome Assessments, 2018-19

Institutional Goal 2: Ensure Program Excellence
Institutional Goal 3: Improve Student Success

Department Name: Mechanical Engineering Technology

Mission/Purpose: The mission of the Mechanical Engineering Technology Program is to prepare individuals to apply technical skills in engineering and design.

Degrees, Diplomas, and Certificates Offered: List all degrees, diplomas, and certificates offered.
Associates in Applied Science - Mechanical Engineering Technology (A40320)
Certificate in Applied Science – Drafting Certificate (C40320A)
Certificate in Applied Science – Engineering Technology Certificate (C40320C)
Certificate in Applied Science – Tool Design Certificate (C40320B)

Describe how the program's mission aligns with the College's vision, mission, core values, and strategic goals.
The mission of the Mechanical Engineering Technology Department is to educate students in the area of technical design and problem solving that will meet the employment needs of the communities it serves.

Activities to ensure curriculum currency (2015-16; 2016-17; 2017-18)
List program curriculum changes, revisions, deletions in table.

Course Title	Date – Updated / Revised / Deleted
NONE	

Provide an overview of the significance of the program changes and improvements that occurred over the past three years
We incorporate new projects, improve each area of instruction where students tend to struggle every semester. We are constantly building and improving our online instruction. We have utilized equipment for hands-on training for our Statics course, and placed 3D printers in our high school program to give students more opportunities and training.

Advisory Committee: dates, summary of minutes, activities (2015-16; 2016-17; 2017-18)
See Folders

Summary of Advisory Committee Activities

Year	Meeting Dates	Recommendations / Activities
2015-16	Dec. 11, 2015	Brinson (Design Lab Access)/ SPX Tour
2016-17	May 4, 2017	Project Management MEC-276/Summer Academy Progress
2017-18	May 3, 2018	Hiring Conversations to students (Koger)/MEC-276 Projects

Describe program's participation with Advisory Committee or external organizations that contribute to maintaining program relevance. *(File Advisory Committee Meeting Minutes for past three years in Program Review Attachment folder.)*
We have a great relationship with our Advisory Committee and they call us constantly when they are in need.

Analysis of trends in the field or industry
Provide narrative for analysis of trends in the field. *(Are there jobs available for your students? Is there new technology/equipment that needs to be added to your program?)*
We would like to get new equipment for CCP and a few machines in our lab when we move into our new facility. Our students are getting good jobs in our area.

Faculty Profile

List of Faculty and Status (2015-16; 2016-17; 2017-18)

Faculty / Name	Full-Time / Part-Time
Carter, Eddie	FT
Imes, Kelsie	PT
Keller, Kirk	FT
King, Todd	FT
Knotts, Stephen	FT
McArthur, Bobby	FT
Reese, Steven	FT
Wall, Angela	PT
Walters, Robert	PT
White, Ernie	FT
Wilkins, William	PT

Have all the faculty credentials been verified? (*Verify required documents are in personnel files.*)
Yes, All of the faculty are verified and the files are in the office.

Faculty Contact and Credit Hours

Faculty / Name	Full-Time Part-Time	Summer 2015		Fall 2015		Spring 2016	
		Contact	Credit	Contact	Credit	Contact	Credit
Carter, Eddie	PT					10	15
Imes, Kelsie	PT	10	7	17	12	19	13
Keller, Kirk	FT	9	6	19	18	20	18
King, Todd	FT	14	8	11	8	11	7
Knotts, Stephen	FT	11	7	19	11	40	28
McArthur, Bobby	PT					3	9
Reese, Steven	FT	9	5	20	13	24	15
Wall, Angela	FT	4	2	24	14	18	19
Walters, Robert	PT			5	3	5	3
White, Ernie	FT	3	3	3	3	5	3
Wilkins, William	PT			6	6		

Faculty / Name	Full-Time Part-Time	Summer 2016		Fall 2016		Spring 2017	
		Contact	Credit	Contact	Credit	Contact	Credit
Carter, Eddie	FT	8	5	25	17	22	15
Imes, Kelsie	PT	5	3				
Keller, Kirk	FT	7	6	21	20	19	15
King, Todd	FT	7	4	14	8	8	5
Knotts, Stephen	FT	9	7	31	17	19	13
McArthur, Bobby	PT			4	2	18	11
Reese, Steven	FT	22	13	21	14	30	18
Walters, Robert	PT			5	3	5	3
White, Ernie	FT	3	3	8	6	5	3

Faculty / Name	Full-Time Part-Time	Summer 2017		Fall 2017		Spring 2018	
		Contact	Credit	Contact	Credit	Contact	Credit
Carter, Eddie	FT	8	5	21	15	26	18
Keller, Kirk	FT	8	5	21	20	1	1
King, Todd	FT	7	4	11	8	16	14
Knotts, Stephen	FT	15	10	18	11	19	13
McArthur, Bobby	FT			26	16	22	14
Reese, Steven	FT	5	3	31	19	24	16
Walters, Robert	PT			5	3	5	3
White, Ernie	FT	3	3	11	9	14	12

It should be noted that many of these instructors teach courses in Industrial Systems Technology, Mechanical Engineering Technology, and/or Mechatronics Engineering Technology, as some courses overlap and are part of the core requirements for each program.

Faculty Demographics (2015-16; 2016-17; 2017-18)

	# Employees	Avg. Years of Service	% of Classes Taught By
Full-Time			
Part-Time			

Provide narrative for adequacy of faculty numbers. *(Do you have enough faculty to support your program?)*
As we operate now we do have enough, but we do not have enough faculty to try and promote growth.
It would be nice to hire another faculty member to go to the traditional high schools to teach CCP courses.

Professional development activities of faculty (2015-16; 2016-17; 2017-18)
Verify departmental professional development (PD) tracking logs are completed and filed in Program Review Professional Development folder. Verified

Student Demographics

Gender (A40320) *Unduplicated*			
Academic Year	**Female**	**Male**	**Total**
2015-2016	7	53	60
2016-2017	7	49	56
2017-2018	7	44	51

Gender (C40320) *Unduplicated*			
Academic Year	**Female**	**Male**	**Total**
2015-2016	1	13	14
2016-2017	1	13	14
2017-2018	2	14	16

Ethnicity (A40320) *Unduplicated*							
Academic Year	**American Indian**	**African American**	**Asian or Pacific Islander**	**Hispanic**	**Caucasian**	**Other / Unknown / Multiple**	**Total**
2015-2016	0	10	2	11	37	0	60
2016-2017	0	5	1	18	31	1	56
2017-2018	1	8	0	14	26	2	51

Ethnicity (C40320) *Unduplicated*							
Academic Year	**American Indian**	**African American**	**Asian or Pacific Islander**	**Hispanic**	**Caucasian**	**Other / Unknown / Multiple**	**Total**
2015-2016	0	2	1	1	9	1	14
2016-2017	0	0	0	2	11	1	14
2017-2018	0	3	2	3	8	0	16

Age Groups (A40320) *Unduplicated*						
Academic Year	**Under 18**	**18-24 years**	**25-34 years**	**35-44 years**	**45 and older**	**Total**
2015-2016	0	41	13	3	3	60
2016-2017	0	39	11	3	3	56
2017-2018	2	34	7	3	5	51

Age Groups (C40320) *Unduplicated*						
Academic Year	**Under 18**	**18-24 years**	**25-34 years**	**35-44 years**	**45 and older**	**Total**
2015-2016	8	5	0	0	1	14
2016-2017	2	11	1	0	0	14
2017-2018	8	7	0	1	0	16

Provide narrative for analysis of student demographics. *(Are you satisfied with your program demographics? Do you have a diverse population of students?)*
No, I am not "satisfied", but I do not try and pick students to be in our program by their race, age, or gender but by who they are and what they want to be. I do try and recruit all people.

Program Enrollment (Fall, Spring, Summer)

Program Enrollment (A40320) *Unduplicated*		
Year	**Enrollment**	**3-Year Average**
2015-16	60	68
2016-17	56	62
2017-18	51	56

Program Enrollment (C40320) *Unduplicated*		
Year	**Enrollment**	**3-Year Average**
2015-16	14	10
2016-17	14	13
2017-18	16	15

Provide narrative for analysis of program enrollment. *(Is enrollment increasing or decreasing? What possible reasons for increase/decrease? Describe how you plan to address program enrollment.)*
Enrollment is steady with expected highs and lows. We will continue to recruit local high school graduates, students currently in school through CCP, and with those who retire and want to complete their education for new employment.

Program Outcomes

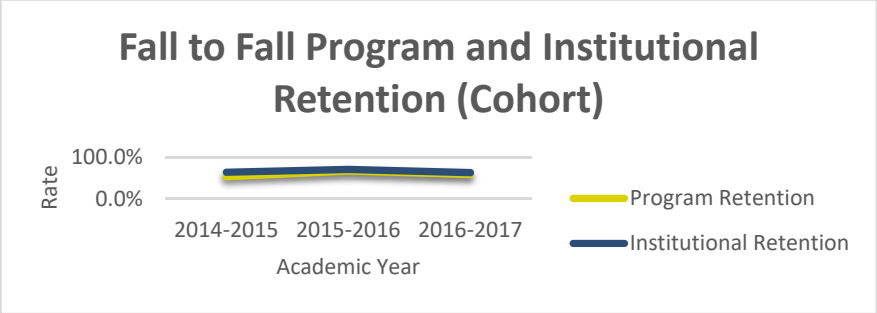
Retention

Baseline: 60% (*Average of last three years – 2014-15; 2015-16; 2016-17, fall-to-fall program retention*)
Standard: 63%
Target: 66%

Data/Results:

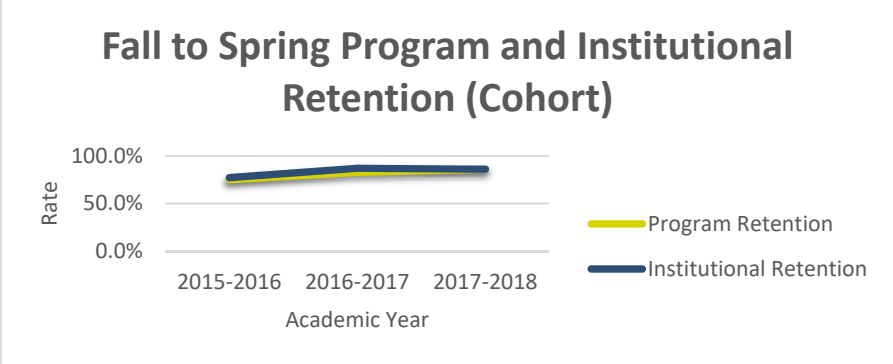
Fall-to-Fall

Year	Fall Enrollment	Grads	Return	Non-Completers	Program Retention	New Program	Institutional Retention
2014-2015	58	7	24	21	53.4%	6	63.8%
2015-2016	48	14	18	11	66.7%	5	70.8%
2016-2017	46	6	21	17	58.7%	2	63.0%



Fall-to-Spring

Year	Fall Enrollment	Grads	Return	Non-Completers	Program Retention	New Program	Institutional Retention
2015-2016	48	1	35	6	75.0%	1	77.1%
2016-2017	46	1	37	6	82.6%	2	87.0%
2017-2018	43	1	36	6	86.0%	0	86.0%



Provide narrative for analysis of program retention. *(Based on the data, provide a narrative of your analysis of fall to spring and fall to fall retention. Indicate factors that may have affected your retention. State any changes you plan to address for next year that may affect / increase your retention.)*
Over the past few semesters we have had a considerable amount of students that simply could not complete the work required to be successful in the program. Either they could not accurately do the work, or they did not have the work ethic to complete all of the assignments. We will continue to work with Academic skills, achievement coaches, and quality instruction to prepare our students for work in the industry.

Provide narrative for analysis of standard/target. *(As a result of the data analysis, indicate changes to the standard or target. Did you meet your standard/target? If you met your standard/target, what percentage would you like to increase your standard/target? Please provide an overall analysis of the results of your standard/target. Provide percentage of increase/decrease.)*
Of the three years averaged, we met our target percentage in 2015-16, but not in 2014-15 or 2016-17, so we aligned the standard and target based on the three-year average of program retention.

Completions

Baseline: 23 (*Average of last three years – 2015-16; 2016-17; 2017-18*)
Standard: 29
Target: 35

Data/Results:

Number of Graduates (Completions) *Unduplicated*				
	Degree	**Diploma**	**Certificate**	**Total**
2015-16	15	0	3	18
2016-17	8	0	17	25
2017-18	9	0	18	27

Provide narrative for analysis of completions. *(Are you satisfied with your completion rates? How might you increase your completion rates?*
No, I am not satisfied with the completion rates. I hope to give the students that come into our program a clear understanding of the work, and the effort needed to be successful in the program, and to be able to gain employment.

Provide narrative for analysis of standard/target. *(As a result of the data analysis, indicate changes to the standard or target. Did you meet your standard/target? If you met your standard/target, what percentage would you like to increase your standard/target? Please provide an overall analysis of the results of your standard/target. Provide percentage of increase/decrease.)*
Standards and targets were set based on a three-year average from2015-2018.

Job Placement / Employment *(to be provided by program)*

Baseline: 90% (*Average of last three years % employed/# education – 2015-16; 2016-17; 2017-18*)
Standard: 93%
Target: 94%

Data/Results:

Employment Demand						
Year	**Graduates**	**# Employed (withi#n 1 Yr)**	**# Seeking More Education (within 1 Yr)**	**% Employed & Seeking More Education**	**Unknown**	**Other/Comments**
2015-16	18	9	7	89%	1	
2016-17	25	7	7	56%	0	
2017-18	27	7	27	126%	0	

Provide narrative for analysis of job placement rates. *(Are students finding jobs within the program of study?) (How can your program promote higher employment of students in the field?)*
3-year average of 92% Job Placement after graduation

Provide narrative for analysis of standard/target. *(As a result of the data analysis, indicate changes to the standard or target. Did you meet your standard/target? If you met your standard/target, what percentage would you like to increase your standard/target? Please provide an overall analysis of the results of your standard/target. Provide percentage of increase/decrease.)*
This is a three-year baseline and the standard and target have been set based on the baseline percentage.

Provide narrative for analysis of Labor Market Data. *(Review Labor Market Data provided and provide an assessment of the data.)*
The labor market data does not reflect what we experience in our area. We have direct relationships with industry partners and our the data must not be reflected with the market reports.

Licensure and Certification Passing Rates (if applicable)

Baseline: XX% (*Average of last three years; identify last three licensure years*)
Standard: XX%
Target: XX%

Data/Results: Not applicable

Licensure / Certification Exam – Title

Year	# Tested	% Passing
2010-11		
2012-13		
2013-14		
2014-15		
2015-16		
2016-17		

Provide narrative for analysis of licensure / certification passing rates. *(Are you satisfied with your program licensure rates?)*
Not applicable

Provide narrative for analysis of standard/target. *(As a result of the data analysis, indicate changes to the standard or target. Did you meet your standard/target? If you met your standard/target, what percentage would you like to increase your standard/target? Please provide an overall analysis of the results of your standard/target. Provide percentage of increase/decrease.)*
Not applicable

Third-Party Credentials (if applicable) SOLIDWORKS CERTIFICATION

Baseline: 12# (*Average of last three years – 2015-16; 2016-17; 2017-18*)
Standard: 15#
Target: 18#

Data/Results:

Third-Party Credentials

Year	Credentials for Program of Study	# Tested	# Completers
2015-16	Solidworks Associate Level Exam	15	12
2016-17	Solidworks Associate Level Exam	15	12
2017-18	Solidworks Associate Level Exam	0	0

Provide narrative for analysis of third-party credentials. *(Are there other industry-recognized credentials that needs to be addressed for the program of study?) (What are other means to promote program third-party credentials?)*
Yes, our students do well with the Solidwork certification. The students that struggle with passing the exam get the benefit to understand where they are and to better themselves and prepare for the next one. It is a great encourager for our students, pass or fail.

Provide narrative for analysis of standard/target. *(As a result of the data analysis, indicate changes to the standard or target. Did you meet your standard/target? If you met your standard/target, what percentage would you like to increase your standard/target? Please provide an overall analysis of the results of your standard/target. Provide percentage of increase/decrease.)*
We will incorporate more parts to practice that will prepare them for the exam.

Course Success

Analysis of student success in courses (2015-16; 2016-17; 2017-18)
Provide narrative for analysis of student success in courses. *(Ex – Are more students successful in online courses versus traditional? Are students more successful in certain courses?)*
Students are more successful in traditional courses. Students tend to procrastinate in completing their assignments and attempt to do less work than required to be successful.

Analysis of student success in distance learning courses (2015-16; 2016-17; 2017-18)

Course Success Rates by Method of Instruction				
Semester	**Department**	**Course Number**	**% Success**	**Method of Instruction**
Fall 2016	MET	DFT-111	84%	ONLINE
Fall 2017	MET	DFT-111	67%	ONLINE
Fall 2018	MET	DFT-111	80%	ONLINE
Fall 2016	MET	DDF-212	90%	SEATED
Fall 2017	MET	DDF-212	100%	SEATED
Fall 2018	MET	DDF-212	100%	SEATED
Fall 2016	MET	HYD-111-61	95%	SEATED
Fall 2017	MET	HYD-111-61	94%	SEATED
Fall 2018	MET	HYD-111-61	92%	SEATED
Fall 2016	MET	HYD-111-63	86%	SEATED
Fall 2017	MET	HYD-111-63	75%	SEATED
Fall 2018	MET	HYD-111-63	NA	SEATED

Provide narrative for analysis of student success in distance learning courses. *(Are distance education course success rates equivalent to the success rates for other methods of instruction?)*
The Distance Education Success Rates are lower (77%) than the traditional methods of instruction (91.5%). We are continually working to improve and enhance the quality of instruction for the online courses.

Analysis of Program Learning Outcomes (PLO) (2015-16; 2016-17; 2017-18)

- Document PLO cycle for the next four years (2018-19, 2019-20, 2020-21, and 2021-22) in the table below.
- File program learning outcome reports for the past three years (2015-16, 2016-17, and 2017-18) in the Program Review Attachment folder.
- Document changes to the program learning outcomes and/or assessment cycle.

Assessment Cycle	Program Learning Outcomes
2018-19	EGR-250 PLO#4
2019-20	DDF-212 PLO#1 Fall 19
2019-20	MEC-145 PLO#2 Spring 20
2020-21	HYD-111 PLO#3 Fall 20
2020-21	EGR-250 PLO#4 Spring 20
2021-22	DDF-212 PLO#1 Fall 21

Other Assessments

Analysis of graduate survey data (2015-16; 2016-17; 2017-18)
Provide narrative for analysis of program-specific graduate survey data. *(What did you learn from the results? What did your graduates indicate needed to be revised within your program?)*
100% of the surveys are Very Satisfied or Satisfied with the program.

Analysis of employer survey data (2015-16; 2016-17; 2017-18)
Provide narrative for analysis of program-specific employer survey data. *(What did employers indicate needs improvement within your program (equipment, facilities, program offerings/certificates?)*
Employers continue to stress the need of the Small Skills and the negative impact of social networking the wrong way. The Employers are very satisfied with our students use of the design software and the opportunity to obtain the Solidworks Certification.

External Reviews

In addition to SACSCOC, is there an accrediting body specifically related to the program? If so, please name the professional organization, describe the program's current status, and most recent date of accreditation.
N/A

Resources

Program facilities - location and adequacy
Provide narrative for program facilities adequacy and/or needs.
Our Lab is entirely too small to meet the needs of our students. We have a lot of quality equipment that we need to put in a better location.

Library resources
Provide narrative for program library resources. *(Are library resources adequate for your program?)*
Library resources are adequate.

Planning Objectives (2015-16; 2016-17; 2017-18)

- Verify previous year's prioritized planning objectives end-of-year status reports are filed in Program Review Planning Objective EOY (End of Year) Status Reports folder.
- Provide a summary of planning objectives submitted for the last three years, including the use of results, of the planning objectives in the table provided.

Summary of Planning Objectives

Planning Year	Objective(s) Submitted	Use of Results
2015-16	Connex 250	DDF-212, MEC-276, DFT-112
2016-17	EGR-250 Trainers	EGR-250 LABs
2017-18	Dremel 3D Printers	DFT-112 and CCP

Overall analysis of the strengths of the program
Provide narrative for analysis of the strengths of the program.
Our program is very strong in preparing our students both to be successful in the industry of design, and they are prepared to further their education if that is their personal goal.
With continued enhancements to all of our courses, advice from our industry partners, our students are getting a quality education.

Overall analysis of the weaknesses of the program
Provide narrative for analysis of the weaknesses of the program.
Our weakness is our inability to keep up with technology due to state funding and our lack of space for our students to utilize equipment that we currently have.

Recommendations

- Complete 2018-2019 Program/Service Review/Outcome Assessment Recommendation Worksheet to address action items from program review and outcome analysis with target date; and methods to assess action items.
- File Review/Outcome and Assessment Recommendation Worksheet in Recommendation and Follow-Up folder.
- Recommendation follow-up reports to be addressed spring semester following review year (2019-20 and 2020-21).

Recommendations from Program Review and Outcome Assessments

2018-2019 Program Review and Outcome Assessments Recommendations
(Address program outcome assessments that fall below the established standard and/or target and additional recommendations resulting from the review.)

Outcome *(Identify projected outcomes as a result of your program/service review.)*	**Target Date** *(Identify your projected target date for completion of action items.)*	**Actions/strategies to achieve outcomes and how you will assess the action/strategy**
Retention – Baseline = 60% Standard = 63% Target = 66%	Fall 2021	Continue to work with Academic skills, achievement coaches, and provide quality instruction to prepare our students for work in the industry.
Completions - Baseline = 23 Standard = 29 Target = 35	Fall 2021	Provide students with clear expectations of the work and effort needed to be successful in the program and to be able to gain employment.
Job Placement - Baseline = 90% Standard = 93% Target = 94%	Fall 2021	Continue to work with advisory committee members and industry employers to place students into jobs.
Licensure/Certification Passing Rates (if applicable) - Not applicable.	Not applicable.	Not applicable.
Additional Recommendation - Third-party certifications (Solidworks Associate Level Exam) Baseline = 12# Standard = 15# Target = 18#	Fall 2021	Incorporate more parts to practice that will prepare students for the exam.

VP / AVP Approval

- Using DocuSign (electronic signature), appropriate Vice President/Associate Vice President is asked to review and approve the Program Review and Outcome Assessment and Recommendations as submitted.

Date of Review / Approval: DocuSigned by: Dorothy Moore C63FA9C7DD30473... 5/7/2020

Signature (electronic signature): DocuSigned by: Patty Pfeiffer 6FEB32F14792429... 5/7/2020