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

Department Name: Computer-Integrated Machining

Mission/Purpose: The purpose of the Computer-Integrated Machining Program is to prepare students with the analytical, creative and innovative skills necessary to take a production idea from an initial concept through design, development, and production, resulting in a finished product that meets the parts specifications and tolerances.

Degrees, Diplomas, and Certificates Offered: List all degrees, diplomas, and certificates offered.
Computer-Integrated Machining (A50210)
Computer-Integrated Machining Diploma (D50210)
Computer-Integrated Machining - Basic Machining Certificate (C50210A)
Computer-Integrated Machining - Intermediate Machining Certificate (C50210B)
Computer-Integrated Machining - CNC Operator Certificate (C50210C)
Computer-Integrated Machining - CNC Programming Certificate (C50210D)
Computer-Integrated Machining – Coordinate Measuring Machine Certificate (C50210E)
Computer-Integrated Machining - Computer-Aided Manufacturing Certificate (C50210F)

Describe how the program's mission aligns with the College's vision, mission, core values, and strategic goals.
Graduates should qualify for employment in a variety of positions including manufacturing and drafting in industrial companies and other manufacturing organizations.

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
No curriculum changes, revisions, deletions since 2015-16 Program Review	

Provide an overview of the significance of the program changes and improvements that occurred over the past three years
There have been no significant program curriculum changes, revisions, deletions since 2015-16.

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

Summary of Advisory Committee Activities

Year	Meeting Dates	Recommendations / Activities
2015-16	12-9-15/7-14-16	Implementing PMI/New machinery
2016-17	12-8-16/3-15-17	Introduced PMI/update Wayne Works Facility
2017-18	11-1-17/5-1-18	Implemented and Introduced AMI

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.)*

Meet with Advisory Committee members at their facility and introduce students to actual working companies.

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?)*

Students have multiple job opportunities within the Machining industry. Trends are more CNC machining rather than manual machining. Although manual machining is still relevant.

Faculty Profile

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

Faculty / Name	Full-Time / Part-Time
Paul Compton	Full Time
Bailee Daniels	Full Time (Started Spring 2016)
Bailee Daniels	Part Time (Fall 2015)
Mark Barnett	Part Time (Fall 2015)

Have all the faculty credentials been verified? (*Verify required documents are in personnel files.*)

Faculty credentials have been verified.

Faculty Contact and Credit Hours

Faculty / Name	Full-Time Part-Time	Summer 2015		Fall 2015		Spring 2016	
		Contact	Credit	Contact	Credit	Contact	Credit
Paul Compton	Full-Time	8	4	17	10	22	10
Bailee Daniels	Full-Time					19	11
Bailee Daniels	Part-Time			11	7		
Mark Barnett	Part-Time			12	6		

Faculty / Name	Full-Time Part-Time	Summer 2016		Fall 2016		Spring 2017	
		Contact	Credit	Contact	Credit	Contact	Credit
Paul Compton	Full-Time	8	4	17	10	22	10
Bailee Daniels	Full-Time			25	15	19	11

Faculty / Name	Full-Time Part-Time	Summer 2017		Fall 2017		Spring 2018	
		Contact	Credit	Contact	Credit	Contact	Credit
Paul Compton	Full-Time	8	4	17	10	22	10
Bailee Daniels (1st 8 weeks)	Full-Time			25	15	19	11
Howard Gilbert (2nd 8 weeks)	Part-Time			25	15		

Program Review and Outcome Assessment, 2018-19

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

	# Employees	Avg. Years of Service	% of Classes Taught By
Full-Time	2	28	100%
Part-Time	3	1	30%

Provide narrative for adequacy of faculty numbers. *(Do you have enough faculty to support your program?)*
We have enough faculty members at this time. Although in the near future we are looking to have lab assistants added to help us with specific classes.

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.

These have been verified.

Student Demographics

Gender (A50210) *Unduplicated*			
Academic Year	**Female**	**Male**	**Total**
2015-2016	5	40	45
2016-2017	7	33	40
2017-2018	5	28	33

Gender (D50210) *Unduplicated*			
Academic Year	**Female**	**Male**	**Total**
2015-2016	0	0	0
2016-2017	0	0	0
2017-2018	0	0	0

Gender (C50210) *Unduplicated*			
Academic Year	**Female**	**Male**	**Total**
2015-2016	0	0	0
2016-2017	0	2	2
2017-2018	0	1	1

Ethnicity (A50210) *Unduplicated*							
Academic Year	**American Indian**	**African American**	**Asian or Pacific Islander**	**Hispanic**	**Caucasian**	**Other / Unknown / Multiple**	**Total**
2015-2016	0	10	0	3	32	0	45
2016-2017	0	6	1	6	26	1	40
2017-2018	0	6	1	4	21	1	33

Program Review and Outcome Assessment, 2018-19

Ethnicity (D50210) *Unduplicated*							
Academic Year	American Indian	African American	Asian or Pacific Islander	Hispanic	Caucasian	Other / Unknown / Multiple	Total
2015-2016	0	0	0	0	0	0	0
2016-2017	0	0	0	0	0	0	0
2017-2018	0	0	0	0	0	0	0

Ethnicity (C50210) *Unduplicated*							
Academic Year	American Indian	African American	Asian or Pacific Islander	Hispanic	Caucasian	Other / Unknown / Multiple	Total
2015-2016	0	0	0	0	0	0	0
2016-2017	0	0	0	0	2	0	2
2017-2018	0	0	0	1	0	0	1

Age Groups (A50210) *Unduplicated*						
Academic Year	Under 18	18-24 years	25-34 years	35-44 years	45 and older	Total
2015-2016	0	22	17	2	4	45
2016-2017	0	19	13	6	2	40
2017-2018	0	16	8	3	6	33

Age Groups (D50210) *Unduplicated*						
Academic Year	Under 18	18-24 years	25-34 years	35-44 years	45 and older	Total
2015-2016	0	0	0	0	0	0
2016-2017	0	0	0	0	0	0
2017-2018	0	0	0	0	0	0

Age Groups (C50210) *Unduplicated*						
Academic Year	Under 18	18-24 years	25-34 years	35-44 years	45 and older	Total
2015-2016	0	0	0	0	0	0
2016-2017	0	2	0	0	0	2
2017-2018	0	1	0	0	0	1

Provide narrative for analysis of student demographics. *(Are you satisfied with your program demographics? Do you have a diverse population of students?)*

Majority of students are white, male and between the ages of 18-24. There is room for advancement for females in the program. The goal is to have a more equitable balance of student demographics in the program.

Program Review and Outcome Assessment, 2018-19

Program Enrollment (Fall, Spring, Summer)

Program Enrollment (A50210) *Unduplicated*		
Year	Enrollment	3-Year Average
2015-16	45	48
2016-17	40	45
2017-18	33	39

Program Enrollment (D50210) *Unduplicated*		
Year	Enrollment	3-Year Average
2015-16	0	1
2016-17	0	0
2017-18	0	0

Program Enrollment (C50210) Unduplicated)		
Year	Enrollment	3-Year Average
2015-16	0	2
2016-17	2	1
2017-18	1	1

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.)*
4-year Average has dropped due to a more favorable job market. Communicating with local employers to encourage formal education before hiring to indicate the importance of students completing their degree or certification.

Program Review and Outcome Assessment, 2018-19

Program Outcomes

Retention

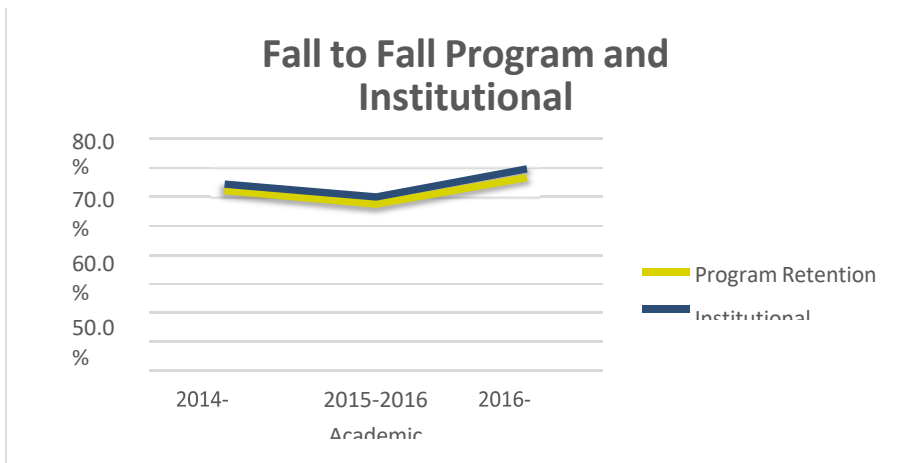**Baseline:** 62% (*Average of last three years – 2014-15; 2015-16; 2016-17, _fall-to-fall_ program retention*)
**Standard:** 64%
Target: 67%

Data/Results:

Fall-to-Fall

Year	Fall Enrollment	Grads	Return	Non-Completers	Program Retention	New Program	Institutional Retention
2014-2015	45	8	20	16	62.2%	1	64.4%
2015-2016	40	3	20	16	57.5%	1	60.0%
2016-2017	33	12	10	10	66.7%	1	69.7%

Fall-to-Spring

Year	Fall Enrollment	Grads	Return	Non-Completers	Program Retention	New Program	Institutional Retention
2015-2016	40	0	33	7	82.5%	0	82.5%
2016-2017	33	1	23	9	72.7%	0	72.7%
2017-2018	27	1	23	3	88.9%	0	88.9%

Program Review and Outcome Assessment, 2018-19
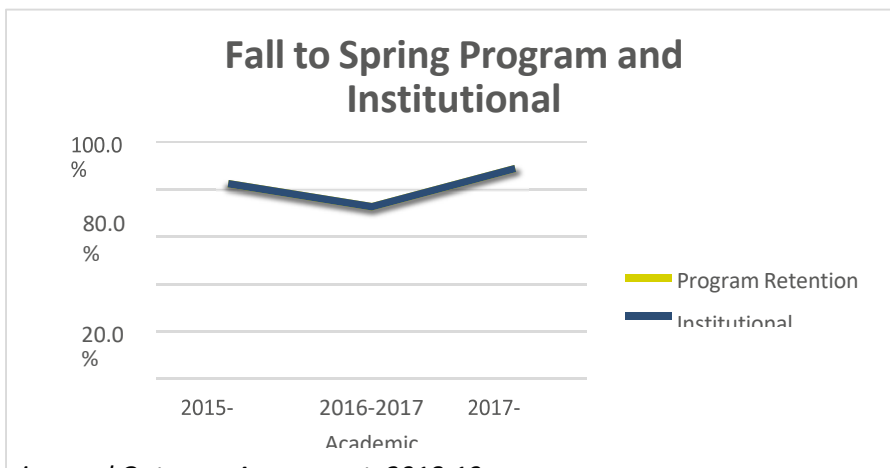
Provide narrative for analysis of program retention. *(Based on the data, provide a narrative of your analysis of fall to fall retention. Indicate factors that may have affected your retention. State any changes you plan to address for next year that may affect / increase your retention.)*
2-year Associates Degree Program that starts in a Fall Semester and ends in the second Spring semester. Summer has an inherent negative reflection on a Fall to Fall data chart. Fall to Spring reflects a 2-year average of 67.5%. Planning on implementing more trips to local shops to show the students different companies to keep them interested and to help with retention. Students are also working in industry as they go to school.

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.)*
New program retention standard and target was set based on the three-year baseline data from 2014-15, 2015-16, and 2016-17 fall to fall retention.

Completions

Baseline: 17 (*Average of last three years – 2015-16; 2016-17; 2017-18*)
Standard: 19
Target: 26

Data/Results:

Number of Graduates (Completions) *Unduplicated*				
	Degree	**Diploma**	**Certificate**	**Total**
2015-16	5	0	7	12
2016-17	12	0	4	16
2017-18	10	0	14	24

Provide narrative for analysis of completions. *(Are you satisfied with your completion rates? How might you increase your completion rates?*
Student certifications will be prioritized.

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.)*
Narrative
New completion standard and target was set based on the three-year baseline data from 2015-16, 2016-17, and 2017-18.

Program Review and Outcome Assessment, 2018-19

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

Baseline: 124% (*Average number employed an/or seeking more education for the last three years –*
                 2015- 16; 2016-17; 2017-18)
Standard: 126%
Target: 128%

Data/Results:

Employment Demand						
Year	Graduates	# Employed (within 1 Yr)	# Seeking More Education (within 1 Yr)	% Employed & Seeking More Education	Unknown	Other/Comments
2015-16	12	12	3	125%		
2016-17	16	14	5	119%		
2017-18	24	20	11	129%		

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?)
Every student that has actively sought employment in CIM has been successful in finding 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.)*
New employment demand standard and target was set based on the three-year baseline data from 2015-16, 2016-17, and 2017-18. Please note that graduates are employed within one year, while seeking more education. Therefore, the percent employed and seeking more education exceeds 100%.

Provide narrative for analysis of Labor Market Data. *(Review Labor Market Data provided and provide an assessment of the data.)*
Market data indicates a 2.09% job growth and the median hourly earnings $17.74/hr.

Program Review and Outcome Assessment, 2018-19

Licensure and Certification Passing Rates (if applicable)

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

Data/Results: Not applicable for the Computer-Integrated Machining program.

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)

Baseline: 84 # (*Average number of completers for the last three years – 2015-16; 2016-17; 2017-18*)
Standard: 88
Target: 92

Data/Results:

Third-Party Credentials

Year	Credentials for Program of Study	# Tested	# Completers
2015-16	PMI Tape and Rule	10	10
	PMI Slide Caliper	10	10
	PMI Gage Measurement	10	10
	PMI Angle Measurement	10	10
	PMI Micrometer Measurement	10	10
	PMI Dial Gage Measurement	10	10
	PMI Tape and Rule	11	11
	PMI Slide Caliper	11	11
	PMI Gage Measurement	11	11
	PMI Angle Measurement	11	11

Program Review and Outcome Assessment, 2018-19

2016-17	PMI Micrometer Measurement	11	11
	PMI Dial Gage Measurement	11	11
2017-18	PMI Tape and Rule	19	19
	PMI Slide Caliper	19	19
	PMI Gage Measurement	19	18
	PMI Angle Measurement	19	18
	PMI Micrometer Measurement	19	18
	PMI Dial Gage Measurement	19	16
	AMI Primary Standards	5	5
	AMI Flexible Measuring Tools	5	5
	AMI Support and Layout	5	5
	AMI Surface Finish Inspection and Hardness	5	5

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?)*
We are going to start including more AMI Certifications which is more advanced than our PMI Certifications beginning in Fall 2019.

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 would like to increase our standard and target by 5% each.
New third-party credential standard and target was set based on the three-year baseline data from 2015-16, 2016-17, and 2017-18.

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 where hands-on Labs are prioritized.

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 2015	MAC	131	100%	Hybrid
Fall 2015	MAC	143	88%	Hybrid
Fall 2015	MAC	151	78%	Hybrid
Fall 2015	MAC	121	95%	Traditional
Fall 2015	MAC	141	92%	Traditional
Fall 2015	MAC	160	60%	Traditional
Fall 2015	MAC	171	90%	Traditional
Fall 2015	MAC	172	90%	Traditional
Fall 2015	MAC	228	100%	Traditional

Program Review and Outcome Assessment, 2018-19

Fall 2015	MEC	231	100%	Traditional
Fall 2016	MAC	121	83%	Hybrid
Fall 2016	MAC	131	85%	Hybrid
Fall 2016	MAC	143	79%	Hybrid
Fall 2016	MAC	151	100%	Hybrid
Fall 2016	MAC	141	85%	Web Support/Assisted
Fall 2016	MAC	160	86%	Web Support/Assisted
Fall 2016	MAC	171	92%	Web Support/Assisted
Fall 2016	MAC	172	83%	Web Support/Assisted
Fall 2016	MAC	228	92%	Web Support/Assisted
Fall 2016	MEC	231	100%	Web Support/Assisted
Spring 2016	DFT	119	95%	Hybrid
Spring 2016	MAC	132	82%	Hybrid
Spring 2016	MAC	233	100%	Hybrid
Spring 2016	MAC	224	87%	Traditional
Spring 2016	MAC	124	63%	Web Support/Assisted
Spring 2016	MAC	142	79%	Web Support/Assisted
Spring 2016	MEC	232	100%	Web Support/Assisted
Summer 2016	MAC	122	92%	Web Support/Assisted
Summer 2016	MAC	122	92%	Web Support/Assisted
Fall 2017	MAC	131	94%	Hybrid
Fall 2017	MAC	143	78%	Hybrid
Fall 2017	MAC	151	89%	Hybrid
Fall 2017	MAC	121	94%	Traditional
Fall 2017	MAC	141	88%	Traditional
Fall 2017	MAC	160	100%	Traditional
Fall 2017	MAC	171	94%	Traditional
Fall 2017	MAC	172	93%	Traditional
Fall 2017	MAC	228	100%	Traditional
Fall 2017	MEC	231	100%	Traditional
Spring 2017	DFT	119	80%	Hybrid
Spring 2017	MAC	132	85%	Hybrid
Spring 2017	MAC	233	100%	Hybrid
Spring 2017	MAC	124	75%	Traditional
Spring 2017	MAC	142	88%	Traditional
Spring 2017	MAC	224	80%	Traditional
Spring 2017	MEC	232	100%	Traditional
Summer 2017	MAC	122	100%	Traditional
Summer 2017	MAC	222	100%	Traditional
Spring 2018	DFT	119	100%	Hybrid
Spring 2018	MAC	132	100%	Hybrid
Spring 2018	MAC	233	100%	Hybrid
Spring 2018	MAC	124	88%	Traditional
Spring 2018	MAC	142	100%	Traditional
Spring 2018	MAC	224	93%	Traditional
Spring 2018	MEC	232	100%	Traditional

Program Review and Outcome Assessment, 2018-19

Summer 2018	MAC	122	100%	Traditional
Summer 2018	MAC	222	94%	Traditional

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?)*
Distance Learning courses are not a part of the curriculum. However, students in hybrid courses had an average of 90% course success; students in traditional courses averaged 93% course success; and students in web-supported courses had a 96% course success rate.

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	PLO#3 Collected in FALL 2018/Analyzed SP 2019
2019-20	PLO#2
2020-21	PLO#1
2021-22	PLO#3

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?)*
No new information was learned from the survey.

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?)*
No new information was learned from the survey.

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.
Not applicable

Program Review and Outcome Assessment, 2018-19

Resources

Program facilities - location and adequacy
Provide narrative for program facilities adequacy and/or needs.
Additional space is needed in order to grow the program and adequately serve the needs of the students.

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	Manual Lathes HAAS CNC Turning Centers	Received, Installed, Utilizing (Received using Grant funds)
2016-17	Abrasive Finishing Machine HEPA Air Cleaning Filter System for Laser Engraver	Received, Installed, Utilizing Received, Installed, Utilizing
2017-18	Starrett AMI Tool Box	Received, Installed, Utilizing

Overall analysis of the strengths of the program
Provide narrative for analysis of the strengths of the program.
Computer Integrated Machining program continuously monitors industry trends and alters curriculum according to industry change. Special speakers are being sought for new technology and applications. Trips are ongoing to new shops so students can get a wide variety of different types of machinery that is in industry. Local employers seek manual and CNC machinist and/or recommendations and applications.

Overall analysis of the weaknesses of the program
Provide narrative for analysis of the weaknesses of the program.
Students leave the program with limited field experience for job placement. Employers have to provide specific training on machining equipment and software they market resulting in students being required to work on appurtenances.

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).

Program Review and Outcome Assessment, 2018-19

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.)

Action Items *(Identify action items as a result of your program/service review and outcome assessment.)*	Target Date *(Identify your projected target date for completion of action items.)*	Assessment of Action Items *(State the methods of assessment; how you plan to evaluate/assess the results of the action items.)*
Retention - Baseline = 62% Standard = 64% Target = 67%	2021-2022 Academic Year	Use Fall to Spring Program Retention Data for a more comprehensive analysis of Program Assessment
Completions - Baseline = 17 Standard = 19 Target = 26	2021-2022 Academic Year	Use Fall to Summer Program Completions Data
Job Placement (and/or seeking further education) Coordinate Student –Employer communications Baseline = 124% Standard = 126% Target = 128%	2019 Summer 2021-2022 Academic Year	Follow up with Students that have been employed after graduation Track student job placement in addition to students who seek further education (WCC Office of IE)
Licensure/Certification Passing Rates (if applicable) - Not applicable.	N/A	N/A
Additional Recommendation – Third Party Credentials: Baseline = 84 Standard = 88 Target = 92	2021-2022 Academic Year	Track number of student 3rd-party credentials awarded
Additional Recommendation - Use Moodle as a supplemental instruction resource	Fall 2019	Monitor students in each module of Moodle

Program Review and Outcome Assessment, 2018-19

Approvals

- Using DocuSign (electronic signature), the Office of Institutional Effectiveness (IE) will review the Program/Service Review and Outcome Assessments when completed by the responsible program/service personnel. The Office of Institutional Effectiveness will forward the review documents to the appropriate administrator upon completion.
- Using DocuSign (electronic signature), appropriate Vice President/Associate Vice President is asked to review and approve the Service Review and Outcome Assessment and Recommendations as submitted.

IE Acceptance / Date: *Dorothy Moore*   5/14/2019
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Administrator Approval / Date: *Patty Pfiffer*   5/7/2020
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Program Review and Outcome Assessment, 2018-19