



# 2016-17 Academic Department Annual Report

**Academic Department:**  
**Document Prepared By:**

Manufacturing  
John Doneth

## **Annual Report Submission Instructions:**

This Annual Report of your Academic Department is intended to serve as a summary of departmental activities over the past year and as an outline of plans for the upcoming year.

Please note that responses are limited to the space provided below for each prompt and do not need to be written in narrative form (you are welcome to use bullet points/lists, as appropriate).

Please submit your Academic Department 2016-17 Annual Report to your Dean via email by May 31<sup>st</sup>.

For your reference, prior year reports (2011-2015) can be found on the Instructional Support website, <http://www.grcc.edu/instructionalsupport/departmentyearendreports>. If you have any questions about the 2015-16 reports entered into WEAVEonline, please contact Sheila Jones, Dean of Instructional Support, [sheilajones@grcc.edu](mailto:sheilajones@grcc.edu) or x4289.

## **Part I: Report on 2016-17 Progress**

Part I is intended to provide a “big picture” overview of your department’s activities during this past academic year. When completing the sections below, please consider the main points/highlights of each category.

### ***Current Year Goals & Outcomes***

This section asks you to provide details about the status of your department’s goals and outcomes for this past year. Please limit your response to the space provided in the text boxes below.

The current year goals were:

1. To work with the counseling department to further streamline student questions and advisement. This goal was to help ensure students are in the correct courses.
  - a. This was accomplished by working very closely with Viki Maxa and passing along as much information as possible to her departments. The Department Head also answered many questions during the year that came up for classroom placement.

2. Revise Plastics articulation agreement with Ferris State University
  - a. This was accomplished by working with Instructional Support to change the agreement with Ferris State.
3. Start the Academic Program Review cycle with Tooling and Manufacturing along with Plastics.
  - a. This has been started for the next program review cycle. This process now spans two academic years; this should be close to completed or done by the next Annual Report.



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### ***Departmental Professional Development***

In this section, please provide details about your department's emphasis for professional development during this year. Please limit your response to the space provided in the text box below.

Professional Development was completed during the opening day meetings. Training was completed in the following areas:

1. New graduation requirements and how this affects advising the students in the Manufacturing Department.
2. Training was conducted on using the Google Applications such as Google Drive. Hopefully this can be implemented next year to help with scheduling and eliminating last minute changes.
3. Training was done on how the new Academic Program Review process will be conducted and how to plan ahead to prepare.
4. Training was conducted on Open Education Resources (OER), websites, alternative textbook options, and ways to help save money such as course packs and vendor information that can legally be reproduced.
5. All faculty completed Professional Development individually according to their standings in the FPE process
6. Two faculty members utilized Perkins funds to attend a Leadership Conference and a Trade show.

### ***Departmental Advising Plan & Outcomes***

In this section, please describe your department's advising plan and outcomes for this year. Please limit your response to the space provided in the text boxes below.

Student advising is a continuous process by department faculty. The technology area faculty are the best advisors to our students since they know what will be required of the students in industry. Faculty advise students during their office hours as well as during class periods, where appropriate. The department advising plan is on the webpage at [grcc.edu/manufacturing](http://grcc.edu/manufacturing).

The department has planned advising periods one week each semester. The goal is to make sure students are on track, have classes figured out, and they have a plan for getting a certificate, degree, and or transfer.

***Program Accreditation Updates***

In this section, please provide details regarding any program accreditation or re-accreditation that occurred this past year, if applicable. Please limit your response to the space provided in the text boxes below.

N/A



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### ***Perkins & Key Performance Indicators***

In this section, please discuss Perkins and Key Performance Indicators for programs (total student enrollment, demographic profile, new students, student progress rate (transferred, graduated, enrolled), number of graduates, graduate employment rate, time to completion), if applicable. Please limit your response to the space provided in the text boxes below.

Program Plastic Manufacturing Technology

PERKINS CORE PERFORMANCE INDICATORS FY 2016-2017

1P1: Technical Skills Attainment

N/A

2P1: Credential, Certificate, or Degree Attainment

Program performance levels for 2P1 were 11% below than the state standard.

3P1: Student Retention and Transfer

The program performance levels were under than the state standard by 5.78%. That number is within the 90% to allow it to still meet the standard.

4P1: Student Placement

The program exceeded the state performance level by 13%.

5P1: Student Completion in Nontraditional Fields

Program performance levels were under the state standard by 10.8% and did not meet the state standard.

Program Quality Science

PERKINS CORE PERFORMANCE INDICATORS FY 2016-2017

1P1: Technical Skills Attainment

N/A

2P1: Credential, Certificate, or Degree Attainment

Program performance levels did not meet the state standard and were under by 12.82%

3P1: Student Retention and Transfer

The program performance levels were 4.76% above the state standard.

4P1: Student Placement

The program exceeded the state performance level by 13%.

5P1: Student Completion in Nontraditional Fields

Program performance levels did not meet the state standard and were under by 15.58%

5P2: Student Participation in Nontraditional Fields

Program performance levels did not meet the state standard and were under by 11.9%

**Program Tooling/Manufacturing**

PERKINS III CORE PERFORMANCE INDICATORS 2016-2017

1P1: Technical Skills Attainment

N/A

2P1: Credential, Certificate, or Degree Attainment

Program performance levels did not meet the state standard and were under by 11%

3P1: Student Retention and Transfer

The program exceeded the state performance level by 3.19%.

4P1: Student Placement

The program exceeded the state performance level by 11.9%

5P1: Student Completion in Nontraditional Fields

Program performance levels did not meet the state standard and were under by 16.78%

5P2: Student Participation in Nontraditional Fields

Program performance levels did not meet the state standard and were under by 10.3%

**Program Welding Technology**

PERKINS CORE PERFORMANCE INDICATORS FY 2016-2017

1P1: Technical Skills Attainment

N/A

2P1: Credential, Certificate, or Degree Attainment

Program performance levels were 7.10% above than the state standard.

3P1: Student Retention and Transfer

The program performance levels were 4.33% below the state standard but still within the 90% to meet the goal.

4P1: Student Placement

The program exceeded the state performance level by 13%.

5P1: Student Completion in Nontraditional Fields

Program performance levels were 4.22% above the state standard

5P2: Student Participation in Nontraditional Fields

Program performance levels did not meet the state standard and were under by 7.78%



## ***Learning Outcomes Assessment Data & Findings on Past Year's Projects***

In this section, please summarize your department's assessment work for this year, outlining the Program Learning Outcomes (PLOs) or Institutional Learning Outcomes (ILOs) assessed, the assessment measure, the findings, and the improvements planned based on the findings. Please limit your response to the space provided in the text boxes below.

### **Tooling and Manufacturing:**

#### **ILO: Critical Thinking**

**Project Title:** Manual Engine Lathe Turning/Threading Assessment

**Purpose:** Assess student comprehensions/capabilities on the proper/safe use of a manual engine lathe.

**Brief Description:** Students will set-up and safely operate a manual engine lathe to complete an assessment consisting of machining elements most often performed on a manual engine lathe. These elements will consist of turning a diameter to required thread specifications; squaring a shoulder to required length; machining a thread relief to required specifications; single-point threading a diameter to class 2 thread specifications; and finishing the thread to print specifications. Data will be collected (on the shop floor) during the assessment by instructor observations. Additional (completion) data will be collected by the use of standard metrology equipment /tools to inspect the finished part to print specifications.

**Timeline:** Winter semester.

**Assessed Outcome:** Critical Thinking--The outcome being assessed is an individual/course level outcome which ties directly to the CLO's and PLO's associated with this training area.

#### **Write -up**

This assessment builds upon the collection and interpretation of data from the Winter 2016 semester. That data demonstrated a need for additional instructional resources in order for the students to attempt/complete the assessment as written.

An instructional resource was created and provided to students during the traditional classroom/laboratory exercises covering the necessary learning objectives. When the official assessment was given, students were allowed to use all available resources. Scoring data was collected on the shop floor by instructor observations, and official inspection data was collected using standard metrology equipment to inspect the assessment to print specifications. Final pass/fail determinations were made using a custom rubric.

Results from the Winter 2017 semester application of the assessment revealed that 80.77% of the students could successfully complete all objectives on their first attempt with an average score of 92.94%. The remaining 19.23% of the students could complete all objectives within the three-hour time limit with an average score of 85.40%. In conclusion, 100% of the students completed the assessment with an all-around average score of 89.17%

Obviously, these findings were better than expected and demonstrate the value of technical/instructional resources provided by the professor; however, these results must be tempered with the concept of not taking the responsibility of "note taking" from the students. As it is widely known, many learning objectives in industry and higher education will not come with Standard Operating Procedures (SOP's) and students/employees will be expected to create their own learning resources.

**Plastics Assessment of Student Learning 2016/2017**

**ILO Critical Thinking**

Project Title: Students will demonstrate the running of an Injection Molding Machine in the MN-220 lab. Based on changes to the lab directions and lecture notes, we will see how the changes we made will impact student learning. The lecture changes incorporated a website that has more visualization for the student. We have implemented changes from last year and now we will see how the changes impact student learning this year.

Purpose: To expose students to the process of Injection Molding.

Description (Outcome): Students will be given Instructions on how to start up and run the machine. Students will be in groups of 2-3. Once the machine is running the students will produce a part with a short shot, flash and then a good part. There is no time limit on the group but the students must be able to produce the above mentioned by use of the lab packet, Professor assistance, notes from lecture and teamwork.

Timeline: This assessment will be done during the fall and winter semesters 2016/2017.

As you read items 1-4 below this was my observation from my 2015/2016 Assessment of Student Learning. As I did this project this year I made some changes to the lab for this Assessment Project and some lecture changes were also incorporated. My reflection component really has not changed any but what I have learned did change and I will discuss that a little later on.

1) As I reflect on this assessment I am learning that all students learn at different rates. We have the student that will just jump right in and give it a try by following the written instructions. We have the group that just follows and try to jump in at the very end. We have a group that is afraid to try anything for fear of wrecking something and then the scary group with little knowledge with no fear. This is the group I need to watch closely, not because they will harm people but because they can damage the equipment.

2) The groups that had prior industry molding experience had no issues with the lab.

3) There were several groups with industry experience in non-related plastic fields. These groups figured it out with some assistance. Once they figured out which buttons to push they were off and running.

4) The no experience groups had the most problems. I had to show them several times on how to run the machine, which wasn't a problem at all but once you run a part they stand there and look at each other wondering what was next and then the machine would alarm out because of the time factor of sitting idle. This is a machine safety feature that needs to be there. I left them alone and actually wanted the machine to shut down so they could see the effects of an idle machine.

What I have learned: What I did differently this year was to work with the students that have never seen a molding machine on a one on one setting and explain to them the machine controls and what can happen if the machine sits idle too long. The nice thing is even if the machine sits idle and shuts

## Welding ASSESSMENT OF STUDENT LEARNING

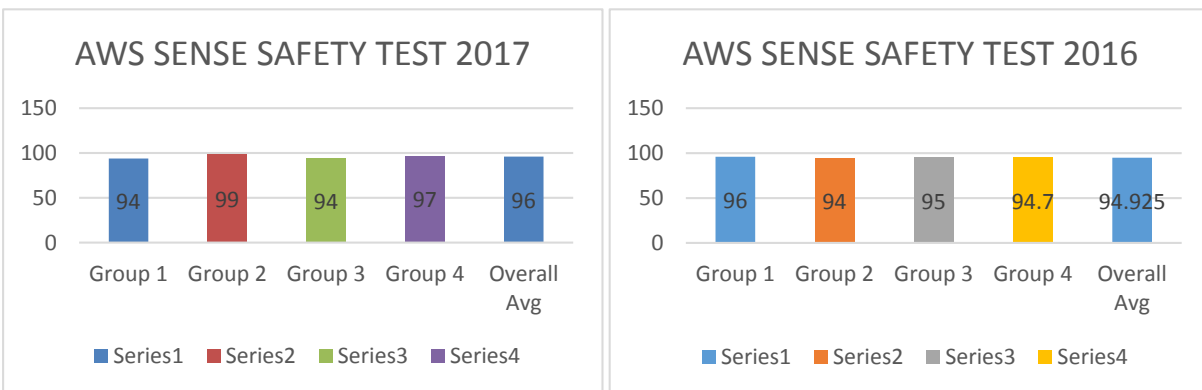
### ILO: Personal Responsibility

#### Submitted Plan:

This is a continuation of a project the Welding Faculty worked on last year.

This test allows the student to take the initial safety test three times to pass it. Our initial data only accounted for the first try on taking the test. This school year we will hand out a shop safety guide along with covering the topics in the lectures.

This test is given in all our welding courses and students can enter the program by taking one of four classes, MN134, MN136, MN202, and MN203. Our program does not have a linear track as students do not come here full time but take classes that fit their schedule. These four classes are prerequisites to take the advanced courses. The AWS SENSE program is flexible so we integrate it as modules into specific course work for each class. Once a student completes the nine modules, they are considered a completion for the AWS SENSE Level 1 certificate.



#### Reflection:

This year our overall average came up on the initial exam attempts. I believe this rise is due to the focus we have had on teaching the material, integrating the content into all of our course work, and student's desire to start earning the credential for AWS SENSE Level 1. The previous average at the first attempt on this test was 94.925. This year we saw the first test attempt jump to 96 percent. We had a total of 16 students who took the test a second or third time in two groups and passed the test within the limit of three attempts. This data is useful as it tells us we are on track and teaching the proper information. Some students are apprenticeship students in these classes, some are personal interest and not interested in the AWS SENSE Level 1 credential. Not everyone is actually obtaining the credential and therefore will not try the test more than one time.

**Quality Science ASSESSMENT OF STUDENT LEARN**

**ILO: Critical Thinking**

An important CLO for MN249 is that students should be able to calculate basic statistical measures (mean, median, mode, and standard deviation). Students must be able to calculate control limits and know basic quality theory to support quality improvement. This year's assessment showed that students are still struggling with the manual calculation of control limits, with only 50% of participants being able to complete the process with 100% accuracy. Most of the students in this population year made one simple mistake, which resulted in their calculation error. The data does show an improvement in charting assessment with three out of the four categories receiving 100% completion. Great!. The theory section of the assessment showed that students got 100% on questions #1, #3, and #4., and 96% on question #6. This is a great improvement from previous years, with the only disappointment in this section being that most students did not remember "The inventor of control charts". I think this is a minor problem in the big picture of things, because of the fact that students did know the importance of variation reduction and continuous quality improvement, which is a more important fact.



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## Part II: Plan for Upcoming Year

Part II is intended to provide a guide for your department's plans for the upcoming year with regards to the following: Operational Goals and/or Plans, Curriculum Goals and/or Plans, Learning Outcomes Assessment Plans, and Advising Plans. When answering the questions or completing the sections below, please consider the main points/highlights of each category.

### *A. Operational Goals and/or Plans*

What are your departmental goals and plans for 2017-18?

The Manufacturing Department has needs:

1. Full time faculty to teach welding
2. Faculty to support middle college expansion
3. If AMP continues there will be a need for Faculty/Adjuncts to support
4. Expanded support for Apprenticeships, The Apprenticeship Grant and four departments that utilize one person.



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What new information from external sources has influenced your planning for next year?

The main source of planning information comes from the programs with scheduling and demand for classes. Other sources are advisory boards, pressure from outside companies for AMP programs and two middle college programs that are utilizing many Manufacturing Department classes.

Are your goals targeting any Perkins or Key Performance indicators? If yes, please explain.

The AMP and Middle College programs are focused on 2P1-Concentrators who received an industry-recognized credential, a certificate or a degree during the reporting year.

What resources do you need to accomplish your departmental goals for the upcoming year?

1. Full time faculty to teach welding
  - a. Human resources will need to continue to post and look for avenues to recruit.
  - b. Welding faculty will need to travel to FSU to speak to them on ways they recruited and to try and tap into their network to locate a welding instructor.
2. Faculty to support middle college expansion
  - a. The department will need more faculty that are available during the daytime
3. If AMP continues there will be a need for Faculty/Adjuncts to support
  - a. The daytime courses that run along with middle college are straining the available hours of current fulltime faculty.
4. Expanded support for Apprenticeships, The Apprenticeship Grant and four departments that utilize one person.
  - a. Current responsibilities are split between two people doing apprenticeships and one person also works for four other departments. The current setup is not efficient. Would recommend that one person handle apprenticeships and add a support person to handle academic departments.

Do you need support from other departments to accomplish these goals? If yes, please explain.

The department will need to work closely with counseling to understand how the pathway model will work with academic program codes. The correct course sequence will be very important with people who start in a pathway then proceed to a specific code in our areas.



Do you need professional development in order to accomplish these goals? If yes, please explain.

N/A

For each of your departmental goals/plans/projects, please list the name of the lead faculty member(s) involved.

1. Full time faculty to teach welding—John Doneth
2. Faculty to support middle college expansion—Manufacturing Department Head
3. If AMP continues there will be a need for Faculty/Adjuncts to support—  
Manufacturing Department Head
4. Expanded support for Apprenticeships, The Apprenticeship Grant and four departments that utilize one person.—John Doneth

For each of your departmental goals/plans/projects, please provide a brief timeline for completion.

1. Full time faculty to teach welding
  - a. Fall 2017-Spring 2018
2. Faculty to support middle college expansion
  - a. 2017-2018 School year
3. If AMP continues there will be a need for Faculty/Adjuncts to support
  - a. 2017-2018 School year
4. Expanded support for Apprenticeships, The Apprenticeship Grant and four departments that utilize one person.
  - a. The is dependent on the school and what it would find is the best/correct solution.

***B. Curriculum Goals and/or Plans***

What are your departmental curriculum development goals and plans for 2017-18?

During the next academic year, the following curriculum development goals are planned:

1. Tooling and Manufacturing are going through Academic Program Review
2. Plastics is going through Academic Program Review
3. Welding will be starting Academic Program Review
4. Quality Science will be starting Academic Program Review
5. Tooling and Manufacturing is looking at lower credit hour certificates
6. Welding is looking at the changes to the AWS Sense process and review internal processes
7. Plastics is looking at the Ferris State University transfer programs and determining if they are worth the hassle of having a specific code. Also determining if FSU will keep these going as well. FSU has not been onboard with specific transfer path codes.

Review of Department's Curriculum Transferability

*Please note: this section should be completed by all SAS Departments, Business, and CIS.*

Using transferability data provided by Instructional Support, please summarize your perceptions of how courses in your department transfer to our four-year university partners and how this understanding will impact your curriculum goals for the upcoming year.

N/A



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What new information from external sources has influenced your curriculum development planning for next year?

1. Data provided to the programs for Academic Program Review
2. Advisory boards
3. Industry partners inside and outside of AMP
4. Industry requests driven through the apprenticeship office
5. Local high school articulation programs

Are your curriculum development goals targeting any Perkins or Key Performance Indicators? If yes, please explain.

Programs are focused on 2P1-Concentrators who received an industry-recognized credential, a certificate or a degree during the reporting year.



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What resources do you need to accomplish these curriculum development goals?

Continued support from the Instruction Support Staff, Institutional research.

Do you need support from other departments to accomplish these curriculum development goals? If yes, please explain.

N/A

For each of your departmental curriculum development goals/plans/projects, please list the name of the lead faculty member(s) involved.

During the next academic year, the following curriculum development goals are planned:

1. Tooling and Manufacturing are going through Academic Program Review—Nathan Spahn, Jeff Tyler
2. Plastics is going through Academic Program Review—Scott Lampe, Troy Wallwood
3. Welding will be starting Academic Program Review—John Doneth Nick Pinckney
4. Quality Science will be starting Academic Program Review—Jon Greer
5. Tooling and Manufacturing is looking at lower credit hour certificates--Nathan Spahn, Jeff Tyler
6. Welding is looking at the changes to the AWS Sense process and review internal processes—John Doneth, Nick Pinckeny
7. Plastics is looking at the Ferris State University transfer programs and determining if they are worth the hassle of having a specific code. Also determining if FSU will keep these going as well. FSU has not been onboard with specific transfer path codes. –Scott

For each of your departmental curriculum development goals/plans/projects, please provide a brief timeline for completion.

During the next academic year, the following curriculum development goals are planned:

1. Tooling and Manufacturing are going through Academic Program Review
  - a. 2017-2018
2. Plastics is going through Academic Program Review
  - a. 2017-2018
3. Welding will be starting Academic Program Review
  - a. 2018-2019
4. Quality Science will be starting Academic Program Review
  - a. 2018-2019
5. Tooling and Manufacturing is looking at lower credit hour certificates
  - a. 2017-2018
6. Welding is looking at the changes to the AWS Sense process and review internal processes
  - a. 2017-2018
7. Plastics is looking at the Ferris State University transfer programs and determining if they are worth the hassle of having a specific code. Also determining if FSU will keep these going as well. FSU has not been onboard with specific transfer path codes.
  - a. 2017-2018





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### ***C. Learning Outcomes Assessment Plan for 2017-18***

In this section, please outline your department's plan for learning outcomes assessment work for the upcoming academic year, outlining the Program Learning Outcomes (PLOs) or Institutional Learning Outcomes (ILOs) that will be assessed as well as the assessment instruments/measure that will be used. Please limit your response to the space provided in the text boxes below.

With two programs going through academic program review this is yet to be determined. The welding program completed their assessment and will look at what will be done for next year. Four programs will be in academic program review at some point next year.



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***D. Departmental Advising Plan for 2017-18***

In this section, please outline your department's advising plan for the upcoming academic year. Please limit your response to the space provided in the text box below.

Student advising is a continuous process by department faculty. The technology area faculty are the best advisors to our students since they know what will be required of the students in industry. Faculty advise students during their office hours as well as during class periods, where appropriate. The department advising plan is on the webpage at [grcc.edu/manufacturing](http://grcc.edu/manufacturing). The department has planned advising periods one week each semester. The goal is to make sure students are on track, have classes figured out, and they have a plan for getting a certificate, degree, and or transfer. Outside of this the department always encourages students to talk to us, make sure they have a plan and do an excellent job of advising students.

**Part III: 2016-17 Faculty & Staff Accomplishments/Awards**

Part III is intended to provide a space to share the accomplishments, awards, and/or accolades achieved by faculty and staff in your department during the course of this past year.

All faculty have had their FPE's approved by the Associate Dean. There was a lot of work completed this year by many faculty. Scott Lampe again worked on the GRCC to FSU transfer agreements. Scott also helped to introduce the welding faculty to the Coopersville Schools. Most likely an articulation agreement will be signed with welding to cover MN116. Margaret Sesselmann continues to help with a test which apprenticeship companies are using to test their employees. Troy Walwood has helped with new equipment in the Holland Labs. Nathan Spahn and Jeff Tyler continue to support the department with attending outside activities and managing the labs. Nick Pinckney, John Doneth have worked with Nathan Haney to clean out some storage areas and work on new



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**spreaksheets for ordering bulk supplies. Jon Greer continues to help with company contacts and advising QS students.**



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*Thank you for completing this report. Please submit to your Dean via email.*