



2014-2015 Assessment Cycle

Key Findings

Finding per Measure

Computer Integrated Machining Technology AOS Program Outcome Set

1. Develop technical skills and knowledge needed to transform ideas and drawings into precision machined parts

Interpret blueprints and specifications to manufacture and inspect products

▼ **Measure:** Blueprint Reading 2 [NCIM-102]: Final Exam
Course level; Direct - Exam

Details/Description:

Acceptable Benchmark: 80% of students will score 75% or better on final exam.

Implementation Plan (timeline): Annually at end of Spring semester beginning 2013/2014.

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for Blueprint Reading 2 [NCIM-102]: Final Exam

Summary of Findings: Based on the final grade averages of (n=12) students completing this course, 100% of the class earned a C or better final grade.

Results: Acceptable Benchmark Achievement: Met

Recommendations : No further actions are needed at this time

Reflections/Notes :

Apply mathematical concepts & engineering graphics skills to solve machining problems

▼ **Measure:** Trig for Coordinate Analysis [NMTH-206]: Final Exam
Course level; Direct - Exam

Details/Description:

Acceptable Benchmark: 80% of students will score 75% or better on final exam.

Implementation Plan (timeline): Annually at end of Spring semester beginning 2013/2014

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for Trig for Coordinate Analysis [NMTH-206]: Final Exam

Summary of Findings: Based on final grade averages, 100% of students completing this course earned a C or better grade.

Results: Acceptable Benchmark Achievement: Exceeded

Recommendations : No further actions are needed at this time

Reflections/Notes :

Use Computer Assisted Programming, Computer Assisted Machining (CAD/CAM) software

▼ **Measure:** CNC 2 [NCIM-252]: Final Project Evaluation
Course level; Direct - Student Artifact

Details/Description: Final Project Evaluation based on scoring guide

Acceptable Benchmark: 80% of students will score 75% or better on scoring guide

Implementation Plan (timeline): Annually at end of Spring semester beginning 2013/2014

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for CNC 2 [NCIM-252]: Final Project Evaluation

Summary of Findings: All students (100%) completing this course achieved an overall score of 77% or better, which exceed our established benchmark

Results: Acceptable Benchmark Achievement: Exceeded

Recommendations : no further action needed at this time

Reflections/Notes :

2. Develop skills and knowledge to safely operate conventional and (CNC) machines, tools and other automatic equipment

Set up and operate conventional lathes, mills, grinders and polishers

▼ **Measure:** CIMT 4 [NCIM-234], and Precision Optics Manufacturing 1 [NCIM-241]:
Competency-based Project Score
Course level; Direct - Student Artifact

Details/Description: CIMT 4 [NCIM-234], and [NCIM-241] Precision Optics Manufacturing 1: competency-based project score.

Acceptable Benchmark: 80% of students will score 75% or better on competency based project

Implementation Plan (timeline): Annually at end of Spring semester beginning 2013/2014

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for CIMT 4 [NCIM-234], and Precision Optics Manufacturing 1 [NCIM-241]: Competency-based Project Score

Summary of Findings: All machining related courses within the program have implemented skill testing as part of the student final grade. Based solely on the stated benchmark, an average of 38% of the students who completed CIMT 4 and Precision Optics Manufacturing passed the competency test with a score of 75% or better.

Results: Acceptable Benchmark Achievement: Not Met

Recommendations : The program faculty will monitor these course and look for areas of improvement .In addition, The benchmark and measures used in this category will be revised to better reflect students OVERALL skills and not one that's based on a single test.

Reflections/Notes : It is important to note that even though the benchmark was not achieved, 100% of the students passed both courses with a C or better grade.

Create, edit, and verify toolpaths; copy and paste parameters, toolpaths and tool associative geometry for CNC programs

▼ **Measure:** CNC 1 and CNC 2: Competency-based Project.
Course level; Direct - Student Artifact

Details/Description:

Acceptable Benchmark: 80% of students will score 75% or better on project scoring rubric

Implementation Plan (timeline): Annually at end of Spring semester beginning AY 2013/2014

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for CNC 1 and CNC 2: Competency-based Project.

Summary of Findings: Student outcomes are measured over an entire semester and include a series of lab assignments that are primarily completed on a computer. These assignments are used to calculate the final grades. Based on this measure, 88% of students achieved an overall score of 75% or better.

Results: Acceptable Benchmark Achievement: Exceeded

Recommendations : No further action needed at this time.

Reflections/Notes :

Observe and practice industry safety rules and regulations

▼ **Measure:** Faculty Observations and Safety Quiz
Course level; Direct - Exam

Details/Description:

Acceptable Benchmark: 100% of students will score 90% or better on a shop safety quiz

Implementation Plan (timeline): Annually at end of Spring semester beginning AY 2013/2014

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for Faculty Observations and Safety Quiz

Summary of Findings: All students are expected to pass a safety quiz in the first machining course with a score of 100% in order to gain access to and operate lab equipment. Safety is reinforced in every course and students who do not adhere to established rules are reminded of any violations and in some cases are asked to leave the class.

100% of students follow safety protocol at all times while using program machines.

Results: Acceptable Benchmark Achievement: Met

Recommendations : No further actions needed

Reflections/Notes :

3. Develop metrology skills needed to validate the quality of all machined parts and process documents

Use precision measuring instruments and computers to control and verify quality

▼ **Measure:** Precision Measurements [NCIM-121]: Final grade average
Course level; Direct - Other

Details/Description:

Acceptable Benchmark: 80% of students will score 75% or better on final grade

Implementation Plan (timeline): Annually at end of Spring semester beginning AY 2013/2014

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for Precision Measurements [NCIM-121]: Final grade average

Summary of Findings: 93% of students completing this course earned a final grade average of 75% or better.

Results: Acceptable Benchmark Achievement: Exceeded

Recommendations : No further action is needed at this time

Reflections/Notes :

Write complete inspection reports

▼ **Measure:** CIMT 4 [NCIM-234] and Precision Optics Manufacturing 1: Inspection Report for All Machined Parts
Course level; Direct - Student Artifact

Details/Description:

Acceptable Benchmark: 80% of students will accurately & completely fill out an inspection report for all machined parts.

Implementation Plan (timeline): Annually at end of Spring semester beginning AY 2013/2014

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for CIMT 4 [NCIM-234] and Precision Optics Manufacturing 1: Inspection Report for All Machined Parts

Summary of Findings: The process of writing inspection reports begins with the first CIMT machining course during the freshman year and this skill is reinforced in all subsequent CIMT courses. By the time students have completed CIMT 4 and Precision Optics Manufacturing, they are fully knowledgeable on the required components and completion of inspection reports.

Results: Acceptable Benchmark Achievement: Exceeded

Recommendations : No further action needed at this time.

Reflections/Notes :

4. Develop basic understanding of materials used in manufacturing including ferrous and non-ferrous metals, glass and polymers

Identify characteristics of various industrial materials

▼ **Measure:** Precision Optics Manufacturing 1 [NCIM-241] and CIMT 4 [NCIM-234] - Final Exam
Course level; Direct - Exam

Details/Description:

Acceptable Benchmark: 80% of students will score 75% or better on the final exam.

Implementation Plan (timeline): Annually at end of Spring semester beginning AY 2013/2014

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for Precision Optics Manufacturing 1 [NCIM-241] and CIMT 4 [NCIM-234] - Final Exam

Summary of Findings: All machining related courses within the program have implemented skill testing as part of the student final grade. Based solely on the stated benchmark, an average of 38% of the students who completed CIMT 4 and Precision Optics Manufacturing passed the competency test with a score of 75% or better.

Results: Acceptable Benchmark Achievement: Not Met

Recommendations : The program faculty will monitor these course and look for areas of improvement .In addition, The benchmark and measures used in this category will be revised to better reflect students OVERALL skills and not one that's based on a

single test.

Reflections/Notes : It is important to note that even though the benchmark was not achieved, 100% of the students passed both courses with a C or better grade.

5. Students will develop practical job related and employment seeking skills for careers in manufacturing, metalworking or precision optics

...and express satisfaction with their program of learning.

Produce machined parts and optical elements to exact specifications

▼ **Measure:** Precision Optics Manufacturing 1 [NCIM-241] and CIMT 4 [NCIM-234]: Competency-based Final Exam
Course level; Direct - Exam

Details/Description: Students complete a competency based final exam in CIMT 4 and Precision Optics Manufacturing I.

Acceptable Benchmark: 85% of the students will produce 80% of specified features within tolerance.

Implementation Plan (timeline): Annually at end of Spring semester beginning AY 2014/2015

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for Precision Optics Manufacturing 1 [NCIM-241] and CIMT 4 [NCIM-234]: Competency-based Final Exam

Summary of Findings: All machining related courses within the program have implemented skill testing as part of the student final grade. Based solely on the stated benchmark, an average of 38% of the students who completed CIMT 4 and Precision Optics Manufacturing passed the competency test with a score of 75% or better.

Results: Acceptable Benchmark Achievement: Not Met

Recommendations : The program faculty will monitor these courses and look for areas of improvement .In addition, the benchmark and measures used in this category will be revised to better reflect students OVERALL skills and not one that's based on a single test.

Reflections/Notes : It is important to note that even though the benchmark was not achieved, 100% of the students passed both courses with a C or better grade.

Observe and practice industry safety rules and regulations

▼ **Measure:** Faculty Observation Checklist - Co-op Supervisor Evaluation Form
Course level; Direct - Other

Details/Description: Faculty observation checklist
Co-op Supervisor Evaluation Form

Acceptable Benchmark: 100% of the students will follow safety standards

Implementation Plan (timeline): Annually at end of Spring semester beginning AY 2014/2015

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for Faculty Observation Checklist - Co-op Supervisor Evaluation Form

Summary of Findings: The outcome was not assessed during the 2014-2015 assessment cycle

Recommendations :

Reflections/Notes :

Demonstrate problem-solving, decision-making, responsibility, pride in self and work performance, and other learned behaviors and attitudes

...necessary for entering the work force.

Measure: NCE Alumni Data: Co-op Self Assessment Evaluation Form

Details/Description: NCE Alumni data
Co-op Self Assessment Evaluation Form

Acceptable Benchmark: 80% of students will score 3 or more on a 1-5 evaluation scale

Implementation Plan (timeline): Data collected every third year.

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for NCE Alumni Data: Co-op Self Assessment Evaluation Form

No Findings Added

Demonstrate technical competency on the job for an approved co-op employer, which provides access to participation within our global society

Demonstrate technical competency on the job for an approved co-op employer, which will allow them access to participation within our global society.

Measure: Co-op Supervisor

Details/Description:

Acceptable Benchmark: 90% of graduates will be employed in the field of precision manufacturing and/or precision optics.

Implementation Plan (timeline): Annually at the beginning of Fall semester AY 2015/2016

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for Co-op Supervisor

Summary of Findings: Nine students qualified for coop placement during this assessment cycle. One student chose to postpone his co-op until 2015/2016, which left eight students seeking coop placements.

results: seven students were successfully placed in coop positions.
One student was unsuccessful

87% of students seeking co-op were successfully placed.

Results: Acceptable Benchmark Achievement: Not Met

Recommendations : Program faculty will increase networking efforts with local and national manufacturing companies in order to increase future co-op placements.

Reflections/Notes :

Affirm satisfaction in their career/academic preparation

Measure: Student Satisfaction Survey Program level; Indirect - Survey

Details/Description:

Acceptable Benchmark: 80% of students will respond they are "very satisfied" or "satisfied" with overall program and courses satisfaction.

Implementation Plan (timeline): Annually at the beginning of Fall semester AY 2015/2016

Key/Responsible Personnel: Data collected by Assessment Coordinator

Findings for Student Satisfaction Survey

Summary of Findings: Responses to a student satisfaction survey indicated that 92% of students either agreed or strongly agreed that they were satisfied with program courses.

Results: Acceptable Benchmark Achievement: Exceeded

Recommendations : no further action needed at this time

Reflections/Notes :

Overall Recommendations

No text specified

Overall Reflection

No text specified

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