

2018-2019 Assessment Cycle

## **Assessment Plan**

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### **Mission Statement**

#### **Mission Statement - Engineering Studies**

##### **Primary Vision**

The Department of Engineering Studies will be a leader in providing technical education, academic support, and encouragement to prepare deaf and hard-of-hearing students for careers in engineering, engineering technology and engineering-related fields.

##### **Mission Statement**

The Department of Engineering Studies' mission is to provide the best academic experience for our students' growth and achievement during their learning experiences at RIT/NTID in preparation for a successful career.

The Department of Engineering Studies will offer intensive real-world practices in technical classes taught by experienced faculty who communicate well with deaf and hard-of-hearing students. They provide opportunities for students to develop skill sets that are in demand by industry. Students gain fundamental skills for entry-level positions within engineering and engineering technology fields as well as advanced learning opportunities offered through the other colleges of RIT.

### **Measures**

#### **Precision Manufacturing Technology AOS Program Outcome Set**

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

**Outcome: 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

**Outcome: 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

**Outcome: 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

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

**Outcome: 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

**Outcome: 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

**Outcome: 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

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

#### Outcome: 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

#### Outcome: 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

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

**Outcome: 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

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.*

**Outcome: 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

### Outcome: 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

### Outcome: 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

**Outcome: 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

**Outcome: 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

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