



2015-2016 Assessment Cycle  
**Assessment Plan**

**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.

**Outcomes and Measures**

**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

**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

**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

**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

**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

**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

**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

**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

##### 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.*

##### 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

##### 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

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

▼ **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

*...necessary for entering the work force.*

##### Demonstrate technical competency on the job for an approved co-op employer, which

▼ **Measure:** Co-op Supervisor

**Details/Description:**

**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.

**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

**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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