

## 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

### ▼ Computer Integrated Machining Technology AOS Program Outcome Set

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

### Student Learning 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

**Student Learning 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

**Student Learning 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

**Student Learning 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

**Student Learning 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

**Student Learning 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

**Student Learning 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

### Student Learning 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

### Student Learning 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.

**Student 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

**Student Learning 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

**Student Learning 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
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

**Student Learning 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

**Student Learning 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