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 |
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<td>Details/Description:</td>
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| 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 |
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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:**
<table>
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<tr>
<th><strong>Acceptable Benchmark:</strong> 80% of students will accurately &amp; completely fill out an inspection report for all machined parts.</th>
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<td><strong>Implementation Plan (timeline):</strong> Annually at end of Spring semester beginning AY 2013/2014</td>
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### 4. Develop basic understanding of materials used in manufacturing including ferrous and non-ferrous metals, glass and polymers

**Identify characteristics of various industrial materials**

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<th><strong>Measure:</strong> Precision Optics Manufacturing 1 [NCIM-241] and CIMT 4 [NCIM-234] - Final Exam</th>
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**Details/Description:** Students complete a competency based final exam in CIMT 4 and Precision Optics Manufacturing 1.

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<td><strong>Implementation Plan (timeline):</strong> Annually at end of Spring semester beginning AY 2013/2014</td>
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### 5. Students will develop practical job related and employment seeking skills for careers in manufacturing, metalworking or precision optics

**Produce machined parts and optical elements to exact specifications**

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**Details/Description:** Students complete a competency based final exam in CIMT 4 and Precision Optics Manufacturing 1.

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<th><strong>Acceptable Benchmark:</strong> 85% of the students will produce 80% of specified features within tolerance.</th>
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**Observe and practice industry safety rules and regulations**

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<tr>
<th><strong>Measure:</strong> Faculty Observation Checklist - Co-op Supervisor Evaluation Form</th>
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**Details/Description:** Faculty observation checklist Co-op Supervisor Evaluation Form

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<th><strong>Acceptable Benchmark:</strong> 100% of the students will follow safety standards</th>
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<td><strong>Implementation Plan (timeline):</strong> Annually at end of Spring semester beginning AY 2014/2015</td>
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**Demonstrate problem-solving, decision-making, responsibility, pride in self and work performance, and other learned behaviors and attitudes**

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

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<th><strong>Acceptable Benchmark:</strong> 80% of students will score 3 or more on a 1-5 evaluation scale</th>
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<td><strong>Implementation Plan (timeline):</strong> Data collected every third year.</td>
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**Demonstrate technical competency on the job for an approved co-op employer, which**

<table>
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<th><strong>Measure:</strong> Co-op Supervisor</th>
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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

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**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