## Request to Change or Adapt a Registered Program

| Item | Response *(type in the requested information)* |
|---|---|
| **Institution name and address** | **ROCHESTER INSTITUTE OF TECHNOLOGY**<br><br>**1 Lomb Memorial Drive**<br><br>**Rochester, New York 14623**<br><br>*Additional information*:<br><br>▪ Specify campus where program is offered, if other than the main campus: |
| **Identify the program you wish to change** | Program title: **Computer Aided Drafting Technology**<br><br>Award (e.g., B.A., M.S.): **A.A.S.**<br><br>Credits: Convert **105** quarter hours to **75** semester hours<br><br>HEGIS code: **5303**<br><br>Program code: **22975** |
| **Contact person for this proposal** | Name and title: **Christine M. Licata, Senior Associate Provost**<br><br>Telephone:585-475-2953     Fax:585-475-4460<br><br>E-mail: cmlnbt@rit.edu |

| CEO (or designee) **approval** | Name and title:  **Jeremy Haefner, Provost and Sr. Vice President for Academic Affairs** |
| --- | --- |
| | Signature and date: |
| *Signature affirms the institution's commitment to support the program as revised.* | If the program will be registered jointly[1] with another institution, provide the following information: |
| | Partner institution's name: |
| | Name and title of partner institution's CEO: |
| | Signature of partner institution's CEO: |

# Program Conversion Documentation

**This form and accompanying tables should be used for conversion of all RIT programs: Associate, Baccalaureate, Masters, Ph.D., Dual Degree, Certificates and Advanced Certificates. This documentation will be used by the RIT curriculum review bodies and NYSED.**

**This form should also be used for program discontinuance. In the case of discontinuance, complete Section 1(H) <u>ONLY</u> and follow RIT Policy on Discontinuance (E 20) as appropriate.**

**Directions:** Using the spaces and tables provided in this form, please respond to Section 1 (A-H) <u>and </u>Sections 2-5.

Note: In addition to responding to Section **1 (A-H) through Section 5:**
- If you are proposing to change the title of your program please list the old and new program titles on the first page of this document and fill in section **1 (C** ) with the old and new program titles.
- If your program conversion involves converting a current dual degree program to the semester calendar, please also provide information requested in **Section 1(I).**
- If your program conversion involves merging or consolidating one of more existing programs into a new program, please provide information requested in **Section 1(J).**
- Use the program as currently registered with NYSED as the basis from which you describe changes. The last registered version of any program is available from Christine Licata, Sr. Associate Provost.
- Text boxes on this form and on Tables 1, 2 and 3 will expand as you type in them.

**Documentation submission:**

1. Submit required documentation as a total package to RIT curriculum review bodies.
2. Attach Table 1, Table 3 and Program Level Outcomes Assessment Plan as part of this package. (Directions for completion follow within this document.) There are links in this document to these required tables.
3. Table 2 is imbedded within this form and does not require a separate attachment.
4. Complete the document log on the last page of each "deliverable" before submitting the packet to the appropriate curriculum review body.

If you have questions or need assistance, please contact either your Associate Dean or:

- Charles Border, Chair, ICC
  - 475-7946, cbbics@rit.edu
- Ag Crassidis, Chair, Grad Council
  - 475-4730, alceme@rit.edu
- Christine Licata, Sr. Associate Provost
  - 475-2953, cmlnbt@rit.edu

# 1. RIT Program Conversion:  Overview of Proposed Changes

Describe how program faculty used the calendar conversion process as an opportunity to revise and improve the program.

**Program Improvements**

The NTID Department of Engineering Studies' (DES) supports the efforts for "quarter to semester" conversion which leads to sufficient program improvement for the best interests of students, faculty, and the workforce.  The benefits for the curriculum conversion are additional instructional time to expand the curriculum into areas such as sustainability.  Expanding the curriculum allows skills to be strengthened, which increases chances for employment, and extends time for learning opportunities such as student innovation projects.

These benefits will potentially increase and facilitate opportunities for collaborative academic programs, transferability, articulation agreements between the NTID Department of Engineering Studies and other programs, departments, or colleges throughout Rochester Institute of Technology or other Universities. Once the opportunities are taken advantage of, this could potentially increase scholarship work and engage faculty/student innovation projects throughout DES.

By revising the existing curriculum and converting to a semester curriculum format, the DES seeks to take advantage of the opportunity to develop innovative new programs, improve overall academic efficiencies, solidify our technical and career education contents, and prepare our students to become more competitive in the workforce.

Describe how your converted program responds to the RIT Academic Program Profile (see RIT Academic Program Profile: (http://www.rit.edu/conversion/media/documents/secure/ProgramProfile.pdf ).  How have you integrated the appropriate Essential Program Learning Outcomes from this profile into your program?  Please also include these outcomes in your Program Level Assessment Plan in Section 3 of this form.

**Academic Program Profile**

The essential goal of the Computer Aided Drafting Technology program is to prepare students for a lifetime of learning as a technician in the Architecture, Engineering and Construction industry.  Students will gain a wide range of skills and knowledge related to AEC, and will be prepared to gain entry-level employment within the AEC industry.  The curriculum is designed to foster the development of both hard and soft skills that students will need to begin a successful career.  These goals of the CADT program will not only continue, but will be expanded with the semester conversion.

The changes to the curriculum along with the development of the Program Level Outcomes Assessment Plan were designed to incorporate a broader view of the CAD profession in the construction industry. Specifically, based on feedback from the CADT Industrial Advisory Group, the CADT program will integrate instruction in Building Information Modeling (BIM), which is a significant extension on basic CAD (i.e. drafting).  In other areas of technical education, expanded instruction in blueprint reading, researching technical information and sustainability will be included.  Finally, the curriculum is being revised to incorporate the five Essential Program Learning Outcomes from the RIT Academic Program Profile.

**Critical Thinking:**  Creating a Building Information Model (BIM) is much like constructing the actual building.  Students must use their knowledge and skills to select the appropriate components and construction materials.  Beyond developing the model, students will need to determine the best

strategy to generate construction documents including plans, elevations, sections and details. Students will also be given an opportunity to engage in some research to help them make decisions related to accessibility and safety when developing their project.

**Ethical Reasoning:** Students will learn the purpose of building codes and how the codes help to facilitate design decisions related to accessibility and safety. In particular, the deaf students will explore accessibility for the hearing impaired such as limiting visual barriers, window placement and various technological advances that could enhance accessibility. Students will learn the importance of sustainability in the construction industry and the ethical reasons for pursuing such goals. In addition to technical skills, students will develop soft-skills to facilitate on-the-job ethical behavior.

**Integrative Literacies:** Good, clear communication is a critical skill for the successful technician. Students will learn the proper use of technical vocabulary and how to communicate technical information through the printed or electronic document as wells as live presentations. Also, students will use their math skills frequently in this program to calculate various measurements, to determine locations, to interpret scales, and to generate reports.

**Global Interconnectedness:** The AEC industry has become increasingly devoted to issues related to sustainability, energy and conservation. The students in our program will learn about these issues and how they impact the design and construction of buildings. Also, students will learn about some of the different cultural designs as related to architecture and civil engineering.

**Creative/Innovative Thinking:** All students will engage in a final "capstone" design project during their final semester in the program. Students will be given some project guidelines and criteria, and they work together as a team to develop the project using their BIM skills. Furthermore, these students will produce presentation graphics in order to give a presentation of their project design to an audience of their peers. Also, throughout the program, students will develop, maintain and update their portfolio in both hard-copy and electronic (web-based) formats.

For a more complete course-level description of how the five Essential Program Learning Outcomes are being incorporated, see the attached **Program Level Outcomes Assessment Plan**.

**NYSED**
**Program Goals, Objectives, Focus and/or Design**
Have there been changes to the goals, objectives, focus and /or design of the program?

|   | |
|---|---|
|   | No changes |
| X | Slight-moderate changes |
|   | Substantive changes (e.g., substantial change in the focus and design of the program; change of 1/3 or more in program outcomes/objectives and accompanying content of the program). |

Explain any proposed changes, the rationale for these changes, the impact of changes on the capacity of current faculty to deliver the revised program, impact, if any, on current admissions standards and the expected impact on enrollment projections. Enrollment Projection changes should be provided by EMCS, as appropriate.

It is the sentiment of the Computer Aided Drafting Technology (CADT) faculty that the current program, while advertised as preparing students as support technicians for either the architectural, engineering or construction (A/E/C) professions was heavily biased towards architectural studies. By infusing more civil and construction related content into the curriculum we intend to give graduates a broader palette of

skills to market upon graduation.

CADT specific instruction will begin immediately in the first semester as opposed to the current mask where students take two quarters of common engineering courses prior to declaring their interest in a specific major. A review of the program masks shows an elimination of three of the four common courses within the first year of studies namely: "Engineering Fundamentals", "CAD Applications", and "Manufacturing Processes". Common courses were developed five years ago when the department consisted of three programs, Automation Technology, Computer Aided Drafting Technology, and Computer Integrated Machining Technology. Automations Technology has since been slated for discontinuance. The faculty within the Computer Aided Drafting Technology (CADT) and Computer Integrated Machining Technology (CIMT) programs have noted during departmental discussions the inefficiencies of offering common courses within career areas that require distinctly different skills.

Students will begin with traditional AutoCAD training. The course "Engineering Graphics" will focus on the use of CAD as a two-dimensional drafting tool used primarily to create construction documentation. Subsequent Construction CAD courses will make exclusive use of building information modeling (BIM) software. BIM represents a significant technological change in how a construction project is created in that documentation is derived from a single 3-D parametric model. The term parametric describes a process in which an element is modified and an adjacent element(s) is automatically modified to maintain a previously established relationship. For example, if a wall is moved, perpendicular walls would modify (grow or shrink in length) to remain attached to the related wall. Traditional drafting views (elevation, sections, etc.) are generated from the parametric model and any modification or deletion in one view is automatically reflected in all other views.

Also within the first year of studies, faculty propose expanding the content of the current "A/E/C Measurement Systems" course to include blueprint reading skills and rename the course, "Data Collection and Analysis". A new course called "Civil Technology Graphics" will be added in the second semester of the first year to add more balance to the curriculum as mentioned above.

Computing Tools for Engineering Technology will be retained as a foundation course for all programs within DES that choose to use it. This course will give students training in Microsoft Office software packages as well as exposure to Adobe Photoshop. Photoshop was cited recently by the CADT program's Curriculum Advisor Group as one of the top five software packages a student should know upon completion of the program. Similarly, on a recent co-op visit to the City of Los Angeles Department of Public Works, the architectural professional that provided mentoring to several of our students noted Photoshop skills as necessary for a competent CAD technician.

In addition, building code content as it pertains to the effective functioning of a CAD technician in a professional office will be incorporated into the Principles of Structural Systems course. CAD students should have a sense of how structural systems are selected for a given project. Part of the decision is based on fire protection requirements. Students should understand the meaning of various fire ratings and how to achieve these ratings through the selection of materials and development of details. CAD technicians are not expected to be code experts in a professional environment; therefore the stand alone Construction Regulations course will be eliminated.

The CADT program proposes consolidating the content from the NTID Interdisciplinary Studies course "Job Search Processes" with activities that occurred concurrently within the Construction CAD sequence. Skills such as resume and cover letter development, identifying and researching regional locations for employment, making initial contacts, interviewing skills, etc. will be expanded to include improving technical communication skills and developing both a hard portfolio and an online presence using portfolio templates. Instructional delivery for this course will be team taught by a staff representative from NTID Center on Employment (NCE) staff and technical faculty from the CADT program

Principles of Structural Systems will be expanded to allow more time for wood frame construction, to

introduce rudimentary statics topics and to expose students to the impact building codes have on structural system selection and fire protection.

Site Utilities, Mechanical and Electrical Systems for A/E/C will be renamed "MEP Systems". MEP is a widely accepted acronym that refers to the design and construction of the mechanical, electrical and plumbing systems that are incorporated into any construction project. The MEP systems course will be expanded to incorporate topics related to sustainability. Students should be aware of the US Green Building Council rating system, how construction projects can achieve LEED Certification and the positive impact green construction has on the environment.

The current faculty have strong backgrounds in architecture and urban studies. Mandated by New York State licensing requirements, professional architects are required to participate in professional development activities in order to renew their license on a three year basis. Health, safety and welfare studies and sustainability studies are an integral component of licensing renewal. In addition, the American Institute of Architects requires 18 learning units of professional development per year making their criteria for membership even more stringent than New York State. These mandated education programs at the national and state level along with continued self study will prepare the current faculty for the proposed curricular changes.

**B. Program Options or Concentrations (**i.e., a specific group of related courses that lead to greater understanding in a field or discipline).

| X | No changes to options or concentrations |
|---|---|
|   | Kept current option(s)/concentrations with some revisions |
|   | Added an option(s)/concentration(s) |
|   | Title of new option(s)/concentration(s) |
|   | Eliminated option(s)/concentration(s) |

Explain these proposed changes and the rationale for these changes:

|  |
|---|
|  |

**C. Program Title**

| X | No change in program title |
|---|---|
|   | New program title proposed<br>New program title:<br><br>Old program title: |
|   | Explain the rationale for any proposed change in program title: |

**D. Elimination of a requirement for completion** (e.g. requirements to be eliminated might include an internship, clinical, cooperative education or other work-based experience).

| X | No change in requirements |
|---|---|
|   | Change made to program completion requirements |

Describe any change proposed and the rationale for the change:

|  |
|---|
|  |

|  |  |
|---|---|
|  |  |

**E. Change in program award** (e.g. BFA to BS, MBA to MS, etc).

| X | No change in program award |
|---|---|
|  | Change in program award |

Describe any proposed change and the rationale for the change:

|  |
|---|
|  |

**F**. **Mode of delivery** (e.g. adding distance education format).

| X | No change in mode of delivery |
|---|---|
|  | Change in mode of delivery |

Describe the change proposed and the rationale for the change:

|  |
|---|
|  |

**G. Format Change** (a change that alters the program's financial aid eligibility;e.g. from full-time to part-time, or to an abbreviated or accelerated semester format).

| X | No change in format |
|---|---|
|  | Proposed change in format |

Describe the proposed change in format and any change in availability of courses, faculty, resources or support services that this proposed format change requires:

|  |
|---|
|  |

**H. Discontinuing a Program**

| X | No discontinuance |
|---|---|
|  | Proposed discontinuance |

Indicate the date by which the program will be discontinued and reason for discontinuance action:

|  |
|---|
|  |

**I. Dual-Degree Program**
   a) Complete the following table to identify the existing programs:

|  | Program Title | Degree Award | Program Code |
|---|---|---|---|
| Program 1 |  |  |  |
| Program 2 |  |  |  |

   b) Proposed dual-degree program (title and award):

|  |
|---|
|  |

   c) Courses that will be counted toward both awards:

|  |
|---|
|  |

   d) Length of time for candidates to complete the proposed program:

e)  Use the Sample Program Schedule in   Table 1   to show the sequencing and scheduling of courses in the dual-degree program.

**J.  Creating a new program** by merging or consolidating with one or more existing programs <u>and</u> basing the new program entirely on existing courses converted to semester calendar

a)  Provide Current Program Name(s) and Program Code(s)

b)  Brief description of proposed program and rationale for converting the existing coursework to a separately registered program.

c)  Brief description of the expected impact on existing program(s).

d)  Adjustments the institution will make to its current resource allocations to support the newly created program.

e)  Statement confirming that the admissions standards, process and evaluation methods are the same as those in the existing program.

## 2. Program Course Mask and Schedule

**Directions:**
a. Using Table 1, display program course sequencing by semester.  Use the table to show how a typical student may progress through the program.
b. Using **Table 2** (which follows below), display program in the quarter calendar and how program has been converted to the semester calendar.  Please follow the course conversion designation directions on Table 2.

**Table 2**
**Program Course Conversion Table: Quarter Calendar and Semester Calendar Comparison**

Name of Program: **Computer Aided Drafting Technology**          Degree: **AAS**

**Directions:** Use the following legend to show course comparison in quarter calendar and semester formats. Display all required program courses and program-specific elective courses. Display General Education course requirements with generic label (not each course) of "Liberal Arts and Sciences "= X Credits. Clarify how course sequences in the quarter calendar convert to semesters by either bracketing or using some other notation.

**Course Conversion Designations**

**Semester Equivalent (SE)** – Closely corresponds to one quarter course (e.g., a 4 quarter credit hour (qch) course which becomes a 3 semester credit hour (sch) course.) The semester course may develop material in greater depth or length, but no new content is added. Identify the number and the title of the quarter course being converted.

**Semester Replacement (SR) –** A semester course (or courses) taking the place of previous a quarter course(s) by rearranging or combining material from a previous quarter course(s) (e.g. a two semester sequence that replaces a three quarter sequence). List the new semester course or sequence and the old quarter course or sequence it is replacing. For all SR designations, if additional space is needed to describe the distribution of content among courses, use space provided in the last column.

**New (N)** - No corresponding quarter course(s). This course adds significant new curriculum content.

**Course Deleted (D) – No corresponding semester course.**

| Year | QUARTER: Current Program Courses | | | SEMESTER: Converted Program Courses | | | Course Conversion Designation | |
|---|---|---|---|---|---|---|---|---|
| | Course # | Course Title | QCH | Course # | Course Title | SCH | Course Conversion Designation SE, SR, N, D | Additional comments on content distribution within semester courses |
| 1 | 0813-220 | Engineering Fundamentals | 4 | | | | D | Course to be retained for other ES programs |
| | 0890-212 | Computing Tools for ET | 4 | NCAD-112 | Computing Tools for ET | 3 | SE | Adding new content in website development |
| | 0813-222 | Manufacturing Processes | 4 | | | | D | Course to be retained for other ES programs |
| | 0890-214 | CAD Applications in ET | 4 | | | | D | Course to be retained for other ES programs |
| | | | | NCAD-150 | Engineering Graphics in AEC | 3 | N | |
| | 0890-210 | Construction CAD I | 4 | NCAD-170 | Construction CAD I | 3 | SE | |
| | 0890-208 | A/E/C Meas. Systems | 2 | NCAD-108 | Data Collection and Analysis | 3 | SE | Adding new content in blueprint reading |
| | --- | --- | | NCAD-180 | Civil Technology Graphics | 3 | N | |
| | 0887-200 | Freshman Seminar | 2 | | | | | |
| | | | | xxxx-xxx | First Year Seminar | 3 | | |
| | 0884-212 | Integrated Algebra | 4 | | | | D | |
| | 0884-220 | Elements of Trigonometry | 4 | NMTH-220 | LAS-Elective (Trigonometry) | 3 | SE | |
| | | | | NMTH-275 | Advanced Mathematics | 3 | SE | From Year 2, was 0884-271 |
| | 0502-227 | Writing Seminar | 4 | | | | | |
| | | | | xxxx-xxx | First Year Writing Seminar | 3 | | |
| | 0885-201 | Physics I | 4 | | | | | Moved to Year 2 as NSCI-201 |
| | CLA | Humanities | 4 | | | | | |
| | | | | xxxx-xxx | LAS-P1 | 3 | | |
| | 1105-xxx | PE Wellness | 0 | xxxx-xxx | PE Wellness | 0 | | |

| Year | Course # | Course Name | Cr | New Course # | New Course Name | Cr | Type | Notes |
|---|---|---|---|---|---|---|---|---|
| 2 | 0890-220 | Construction CAD II | 4 | NCAD-220 | Construction CAD II | 3 | SE | |
| | 0890-255 | Constr. Matl & Meths I | 3 | NCAD-255 | Constr. Matl & Meths I | 3 | SE | |
| | 0890-230 | Construction CAD III | 4 | NCAD-230 | Construction CAD III | 3 | SE | |
| | 0890-265 | Const. Matl & Meths II | 3 | NCAD-265 | Const. Matl & Meths II | 3 | SE | Adding new content in sustainability |
| | 0890-275 | Principles of Structural Systems | 3 | NCAD-275 | Principles of Structural Systems | 3 | SE | Adding new content in building codes |
| | 0806-101 | Job Search Processes | 2 | NCAD-201 | Job Search Process for CADT | 3 | SE | Adding new content in portfolio development |
| | 0890-310 | Adv. Construction CAD | 4 | | | | | Moved to Year 3 as NCAD-240 |
| | 0890-280 | GIS Fundamentals | 3 | NCAD-280 | GIS Fundamentals | 3 | SE | |
| | 0890-355 | Site Utils. Mech/Elec. Systems | 3 | NCAD-285 | MEP Systems | 3 | SE | Name change, added content in sustainability |
| | | | | NSCI-201 | LAS-P6 (Principles of Physics) | 3 | SE | From Year 1, was 0885-201 |
| | 0884-271 | Advanced Math | 4 | | | | | Moved to Year 1 as NMTH-275 |
| | CLA | Humanities | 4 | | | | | |
| | CLA | Social Science | 4 | | | | | |
| | CLA | Social Science | 4 | | | | | |
| | | | | xxxx-xxx | LAS-P2 | 3 | | |
| | 1109-xxx | PE Activities | 0 | xxxx-xxx | PE Wellness | 0 | | |
| | NCAD-299 | Co-op Work Experience | 0 | NCAD-299 | Co-op – CADT | 0 | SE | |
| 3 | | | | NCAD-240 | Advanced Construction CAD | 3 | SE | From Year 2, was 0890-310 |
| | 0890-320 | Presentation Graphics | 4 | NCAD-250 | Presentation Graphics | 3 | SE | |
| | 0890-375 | Construction Regulations | 3 | | | | D | |
| | 08xx-xxx | Technical Elective | 3 | xxxx-xxx | Technical Elective | 3 | SE | |
| | 0882-296 | Capstone | 3 | | | | | |
| | 08xx-xxx | Deaf Studies | 3 | | | | | |
| | | | | xxxx-xxx | LAS-P3 | 3 | | |
| | | | | xxxx-xxx | LAS-P4 | 3 | | |
| N/A | 0890-216 | Design, Dim & Tolerancing | 3 | | | | | Course to be retained for other ES programs |
| | 0890-399 | Independent Study | 1-5 | NCAD-199 | Independent Study | 1-5 | SE | |
| | 0890-398 | Special Topic | 1-5 | NCAD-289 | Special Topics | 1-5 | SE | |
| | | **Total** | **105** | | **Total** | **75** | | |

## 3. Program Level Outcomes Assessment Plan

See Program Outcomes Assessment <u>Overview and Directions</u> for guidance, required form, and sample plans.

| ☒ | a. Attach updated Program Level Outcomes Assessment Plan which should include how your program meets the RIT Essential Program Outcomes outlined in the RIT <u>Academic Program Profile</u>.<br>b. Program Assessment Plan should follow one of the formats found at:<br>*Program Level Outcomes Assessment Plan Blank Form Option 1*<br>*Program Level Outcomes Assessment Plan Blank Form Option 2*<br>*Program Level Outcomes Assessment Plan Blank Form Option 3* |
|---|---|
| ☒ | c. Complete information requested in <u>Table 3</u> for Middle States.<br>(See: <u>Sample Completed Form</u> for guidance and other information.) |

## 4. RIT Incremental Resources (faculty, space, library holdings, equipment, other)

It is not expected that significant incremental resources will be required to deliver the same program outcomes in a semester format. If you believe that incremental resources are required, please explain.

| Additional lab space is needed to effectively include curriculum in sustainability, energy and conservation as related to the construction industry. |
|---|

## 5. RIT Course Outlines
Course outlines for all required courses offered by the program and any program-specific electives must be deposited in the course outlines-final PDF module using the proper naming conventions. Use the RIT <u>Course Outline Form</u>.

For guidance on assignment of appropriate credit hour/contact hour designation, please refer to:
<u>http://www.msche.org/documents/Degree-and-Credit-Guidelines-062209-FINAL%5B1%5DDec09.pdf</u>

# Programform.doc

# NYSED Documentation Form

## Audience

This document is intended for all department chairs and program directors.

## Summary

This document includes the information and required forms for submission of program to NYSED for semester conversion.

# Change Log

| Responsible | Date | Version | Short description |
|---|---|---|---|
| Chris Licata | 6/15/2010 | 1 | Document originator |
| Jim Fugate | 8/15/2010 | 2.1 | Updated and posted document |
| Jim Fugate | 8/18/2010 | 2.2 | Added Bill's comments and modified course names |
| Jim Fugate | 8/30/2010 | 3 | Made modifications based on comments from Marianne Gustafson |
| Jim Fugate | 10/19/2010 | 4 | Included modifications to **Program Goals, Objectives, Focus and/or Design** based on feedback from Marianne Gustafson and Bill LaVigne |
| Jim Fugate | 10/22/2010 | 4.1 | Minor modification to Table 2 |
| Jim Fugate | 12/17/2010 | 5 | Revised General Education |
| Jim Fugate | 3/17/2011 | 6 | Updated Gen Ed Labels Table 2 |

**Table 1a:  Undergraduate Program Schedule**

## Computer Aided Drafting Technology - AAS

- Indicate academic calendar type:  _X_ Semester ___Quarter    ___ Trimester      ___Other (describe)

| Term:  Fall 1 | | | | Check course classification (s) | Term:  Summer 2 | | | | (Check course classification (s) |
|---|---|---|---|---|---|---|---|---|---|
| Course Number & Title | CR | LAS | Maj | New | Prerequisite(s) | Course Number & Title | CR | LAS | Maj | New | Prerequisite(s) |
| ASL/Deaf Cultural Studies* | | | | | | NCAD-299  Co-op: CADT | 0 | | ✓ | | NCAD-201 |
| NCAD-112 Computing Tools for ET | 3 | | ✓ | | None | | | | | | |
| NCAD-150 Engineering Graphics in AEC | 3 | | ✓ | ✓ | None | | | | | | |
| LAS-P1 | 3 | ✓ | | | | | | | | | |
| First-year Seminar | 3 | ✓ | | | | | | | | | |
| LAS-Elective (NMTH-220 Trigonometry) | 3 | ✓ | | | | | | | | | |
| Term credit total: | 15 | 9 | 6 | | | Term credit total: | 0 | 0 | 0 | | |

| Term:  Spring 1 | | | | Check course classification (s) | Term:  Fall 3 | | | | (Check course classification (s) |
|---|---|---|---|---|---|---|---|---|---|
| Course Number & Title | CR | LAS | Maj | New | Prerequisite(s) | Course Number & Title | CR | LAS | Maj | New | Prerequisite(s) |
| NCAD-170 Construction CAD I | 3 | | ✓ | | None | NCAD-240  Adv. Construction CAD | 3 | | ✓ | | NCAD-230, NCAD-265, NCAD-275, NCAD-285, NCAD-250 (co-req) |
| NCAD-108  Data Collection and Analysis | 3 | | ✓ | | None | NCAD-250  Presentation Graphics | 3 | | ✓ | | NCAD-240 (co-req) |
| NCAD-180  Civil Technology Graphics | 3 | | ✓ | ✓ | None | Technical Elective ** | 3 | | ✓ | | |
| NMTH-275  Advanced Mathematics | 3 | | ✓ | | | LAS-P3 | 3 | ✓ | | | |
| First-Year Writing Seminar | 3 | ✓ | | | | LAS-P4 | 3 | ✓ | | | |
| xxxx-xxx  PE-Wellness | 0 | | | | | | | | | | |
| Term credit total: | 15 | 3 | 12 | | | Term credit total: | 15 | 6 | 9 | | |

| Term:  Fall 2 | | | | Check course classification (s) | Term: | | | | Check course classification (s) |
|---|---|---|---|---|---|---|---|---|---|
| Course Number & Title | CR | LAS | Maj | New | Prerequisite(s) | Course Number & Title | CR | LAS | Maj | New | Prerequisite(s) |
| NCAD-220  Construction CAD II | 3 | | ✓ | | NCAD-108,  NCAD-170 | | | | | | |
| NCAD-255  Constr. Materials & Methods I | 3 | | ✓ | | NCAD-108,  NCAD-170 | | | | | | |
| NCAD-275  Principles of Structural Systems | 3 | | ✓ | | NCAD-108,  NCAD-170 | | | | | | |
| LAS-P6 (NSCI-201 Principles of Physics) | 3 | ✓ | | | NMTH-180 | | | | | | |
| NCAD-201  Job Search Process for CADT | 3 | | ✓ | | | | | | | | |
| xxxx-xxx  PE – Wellness | 0 | | | | | | | | | | |
| Term credit total: | 15 | 3 | 12 | | | Term credit total: | | | | | |

| Term:  Spring 2 | | | | Check course classification (s | Term: | | | | Check course classification (s) |
|---|---|---|---|---|---|---|---|---|---|
| Course Number & Title | CR | LAS | Maj | New | Prerequisite(s) | Course Number & Title | CR | LAS | Maj | New | Prerequisite(s) |
| NCAD-230  Construction CAD III | 3 | | ✓ | | NCAD-220, NCAD-255 | | | | | | |
| NCAD-265  Constr. Materials & Methods II | 3 | | ✓ | | NCAD-255 | | | | | | |
| NCAD-285  MEP Systems | 3 | | ✓ | | NCAD-220 | | | | | | |
| NCAD-280  GIS Fundamentals | 3 | | ✓ | | None | | | | | | |
| LAS-P2 | 3 | ✓ | | | | | | | | | |
| Term credit total: | 15 | 3 | 12 | | | Term credit total: | | | | | |

| Program Totals: | Credits: 75 | Liberal Arts & Sciences: 24 | Major: 51 | Elective & Other: 0 |
|---|---|---|---|---|

**Cr:** credits   **LAS:** liberal arts & sciences   **Maj:** major requirement   **New:** new course   **Prerequisite(s):** list prerequisite(s) for the noted courses

\* A 3-credit ASL/Deaf Cultural Studies course, to be taken at NTID or another college of RIT; will count for RIT Gen Ed credit if it is simultaneously an RIT (non-NTID) Perspective Category course.

\*\*NOTE:  See list of Technical Electives on next page (p. 15)

**Technical Elective**: Choose one from the following list of courses, or by departmental approval.

NAIS-120 Principles of Design and Color
NAIS-130 Raster and Vector Graphics
NHSS-223 Scenic and Lighting Technology
CVET-140 Materials of Construction & CVET-141 Materials of Construction Lab (permission required)
CVET-160 Surveying & CVET-161 Surveying Lab (permission required)

# Table1.doc

## Program Course Mask and Schedule

### Audience

This document is intended for all department chairs and program directors.

### Summary

This document is the table for the program course mask and schedule.

## Change Log

| Responsible | Date | Version | Short description |
|---|---|---|---|
| Chris Licata | 6/15/2010 | 1 | Document originator |
| Jim Fugate | 8/18/2010 | 2 | Revised Course Names |
| Jim Fugate | 10/5/2010 | 3 | Updated course numbers and general education |
| Jim Fugate | 10/21/2010 | 4 | Updated prerequisites |
| Jim Fugate | 11/17/10 | 5 | NCC Feedback |
| Jim Fugate | 12/17/2010 | 6 | Revised General Education |
| Jim Fugate | 3/17/2011 | 7 | Updated Gen Ed Labels |

TABLE 3

# Use of Program Level Assessment Data to
# Inform Calendar Conversion

Program Name/College ____Computer Aided Drafting Technology / NTID_____

Program Assessment Contact __Dino Laury (Chair) & James Fugate (Assessment Coordinator)_____

Describe how you used the results from your current program level outcomes assessment plan to inform proposed changes to your program made as part of the conversion to semesters.

| Changes to Curriculum (program focus, content, requirements, course inventory, etc.) | Data Source (2009-10) List data, measures, findings, etc. used to inform change(s). |
|---|---|
| The two areas of concern from the outcomes assessment plan were (1) understanding and creating dimensions and tolerances and (2) finding and incorporating technical information into drawings and documentation.<br>As a result, the two primary changes made to the curriculum to address these concerns are the establishment of Blueprint Reading content and the merging of Construction Regulations into other existing courses to make it more context oriented. | 69% of students met or exceeded the performance criteria/benchmarks for creating and adding dimensions and tolerances.<br>33% of students met or exceeded the performance criteria/benchmarks for finding technical information and other source material on the Internet and incorporating the information into drawings and documentation. |
| **Changes to Instruction<br>(pedagogy, strategies, etc.)** | |
| Students need more training in understanding and utilizing technical vocabulary and information.  The curriculum in the CADT technical courses will include ongoing practice in interpreting and reciting technical information. | 33% of students met or exceeded the performance criteria/benchmarks for finding technical information and other source material on the Internet and incorporating the information into drawings and documentation. |
| **Changes to Program Assessment Plan<br>(outcomes, data sources, instruments, etc.)** | |
| The current Outcomes Assessment Plan was developed when the program was just beginning to shift its focus to 3-D modeling.  In the semester system, 3-D modeling and the use of Building Information Modeling (BIM) technology will be the predominant focus of the program.  The Outcomes Assessment Plan needs to be updated to reflect this change in program focus.<br>Furthermore, the Program Assessment Plan was expanded to include the five Essential Program Learning Outcomes from the RIT Academic Program Profile. | Lack of assessment in Building Information Modeling (BIM) and the five Essential Program Learning Outcomes. |

| Other Programmatic Changes/Comments | |
|---|---|
| Another area of change that was not directly measured from the outcomes assessment plan is the need to improve student portfolios in both hard copy and electronic form.  This concern resulted in the expansion of the Job Search course so that students will receive direct instruction on developing and maintaining their portfolios. | Lack of assessment in student portfolios. |

# Table3.doc

# Version 1

## Audience
This document is intended for all department chairs and program directors.

## Summary

This document is used to collect information on the use of program-level outcomes data to make improvements and changes to programs.

# Change Log

| Responsible | Date | Version | Short description |
|---|---|---|---|
| Anne Wahl | 6/15/2010 | 1 | Document originator |
| Jim Fugate | 8/10/2010 | 2 | Semester Conversion |
| Jim Fugate | 10/21/2010 | 2.1 | Minor modifications |
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**Option 1**
**Program Level Outcomes Assessment Plan**

Program Name/College: ___Computer Aided Drafting Technology (CADT) / National Technical Institute for the Deaf (NTID)_____

College Contact for Program Assessment: ____James Fugate (Program Assessment Coordinator) & Dino Laury (Department Chair)_____

| Program Goals | Student Learning Outcomes | Academic Program Profile | Data Source/Measure Curriculum Mapping | Benchmark | Timeline | Data Analysis Key Findings | Use of Results Action Items and Dissemination |
|---|---|---|---|---|---|---|---|
| Develop the ability to produce accurate 2-D drawings and Building Information Modeling (BIM) projects. | Use CAD to produce 2D technical drawings | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☐ Integrative Literacies<br>☐ Global Interconnectedness<br>☐ Creative/Innovative Thinking | Engineering Graphics NCAD-150<br><br>Technical drawing practical<br><br>Practical grade | 80% of students will score 75% or better on final practical grade | Collection: annually at end of fall semester beginning AY 2013/2014<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Extract and modify orthographic technical drawings from a BIM model | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☐ Integrative Literacies<br>☐ Global Interconnectedness<br>☐ Creative/Innovative Thinking | Construction CAD II NCAD-220<br><br>Final portfolio review of construction documents<br><br>Portfolio grade | 80% of students will score 75% or better on final portfolio review grade | Collection: annually at end of fall semester beginning AY 2014/2015<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Generate reports on information contained in a BIM model | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☐ Creative/Innovative Thinking | Construction CAD II NCAD-220<br><br>Course embedded assignments<br><br>Rubric scale 1-5 | 80% of students will score 3 or more on the rubric scale 1-5 | Collection: annually at end of fall semester beginning AY 2014/2015<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Create a BIM project based on preliminary information | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☒ Creative/Innovative Thinking | Advanced Construction CAD NCAD-240<br><br>Course embedded project<br><br>Project grade | 80% of students will score 75% or better on final project grade | Collection: annually at end of fall semester beginning AY 2015/2016<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Use a BIM project as a basis to produce detailed sections and other details | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☒ Creative/Innovative Thinking | Advanced Construction CAD NCAD-240<br><br>Final portfolio review of construction documents<br><br>Portfolio grade | 80% of students will score 75% or better on final portfolio review grade | Collection: annually at end of fall semester beginning AY 2015/2016<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Develop the skills to acquire, record and analyze information derived from field measurements, existing drawings and other technical documents | Create and interpret dimensions for technical drawings | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☐ Creative/Innovative Thinking | Data Collection and Analysis NCAD-108<br><br>Final dimensioning practical<br><br>Practical grade | 80% of students will score 75% or better on final dimensioning practical grade | Collection: annually at end of spring semester beginning AY 2013/2014<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Define appropriate technical vocabulary as used by the construction industry | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☐ Creative/Innovative Thinking | Data Collection and Analysis NCAD-108<br><br>Final vocabulary exam<br><br>Exam grade | 80% of students will score 75% or better on final vocabulary exam grade | Collection: annually at end of spring semester beginning AY 2013/2014<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Field measure and input existing space conditions into CAD | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☒ Creative/Innovative Thinking | Data Collection and Analysis NCAD-108<br><br>Course project<br><br>Project grade | 80% of students will score 75% or better on course project grade. | Collection: annually at end of spring semester beginning AY 2013/2014<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Research technical information and incorporate into drawings and documentation | ☒ Critical Thinking<br>☒ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☐ Creative/Innovative Thinking | Advanced Construction CAD NCAD-240<br><br>Design project<br><br>Rubric scale: 1-5 | 80% of students will score 3 or above on incorporating technical information into design project | Collection: annually at end of fall semester beginning AY 2015/2016<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| Understand the basic characteristics of construction materials and procedures | Identify various construction materials using correct terminology | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☐ Creative/Innovative Thinking | Construction Materials and Methods II, NCAD-265<br><br>Terminology exam<br><br>Exam grade | 80% of students will score 75% or better on terminology exam | Collection: annually at end of spring semester beginning AY 2014/2015<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Identify characteristics of common construction materials | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☐ Creative/Innovative Thinking | Construction Materials and Methods II, NCAD-265<br><br>Final Exam<br><br>Exam grade | 80% of students will score 75% or better on course final exam | Collection: annually at end of spring semester beginning AY 2014/2015<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Develop the skills to create and present visualization materials | Develop and maintain a portfolio of student projects in both hard copy and electronic form | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☒ Creative/Innovative Thinking | Construction CAD III, NCAD-230<br><br>Student Portfolio<br><br>Portfolio review grade | 80% of students will score 75% or better on portfolio review | Collection: annually at end of spring semester beginning AY 2014/2015<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Generate renderings and animations from CAD and BIM projects | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☐ Integrative Literacies<br>☐ Global Interconnectedness<br>☒ Creative/Innovative Thinking | Presentation Graphics, NCAD-250<br><br>Final project<br><br>Final project grade | 80% of students will score 75% or better on final project grade | Collection: annually at end of fall semester beginning AY 2015/2016<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Effectively prepare and present projects utilizing presentation graphics | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☒ Creative/Innovative Thinking | Presentation Graphics, NCAD-250<br><br>Final project presentation<br><br>Final project presentation grade | 80% of students will score 75% or better on final project presentation grade | Collection: annually at end of fall semester beginning AY 2015/2016<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Demonstrate creative skills on a design project | ☒ Critical Thinking<br>☒ Ethical Reasoning<br>☒ Integrative Literacies<br>☒ Global Interconnectedness<br>☒ Creative/Innovative Thinking | Advanced Construction CAD, NCAD-240<br><br>Design project<br><br>Design project grade | 80% of students will score 75% or better on design project grade | Collection: annually at end of fall semester beginning AY 2015/2016<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| Understand current issues affecting the construction industry | Explain the purpose and role of building codes in the construction industry | ☒ Critical Thinking<br>☒ Ethical Reasoning<br>☒ Integrative Literacies<br>☒ Global Interconnectedness<br>☐ Creative/Innovative Thinking | Principles of Structural Systems, NCAD-275 Presentation Graphics, NCAD-250<br><br>Building codes exam<br><br>Exam grade | 80% of students will score 75% or better on building codes exam | Collection: annually at end of fall semester beginning AY 2014/2015<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Identify issues related to sustainability in the construction industry | ☒ Critical Thinking<br>☒ Ethical Reasoning<br>☒ Integrative Literacies<br>☒ Global Interconnectedness<br>☒ Creative/Innovative Thinking | MEP Systems, NCAD-285<br><br>Sustainability exam<br><br>Exam grade | 80% of students will score 75% or better on sustainability exam | Collection: annually at end of spring semester beginning AY 2014/2015<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |

| Develop positive skills required to be effective on the job | Engage productively in a collaborative team project | ☒ Critical Thinking<br>☒ Ethical Reasoning<br>☒ Integrative Literacies<br>☒ Global Interconnectedness<br>☒ Creative/Innovative Thinking | Advanced Construction CAD, NCAD-240<br><br>Team project<br><br>Self evaluation, peer review and teacher evaluation using rubric scale: 1-5 | 80% of students will score 3 or more on the rubric scale 1-5 | Collection: annually at end of fall semester beginning AY 2015/2016<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
|---|---|---|---|---|---|---|---|
| | Accurately and clearly present technical information to an audience of peers | ☒ Critical Thinking<br>☐ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☒ Creative/Innovative Thinking | Presentation Graphics, NCAD-250<br><br>Final project presentation<br><br>Self evaluation, peer review and teacher evaluation using rubric scale: 1-5 | 80% of students will score 3 or more on the rubric scale 1-5 | Collection: annually at end of fall semester beginning AY 2015/2016<br><br>Spreadsheet for data collection | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Apply technical knowledge and skills on a co-op work experience | ☒ Critical Thinking<br>☒ Ethical Reasoning<br>☒ Integrative Literacies<br>☐ Global Interconnectedness<br>☒ Creative/Innovative Thinking | Co-op Work Experience, NCAD-299<br><br>Performance on the job<br><br>RIT Supervisor Online Co-op Evaluation System | 80% of students will meet or exceed overall satisfactory score on co-op job | Collection: annually at end of summer beginning AY 2014/2015<br><br>RIT Supervisor Online Co-op Evaluation System | Data collected by NTID Center on Employment (NCE) | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Gain entry level employment in the construction industry | ☐ Critical Thinking<br>☐ Ethical Reasoning<br>☐ Integrative Literacies<br>☐ Global Interconnectedness<br>☐ Creative/Innovative Thinking | After graduation<br><br>Job placement<br><br>NCE | 90% of graduates who are seeking employment in the construction industry will be employed | Collection: annually during spring beginning AY 2016/2017<br><br>Survey of graduates | Data collected by NTID Center on Employment (NCE) | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |
| | Indicate satisfaction with program and courses | ☐ Critical Thinking<br>☐ Ethical Reasoning<br>☐ Integrative Literacies<br>☐ Global Interconnectedness<br>☐ Creative/Innovative Thinking | Upon completion of final semester<br><br>Student Satisfaction Survey<br><br>Survey results | 80% of students will rate all aspects of the program and courses as satisfactory or above | Collection: annually near the end of fall semester beginning AY 2015/2016<br><br>Survey results summary | Data collected by Assessment Coordinator | Shared with program faculty, annual college summary report, NTID Annual Report, and RIT requested reports |