Mission Statement:
Construction Technology: Associate in Applied Science Degree

The Construction Technology program at SUNY Delhi was the first post-secondary construction program in the United State and is nationally accredited by the American Council for Construction Education (ACCE).

Consistent with SUNY Delhi’s mission, the Construction Technology program provides students with hands-on, experiential learning that focuses on commercial, residential, heavy/civil, and industrial construction. The program fully prepares students in the most modern techniques of “Means & Methods” including: construction materials, basic structural theory, environmental and power systems, materials testing, surveying, field supervision, project management, and contemporary topics such as LEED applications.

Delhi’s Construction Technology faculty is dedicated to providing both the intellectual and practical foundation needed for students to excel in the contemporary construction management field. Therefore, course content couples theory with a robust applied component so students learn by doing.

Through the integration of mathematics, liberal arts, and business courses, the program strives to develop skills and knowledge that will provide strong foundations in areas such as materials estimating, planning, scheduling, budgeting, and project execution.

Delhi's Construction Technology Associate in Applied Science (A.A.S.) program has a solid and long-standing reputation as a premier instructional program for all aspects of building construction technology and related areas.

Academic Quality Plan:
Part A: Summary
Delhi’s Construction Technology (CT) Program strives to:

* Deliver extensive laboratory work to augment classroom instruction. Laboratory practice, where feasible, includes the design, engineering, planning, and erection of building mockups that are close to full scale.

* Provide instruction in estimating, law and contracting, construction planning and control, building codes, and other courses closely related to the field control of the construction process;

* Recruit and retain faculty who are experienced construction professionals with firsthand experience in the construction industry;

* Objectively assess students’ proficiency and competence in achieving and demonstrating learning outcomes needed to succeed in the highly competitive construction industry.

* Provide opportunities for students to interface with construction industry and civic organizations such as the Associated General Contractors of America (AGC); The MOLES (Heavy Construction); and Associated Schools of Construction (Regional CM Competition). Activities such as construction field trips, community service projects, and scholarship opportunities are offered.
*Assist Associate degree graduates in continuing their studies in Delhi’s Construction Management Bachelor of Technology program. This will enhance their construction training with additional management fundamentals, leadership skills, and industry internships. It will also help their career opportunities as project superintendents and construction project managers.

**Part B: Goals & Objectives:**

**Performance Objectives for Construction Technology A.A.S.**

A graduate of the Construction Technology A.A.S. program should be able to:

1. Discuss the academic and career opportunities available in the field of Construction Technology and have a working knowledge of how to utilize these opportunities.
   - AECT 100
2. Discuss and apply the principles and practices of wood construction, including building layout; floor, wall and roof framing; and member loading.
   - CNST 110
3. Apply fundamental principles of drafting to residential drawings, including basic lettering and linework techniques, wall sections, basic working drawings, and residential details.
   - ARCH 110
4. Understand and apply the fundamental techniques, skills, and computer usage necessary in the construction industry including word processing, spreadsheets, and CAD.
   - ARCH 110
5. Demonstrate an understanding of the strengths of materials through the analysis of basic forces, conditions for equilibrium, stress-strain relationships, riveted and bolted connections, steel and timber beam design, simple column design, concrete form work design, and temporary structures.
   - AECT 150
6. Exhibit knowledge of the practical and technical aspects of concrete and masonry materials including soils classification, concrete mix design, applicable codes, report writing, and testing.
   - CNST 150
7. Understand and utilize construction surveying practices for residential and commercial structures, including use and care of equipment.
   - CNST 160
8. Demonstrate knowledge of the methods and materials of commercial buildings and structures, as well as construction project planning, construction site record keeping, and safety.
   - CNST 210
9. Develop working drawings for a complete commercial building project including plans, sections, elevations, and details.
   - ARCH 220
10. Fully understand and be able to transmit pertinent information concerning the environmental hazards of chemicals and building materials produced on or brought to a construction site, as well as being aware of how hazardous materials should be handled, stored, and disposed in accordance with OSHA regulations. Recognize and understand construction site safety standards.
    - CNST 230
11. Analyze the various components within a building and compare the different construction materials relative to current construction practices and the implications for indoor air quality.
    - CNST 295
12. Perform construction estimating calculations, including quantity take-offs, labor rates, overhead, and profit, and be conversant with the skills necessary to do time scheduling and project management using computer applications.
    - CNST 260
13. Understand the fundamentals of mechanical and electrical code requirements for buildings. Comprehend the functions of various mechanical and electrical systems as they pertain to residential, commercial, and industrial applications. Become aware of the importance of indoor air quality (IAQ), as it relates to occupancy.
    - AECT 280
14. Understand and apply the principles of physics of moisture control to the field of construction.
    - CNST 295
15. Comprehend the fundamentals of project bidding, bonding and insurance, available delivery systems, contractual agreements, legal and performance responsibilities, and further contracting practices that are applied throughout the construction industry.
    - CNST 270
Performance Tasks Based Upon Performance Objectives

Task 1  Identify structural dimension grades of lumber and understand the grade stamp.  
(Performance Objective #2)  
AECT 110

Task 2  Generate a buildable first floor residential plan using AutoCAD given appropriate design criteria. (Performance Objective #3)  
ARCH 110

Task 3  Create a Wall Plate Layout given a floor plan and appropriate materials.  
(Performance Objective #2)  
CNST110

Task 4  Generate load tracing for a given structure.  
(Performance Objective #5)  
AECT 150

Task 5  Perform a gradation, proctor, and in-place density test.  
(Performance Objective #6)  
CNST 150

Task 6  Generate a topographic survey using appropriate survey instruments.  
(Performance Objective #7)  
CNST 160

Task 7  Analyze the design and estimate materials for a commercial curtain wall system.  
(Performance Objective #8)  
CNST 210

Task 8  Create a critical path construction schedule given engineering blueprints  
(Performance Objective #8)  
CNST 210

Task 9  Complete a 10 hour OSHA construction site safety class  
(Performance Objective #10)  
CNST 230

Task 10  Create a complete building estimate in an Excel spreadsheet.  
(Performance Objective #12)  
CNST 260

Task 11  Create a sample building contract which is in compliance with New York State Building Codes.  
(Performance Objective #15)  
CNST 270

Task 12  Create a plumbing isometric drawing for a commercial rest room facility  
(Performance Objective #13)  
AECT 280
Typical Outcomes Performance Spreadsheet:

- Student Data Kept on Record for Submission to ACCE
- **See Attachment # 4** (From ACCE 3rd Year Report: May 2012)
  
  *Note:* Attachment # system consistent with ACCE 3rd Year Report: May 2012
- Student Names changed to #’s.

### Attachment #4a: ACCE 3rd Year Report 2012

<table>
<thead>
<tr>
<th><strong>PERFORMANCE OUTCOMES</strong></th>
<th>COURSE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Identify structural dimension grades of lumber and understand the grade stamp</td>
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<td>AECT 280</td>
</tr>
</tbody>
</table>

**AVERAGE**

<table>
<thead>
<tr>
<th>Student # 1</th>
<th>Student # 2</th>
<th>Student # 3</th>
<th>Student # 4</th>
<th>Student # 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.67</td>
<td>1</td>
<td>4</td>
<td>2.75</td>
<td>3.6</td>
</tr>
</tbody>
</table>

*Blank = Not in course*

1 = Failed to Meet or N/A

2 = Below Standard

3 = Meets Standard

4 = Exceeds Standard
Academic Quality Plan:

Part C: Timetable/Results/Action Items

Yearly Outcomes Assessment Timetable:

Fall Semester:
September:
- Generate new list of incoming Freshmen for Performance Outcomes
- Resend “Action Items” from previous May to Industry Advisory Council (IAC)
- Assessment Surveys:
  - 4th year Construction Management Bachelor of Technology (BT) students: (Required: Students who were in CT AAS program & completed their internships)
  - Employers of BT Interns
    (See Part C: Action Items: These surveys will be moved to coincide with end of BT Internship.)
- Internship Info Emailed to Freshman AAS Class during Freshman Orientation (AECT 100): Recommendation of IAC.

October: Industry Advisory Council (IAC) Meeting:
- Review Assessment surveys from previous spring semester.
- Action Items: Require College approval or changes in-house?

November:
- AGC National Scholarships applications due. (Typically November 1st)

December:
- Performance Outcomes: Update @ end of semester

Spring Semester:
May:
- AGC New York Scholarships applications due. (Typically May 15th)

May: (Finals Week) Assessment Surveys: (Note: Surveys Moved to April to be part of 3rd Year Report)
- 2nd year Construction Technology (CT) students.
- 4th year Construction Management (CM) students: (Required: Students who were in CT AAS program & completed their internships): To be moved to the fall semester: See above and Action Items.
- Employers of CM Interns: To be moved to the fall semester: See above and Action Items.
  End of May
- “5th year out” CT Graduate Surveys. (2007 Graduates for 2012 ACCE Report.)
- Tabulate and assess data: Send to Dean, Provost, & IAC
- Generate “Action Items” to be considered in October w/ IAC
Results of Student & Industry Assessment

Note: Attachment # system consistent with ACCE 3rd Year Report: May 2012

Survey Summaries: (April 2012 for all Surveys)

1. 2nd year AAS Construction Technology (CT) Students: See Attachment #3a.
    Summary Items:
    • 78% of AAS/CT students are enrolling in SUNY Delhi Bachelor of Technology (BT) in Const. Management for Fall 2012. (See Question #2 in Attachment # 3a)
    • CT AAS Rating: 50% Exceptional; 43% Good (Q=Question #12)
    • AAS Course Rankings: “Below Expectations” experienced in some AAS CT courses.
      See Attachment 3e: Follow-up AAS Survey

2. 4th year BT/CM Students (Completed AAS & BT Internship): See Attachment #3b.
    Summary Items:
    • 85% helped by AAS Program in getting Internship (Q #7)
    • CT AAS Rating: 40% Exceptional; 35% Good ; 20% Avg; 5% Poor (Q#12)
    • Ranking of AAS Courses: “Below Expectations” experienced in some AAS CT courses.
      See Attachment 3f: Follow-up BT Survey

3. Industry Performance of BT/CM Students in BT Internship Program
   (First year after AAS completion): Surveys not attached to website: Confidential:
   (Will reformate survey next school year)
   Summary Items:
   • 18 Performance Evaluations Reviewed
   • Part 2- Question #4: 100% of Employers would hire intern if position available.
   • Part 2- Question #6: 94% of Employers would hire another SUNY Delhi intern.

4. 5th year Graduates of AAS Construction Technology Program: Class of 2007
   See Attachment #3c.
   Summary Items:
   • 77% Response Rate: 10 of 13 Graduates submitted survey answers.
   • 70 % of graduates responding are working in the industry. (Q#8)
   • See Attachment 3c, Question # 10 for Salary Ranges
   • CT AAS Rating: 50 % Exceptional; 50 % Good (Q#12)
   • AAS Graduates Ranking of AAS Courses:
      See Attachment 3d: Summary of Q’s 20-28

Performance Outcomes Summary: See Attachment #4.

• New scoring system for academic years 2011-2012 & 2010-2011 continues to use number system to measure performance outcomes. Attached file shows data for current academic years.

Scholarship Awards: Indicator of Industry confidence in CT Program, and the students’ ability to perform.

• 1 AGC National Scholarship winner this year. ($ 2,500)
• 1 AGC/New York Scholarship winner this year. ($ 2,500)
• 4 MOLES Scholarships: $ 8,000 total
• 1 MOLES Student Award: $ 1,000 total
• 3 Delaware County Town Highways Supts. Assoc. Scholarships $ 1,500 total.
**Enrollment Data Summary:** See Attachment #5, with description of analysis.

**Assessment Action Items:**

1. **IAC Recommendations**
   a. Approval of 2nd Year Report.
   b. Internship Info Emailed to Freshman AAS Class during Freshman Orientation (AECT 100): Rationale: Get students interested in internships as early as possible. Freshmen can use this information to help get construction jobs each summer before a formal internship.
   c. Assign GPA to Attachment 5 data: Performance Outcomes: Question of Confidentiality to be addressed.

2. **Survey Action Items:**
   a. “Below Expectations” experienced in some AAS CT courses. Lowest rankings from BT students.
      
      Action Items:
      - Create Survey Summary of CT Course Ratings: Comparison of 2007 Grads to AAS & BT students. Reference Attachment 3d:
      - Change timing of BT surveys to coincide with end of BT Internship. See Timetable on previous page.
      - **Follow-up Surveys:** (AAS & BT Students) Conducted week of 4/23/2012.

      **Preliminary Actions/Observations**
      a. Will review findings with IAC in October 2012.
      b. Typical comments for each course listed on Attachment 3d.
      c. Specific questions for Law & Contracting and Estimating & Planning included in surveys.
      - **Follow-up Surveys:** Reference Attachments 3e & 3f:

   b. Review 3rd Year Report with IAC @ October 2012 Meeting
   c. **(Note:** Comment of IAC Member during Campus Visit 4/20/2012: “Students may not like estimating and contract law, but they need it!”)
   d. Try to revise Survey in web-based format. Not successful with this year’s surveys.

3. **Enrollment Data:**
   
   **Action Items:**
   Work with Enrollment Services to:
   - Find ways to track AAS Freshmen and Graduations rates better.
   - Eliminate coding conflicts with grouping of AAS & BT Programs.