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# Fayetteville Technical Community College

## Detailed Assessment Report 2008-2009 Architectural Technology

### Mission/Purpose

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The Architectural Technology program is designed to provide individuals with the knowledge and skills that can lead to employment in the field of one of the associated professions.

### Student Learning Outcomes, with Any Associations and Related Measures, Achievement Targets, Findings, and Action Plans

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#### **O 1: Preparation of residential working drawings**

Students will be able to use information to analyze problems and make logical decisions in the preparation of residential working drawings. Residential working drawings will include the following sheets or drawings: foundation plan, floor plan(s), roof plan, wall section(s), and elevations. Standard of drawings are to be printed to scale, bound and presented in a professional format suitable for submission for construction.

#### **Document:**

[ARC-113 Rubric Assessment](#)

#### **Associations:**

##### **General Education or Core Curriculum:**

2 Use critical thinking to analyze problems and make logical decisions.

##### **Institutional Priorities:**

2 EDUCATIONAL PROGRAMS-To provide a comprehensive educational program committed to quality instruction and learning focused on student success.

##### **Strategic Plans:**

##### **Curriculum Programs- Gen Ed Competencies**

2.1.1 Promote active learning to serve students from diverse populations. (Ongoing)

NOTE: Click the link, Strategic Plan, for additional objectives and activities for Curriculum Programs 2.1.1.

#### **Related Measures:**

#### **M 1: Drawings in ARC 113**

**What:** Students will be required to produce a set of residential working drawings.

**How:** In the last quarter of the Spring, 2009 semester student drawings will be collected and reviewed by a panel of 3 faculty members. A rubric incorporating nationally accepted standards for residential working drawings will be applied to the student's drawings. The rubric will include criteria for cover page, floor plan, foundation plan, wall sections and details, elevations, etc. Additionally, a sampling of the student drawings will be displayed at Shuller Farris Architectural Firm, where the drawings are critiqued by members of the firm and the general public. All students enrolled in ARC 113 will be measured by the panel of 3 faculty members. All students enrolled in ARC 113 in the Spring, 2009 semester will be evaluated.

**Who:** Evaluations and critiques will be scored by the ARC faculty.

**Why:** Application of the rubric will yield data that will help faculty direct educational efforts to areas

of student weakness. Outside critique of the students' work will provide independent validation of the faculty's evaluation of the work.

**When:** All students enrolled in ARC 113 in the Spring, 2009 semester will be evaluated.

Source of Evidence: Written assignment(s), usually scored by a rubric

**Documents:**

[Drawing Show Survey- for public](#)  
[ARC-113 Rubric Assessment](#)

**Achievement Target:**

The assessment will be considered successful if 80% of the students achieve 70% or better on the evaluation.

**Findings (2008-2009) - Achievement Target: Met**

In the Spring, 2009 semester a complete set of residential working drawings were required to be turned in by the architectural technology students. Students were given the rubric along with instruction on what was required for the set of drawings. All drawings were to include a foundation plan, floor plan(s), wall section(s), roof plan and elevations. These drawings were collect reviewed and graded by three architectural technology faculty. The outcome of testing yielded an average score of 91.6 percent with the highest score being a 96.6 percent and the lowest score being an 82 percent. There were thirteen students that completed the set of working drawings with an overall rubric average of 2.69. This average is based on an average from 0-3. The achievement target of 80 percent of the students scoring 70 percent or better was reached by 100 percent of the students scoring better than a 70 percent. . It was disappointing that the students were not able to be evaluated by Shuller Ferris Architectural Firm. Due to the firm's budget restraints, the exhibit was canceled. However, collectively the architectural technology faculty agreed that overall the students were successful in understanding and completing a set of residential working drawing. suitable for construction

**O 2: Knowledge of CADD programs**

Students will demonstrate a working knowledge of CADD programs.

**Associations:**

**General Education or Core Curriculum:**

- 2 Use critical thinking to analyze problems and make logical decisions.
- 4 Demonstrate quantitative competencies.

**Institutional Priorities:**

- 2 EDUCATIONAL PROGRAMS-To provide a comprehensive educational program committed to quality instruction and learning focused on student success.

**Strategic Plans:**

**Curriculum Programs- Gen Ed Competencies**

- 2.1.1 Promote active learning to serve students from diverse populations. (Ongoing)  
NOTE: Click the link, Strategic Plan, for additional objectives and activities for Curriculum Programs 2.1.1.
- 2.9.2 Integrate technologies into existing courses. (Ongoing) NOTE: Click the link, Strategic Plan, for additional objectives and activities for Curriculum Programs 2.9.2.

**Related Measures:**

**M 2: 3-dimensional model in ARC 221**

**What:** Student proficiency in using CADD programs will be assessed.

**How:** In the last quarter of the Fall, 2008 semester a basic proficiency in CADD programs will be administered to the students. This exam will require the students to produce a 3-dimensional model from a standard set of working drawings. The ARC chair will collect the exam data upon completion of the test. All students enrolled in ARC 221 will be tested.

**Who:** The exam will be evaluated by the ARC faculty.

**Why:** A standardized test of the students' proficiency using CADD programs will produce data that can focus faculty efforts in CADD instruction.

**When:** Students will be tested in at the end of the Fall, 2008.

Source of Evidence: Standardized test of subject matter knowledge

**Achievement Target:**

Success will be determined by 80% of the students tested achieving 70% or better on the exam.

**Findings (2008-2009) - Achievement Target: Met**

In the last quarter of the Fall, 2008 semester a basic proficiency in CADD programs was administered to the students. This exam required the students to produce a 3-dimensional model from a standard set of working drawings. The achievement target for this course was met by administration of a set of working drawing for each student and they were required to produce a 3D house. The outcome of testing yielded an average score of 90.8 percent with the highest score being a 100 percent and the lowest score being an 76 percent. There were twelve students that completed the exam with an overall average of 90.8. The achievement target of 80 percent of the students scoring 70 percent or better was reached by 100 percent of the students scoring better than a 70 percent. The Architectural Technology faculty agreed that overall the students were successful in understanding 2D and 3D CAD by their ability to produce a 3D model in the time allowed.

**Related Action Plans:**

**3D Model buildings on FTCC campus.**

Students enjoyed and worked with enthusiasm because the assignment was a real world assignment instead of standard out of book drawing. It was difficult to assign buildings, since some building were larger than other. The instructor had to have students work in teams in order to complete the larger buildings. The instructor had to closely monitor the work being done to fairly evaluate each student. A rubric would have been helpful to determine the amount and/or quality of work on the model. For more information, see the *Action Plan Details* section of this report.

**O 3: Understanding of residential building codes**

Students will demonstrate an understanding of residential building codes.

**Associations:**

**General Education or Core Curriculum:**

2 Use critical thinking to analyze problems and make logical decisions.

**Institutional Priorities:**

2 EDUCATIONAL PROGRAMS-To provide a comprehensive educational program committed to quality instruction and learning focused on student success.

**Strategic Plans:**

**Curriculum Programs- Gen Ed Competencies**

2.1.1 Promote active learning to serve students from diverse populations. (Ongoing)

NOTE: Click the link, Strategic Plan, for additional objectives and activities for Curriculum Programs 2.1.1.

**Related Measures:**

**M 3: Test of residential building codes in ARC 131**

**What:** Student knowledge of North Carolina building codes will be measured.

**How:** In the last quarter of the Spring, 2009 semester students will be given a standardized exam covering the residential building codes for North Carolina. This exam will be created by the ARC faculty. All students enrolled in ARC 131 will be administered the exam.

**Who:** The chair of the ARC program will collect the data upon completion of the exam and a panel of ARC faculty will review the test results.

**Why:** Do to the breath and complexity of building codes, a standardized exam covering the codes will yield data concerning student strengths and weaknesses.

**When:** Students will be evaluated in the Spring, 2009 semester.

Source of Evidence: Standardized test of subject matter knowledge

**Achievement Target:**

Success will be determined by 80% of the students scoring 70% or better on the exam.

**Findings (2008-2009) - Achievement Target: Met**

The achievement target for this course was met by administration of a standard test to determine students' competency in both navigation and interpretation of the North Carolina Residential Building Codes 2006 Edition. The outcome of testing yielded an average score of 91 percent with the highest score being a 98 percent and the lowest score being an 80 percent. The achievement target of 80 percent of the students scoring 70 percent or better was reached by 100 percent of the students scoring better than a 70 percent.

## **Details for Action Plans Established This Cycle**

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### **3D Model buildings on FTCC campus.**

Students enjoyed and worked with enthusiasm because the assignment was a a real world assignment instead of standard out of book drawing. It was difficult to assign buildings, since some building were larger than other. The instructor had to have students work in teams in order to complete the larger buildings. The instructor had to closely monitor the work being done to fairly evaluate each student. A rubric would have been helpful to determine the amount and/or quality of work on the model

**Priority:** Low

**Target Date:** 07/2009  
Summer 2009

**Responsible Person/Group:** Phyllis Bell

**Additional Resources Needed:** none

**Budget Amount Requested:** \$0

## **Analysis Answers**

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### **What were the strengths of your assessment process?**

The strength of the ARC-113 assessment was that the rubric extensively covered all the categories for assessing the quality and strength of the students working drawings page by page. The rubric was established and given out to all the students at the beginning of the semester. Students could see how and what they were going to be graded on. The rubric described all the pages required and how together they would complete a set of working drawings. This set would be to a standard that would be acceptable for the construction process to be approved. The overall quality of the working drawings were higher than in years past, due in part to the rubric and this evaluation process.

**Document:**

[ARC-113 Rubric Assessment](#)

### **What were the weaknesses of your assessment process?**

The weakness of the assessment is there are too many variables to list in a rubric. Every aspect or detail of the drawings must be checked before approving a set of working drawings to be acceptable for construction. Because each student works on a house that is exclusive to them, it is difficult to foresee all problems that may occur in the design. For example: one house may have cathedral ceilings, another tray ceilings, or a two car garage, carport, wood porch, screened porch, brick porch, stucco sidings vs. brick veneer, wood framing, etc. and all these variables are difficult to anticipate in a rubric. So, even though we are able to set parameters that must be met others are

determined individually according to the design of that structure.

**Document:**

[ARC-113 Rubric Assessment](#)

**What was learned as a result of your assessment process?**

The evaluators for this rubric are trained experience individuals that are knowledgeable and familiar with residential working drawings. All three evaluators came within a few points of their assessment on each set of working drawings. Without this process, the instructor of the class would not have had such a complete validation that the class was achieving its objectives. This class is an accumulation of four classes: Introduction to Architectural Technology (learning the graphic systems), Architectural CAD (learning to drawing on the computer), Construction Materials and Methods (Building materials and their components), and Building Codes (local codes for construction). By producing a professional quality set of residential working drawings validates a student's knowledge of these classes and their ability to put that knowledge working environment. This assessment not only gave the department a gauge for these classes, but for all the classes involved in preparing the student to complete a profession set of working drawings.

**Document:**

[ARC-113 Rubric Assessment](#)

**How will what was learned impact the direction and emphasis of your academic or support unit?**

The direction and emphasis on our academic support unit will be to ensure that all faculty future and present is experienced and knowledgeable with graphics and residential construction. This assessment shows that without quality instruction in ARC-111, ARC-112, ARC-114 & 114A, and ARC-131 that the impact on the final result in ARC-113 would have shown that a student was not prepared to communicate through graphics a set of professional residential working drawings.

**Document:**

[ARC-113 Rubric Assessment](#)

**What was learned impacts the direction and emphasis of our academic or support unit by validating the system of instruction that is currently being administated . The emphasis will be to ensure that all faculty future and present is experienced and knowledgeable with graphics and residential construction. This assessment shows that our instruction in ARC-111, ARC-112, ARC-114 & 114A, and ARC-131 is of a high quality and standard that it impacts the final results in ARC-113. We are very pleased with the results and will continue to set the standard to offer the students the highest quality instruction possible.**

## Annual Reports

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### Program Review (Academic Units)

All academic program units must do an annual program review. The signed copy of the Review is housed in the Dean's office.

**Document:**

[Annual Program Review 2007-08](#)

### Advisory Comm. Minutes (Academic Units)

Academic units have associated Advisory Committees that provide community input on program direction and outcomes.

**Document:**

[Advisory Committee Minutes 11.20.08](#)