

School of Construction 2010-2011 Program Outcomes

Architectural Engineering Technology

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| ACT 348 Modeling & Animation Shane Germany (Adjunct) | |
| ACT 363/L Architectural Design II Kevin Kitchens (Adjunct) | |
| ACT 364/L Architectural Design III Bill Crosby | |
| ACT 400 Senior Project I Bill Crosby | |
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Program Summary ACT

The ACT program provides students with a broad-based education with an emphasis on critical thinking, technical problem-solving ability, and computer applications in addition to a background in architectural design. The ACT program is committed to producing graduates who possess the necessary skills, critical thinking, discipline and work ethics to enter the Architecture/Engineering/Construction (A/E/C) industry fully capable of performing entry-level tasks at the office and in the field.

Complex engineering systems keep modern buildings functioning. An architectural engineering technician must understand the electrical, lighting, structural, and ventilation systems that are essential to a building's operation. So a degree in this field requires an orientation to the general principles of engineering and a practical mastery of each of these systems. Graduates serve as architectural support for construction documentation (plans and specifications), construction project managers, facilities managers, systems engineers, and sales representatives for construction products; around 10% of our graduates continue their education to obtain architectural licenses.

The ACT initiative supports Southern Miss' emergence as the premier research university of the Gulf South through undergraduate and graduate research. As two current examples, ACT faculty (through Mississippi Development Authority (MDA) grant funding) are developing standard sets of home plans for use in the MDA HOME program initiative and are developing the standard specifications for the construction of these homes so they are energy efficient, ADA compliant and built to national standards. Students and faculty conducting both undergraduate and graduate research (in the related Architecture and Construction Visualization emphasis of the MS in Engineering Technology degree) are advancing the research vision of the University with state-of-the-art research in Building Information Modeling with grant funded research sponsored by the Army Corps of Engineers.

The Program Educational Objective of the ACT program is: "Graduates possess the necessary skills, critical thinking, discipline and work ethics to enter the A/E/C industry fully capable of performing entry-level tasks consistent with the expectations of employers." This fully supports the Mission of the Institution by cultivating intellectual development and creativity through the generation and application of knowledge.

Recent survey responses indicate our alumni in all program areas are more than satisfied with their degree in the areas of critical thinking, teamwork, communication skills, design process, ethics, modern techniques, professionalism, diversity, lifelong learning and preparation (TAC-ABET accreditation self-studies 2009). ACT is responsive to IHL priorities in a number of ways: educating a reentering workforce, operates in the black, has substantial industry support to supplement state resources, and has taken innovative approaches to curriculum delivery such as developing online.

Continuous Improvement Initiatives

This program underwent a 6th year TAC-ABET accreditation visit in fall 2010. From that visit, it was apparent that the program objectives in WeaveOnline did not provide adequate resolution from program level to course level. The organization of supporting materials and student samples of work was also extremely difficult to collect and organize in a meaningful manner. It was decided then to reorganize the program learning outcomes to exactly map to the TAC-ABET general and program specific criteria with direct linkages from each course in the program that supported a particular criteria. For the Architectural Engineering Technology program, these criteria are:

General Criteria for all programs

For baccalaureate degree programs, these student outcomes must include, but are not limited to, the following learned capabilities:

- a. an ability to select and apply the knowledge, techniques, skills, and modern tools of their disciplines to broadly-defined engineering technology activities,
- b. an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies,
- c. an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes,
- d. an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives,
- e. an ability to function effectively as a member or leader on a technical team,
- f. an ability to identify, analyze, and solve broadly-defined engineering technology problems,
- g. an ability to communicate effectively regarding broadly-defined engineering technology activities,
- h. an understanding of the need for and an ability to engage in self-directed continuing professional development,
- i. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity,
- j. a knowledge of the impact of engineering technology solutions in a societal and global context, and
- k. a commitment to quality, timeliness, and continuous improvement.

Criteria Specific to Architectural Engineering Technology

Associate degree programs (and our corresponding lower-division) must demonstrate that graduates are capable of:

- a. employing concepts of architectural theory and design in a design environment;
- b. utilizing modern instruments, methods and techniques to produce A/E documents and presentations;
- c. conducting standardized field and laboratory testing on construction materials;
- d. utilizing modern instruments and research techniques for site development and building layout;
- e. determining forces and stresses in elementary structural systems;
- f. estimating material quantities for technical projects;
- g. calculating basic loads and demands in mechanical and electrical systems;
- h. utilizing codes, contracts and specifications in design, construction and inspection activities; and
- i. employing productivity software to solve technical problems;

Baccalaureate degree programs must demonstrate that graduates, in addition to the competencies above, are capable of:

- a. creating, utilizing and presenting design, construction, and operations documents;
- b. performing economic analyses and cost estimates related to design, construction, and maintenance of building systems in the architectural engineering technical specialties;
- c. selecting appropriate materials and practices for building construction;
- d. applying principles of construction law and ethics in architectural practice;
- e. applying basic technical design concepts to the solution of architectural problems involving architectural history, theory and design; codes, contracts and specifications; electrical and mechanical systems, environmental control systems, plumbing and fire protection; site development; structures, material behavior, foundations; construction administration, planning and scheduling; and
- f. performing standard analysis and design in at least one recognized technical specialty within architectural engineering technology that is appropriate to the goals of the program.

Faculty then mapped each of their course objectives to the TAC-ABET criteria using a listing of the tools/methods for assessing each objective/criteria. This provided evidence of which courses in the program inventory were supporting any given TAC-ABET criteria and also provided a simple index system for staff to organize supporting materials by criteria for inspection. And, while TAC-ABET only requires summative evidence, this approach easily provides for formative inspection of the curriculum.

WeaveOnline Objectives reflect the exact TAC-ABET criteria with two measures for each criteria: one direct and one indirect. The direct measures are the aggregated assessments for all student work samples (projects, exams, quizzes, papers) as determined by the faculty in their mapping exercise. The indirect measures will be the graduate exit surveys and alumni surveys rewritten to also reflect the TAC-ABET criteria; these have not yet been implemented for this cycle.

Faculty then reported their findings for each section of their courses for fall 2010 and spring 2011. At the course level, it was decided to begin this process using targets of 80% of students would achieve 70 (out of 100) on the assessments. The findings were separated by program area the course might serve; for example, a course might have Architectural Engineering Technology (ACT), Construction Engineering Technology (BCT), Industrial Engineering Technology (IET), or other (OTHER) students. These findings were organized in a master spreadsheet organized so that the findings for each criteria for each program by semester and by delivery type (online or face-to-face) could be summed. This provides the total number of student samples for each criteria meeting the performance target versus total number of students being assessed. The findings for each criteria were then entered in WeaveOnline as annual summation values as well as being reported by semester and by type of site or delivery method. This system allows the program faculty to see the impact of their courses as a whole and individually on each criteria.

Beyond the reporting system for SACS and TAC-ABET, the faculty also now have a systematic approach to evaluate each of their course objectives using the defined performance target levels to look at weaknesses in each course.

Closing the Loop

At the program level, all performance targets were met. In the Architectural Engineering Technology (ACT) program, this is represented by 8,863 student work samples (out of 10,130) that were evaluated as better than or equal to 70 (out of 100). The percentage of samples better than or equal to 70 is 87% which exceeds our stated level of performance of 80%. These findings were derived from 15 of 23 courses in the curriculum; the findings from the remaining eight courses are still being pursued but were courses taught by an adjunct and an instructor that lost all data from hard-drive failure. (These two issues will lead to an improved reporting system).

Since the data is driven from the ground up (that is, from the faculty), the value of this assessment approach is that all faculty are involved rather than a select few as previously. The faculty are able to review their course level findings with respect to either the TAC-ABET criteria or the course objectives (which are generally more important to them). Although we have met all performance targets at the annual program level, there are findings (also reported in WeaveOnline) where the semester based report for either face-to-face or online might not have met the performance target. It is a simple matter to drill back down to the course level and determine which assessment tools the students were having difficulty with.

When the faculty submitted their findings, they were asked to provide an assessment of any finding that went below the 80% threshold and develop action plans as needed. In some cases, the issue was too few students in a section; these sections did not require an action plan but would be monitored. Sections with significant student numbers that had assessments below targets were added to the action plan section in WeaveOnline.

Achievement Summary / Analysis

What specifically did your assessments show regarding proven strengths or progress you made on outcomes/objectives?

The Architectural Engineering Technology (ACT), Construction Engineering Technology (BCT), Industrial Engineering Technology (IET) programs in the School of Construction have undergone a complete overhaul of the assessment plan for the 2010-2011 assessment cycle. The plan, described fully in the “Continuous Improvement Initiatives” and “Closing the Loop” sections of WeaveOnline, is closely tied to our external accreditation agency: Technology Accreditation Commission-Accreditation Board for Engineering and Technology (TAC-ABET). We believe this approach will provide the faculty with a much easier reporting mechanism yet more thorough and accurate picture of assessment at both the course level and the program level.

What specifically did your assessments show regarding any outcomes/objectives that will require continued attention?

At the program level, the performance targets for all objectives were met. The process we have developed allows micro- or macro-level views of the assessment outcomes. There are a few course level assessments that have been reported in WeaveOnline due to not meeting the performance target at the course-level.

| AEC 270 | Course Objectives | General Criteria | | | | | | | | | | | Assoc & BS program criteria | | | | | | | | | | BS program criteria | | | | | |
|---------------------|--|------------------|---|---|---|---|---|---|---|---|---|---|-----------------------------|---|---|---|---|---|---|---|---|---|---------------------|---|---|---|---|--|
| | | a | b | c | d | e | f | g | h | i | j | k | a | b | c | d | e | f | g | h | i | a | b | c | d | e | f | |
| Statics & Strengths | 1. Calculate the components of a force | | 1 | | 1 | | 1 | | 1 | | | | 1 | | | | 1 | | | | | 1 | | | | 1 | | |
| | 2. Calculate the moments of forces | | 1 | | 1 | | 1 | | 1 | | | | 1 | | | | 1 | | | | | 1 | | | | 1 | | |
| | 3. Work problems involving the method of joints and sections | | 1 | | 1 | | 1 | | 1 | | | | 1 | | | | 1 | | | | | 1 | | | | 1 | | |
| | 4. Work problems involving pulleys | | 1 | | 1 | | 1 | | 1 | | | | 1 | | | | 1 | | | | | 1 | | | | 1 | | |
| | 5. Trace load paths on structures | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asheka Rahman | 6. Calculate axial, shear and bearing stresses | | 2 | | 2 | | 2 | | 2 | | | | 2 | | | | 2 | | | | | 2 | | | | 2 | | |
| | 7. Calculate axial strain using Hooke's law | | 2 | | 2 | | 2 | | 2 | | | | 2 | | | | 2 | | | | | 2 | | | | 2 | | |
| | 8. Calculate thermal stresses | | 2 | | 2 | | 2 | | 2 | | | | 2 | | | | 2 | | | | | 2 | | | | 2 | | |
| | 9. Calculate centroids and moments of inertia | | 2 | | 2 | | 2 | | 2 | | | | 2 | | | | 2 | | | | | 2 | | | | 2 | | |
| | 10. Construct load, shear, and moment diagrams | | 2 | | 2 | | 2 | | 2 | | | | 2 | | | | 2 | | | | | 2 | | | | 2 | | |
| | 11. Calculate flexural stresses and beam deflections | | 2 | | 2 | | 2 | | 2 | | | | 2 | | | | 2 | | | | | 2 | | | | 2 | | |
| | 12. Analyze and design columns | | 2 | | 2 | | 2 | | 2 | | | | 2 | | | | 2 | | | | | 2 | | | | 2 | | |

AEC 270

ASSESSMENT Tools

| |
|---------------|
| 1. Midterm |
| 2. Final Exam |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| FA10 | F-F | | |
| 1 | 6 | 8 | 75% |
| 2 | 6 | 8 | 75% |
| | AVG | | 75% |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| FA10 | ONL | | |
| 1 | 3 | 7 | 43% |
| 2 | 3 | 7 | 43% |
| | AVG | | 43% |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| SP11 | F-F | | |
| 1 | | | |
| 2 | | | |
| | AVG | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| SP11 | ONL | | |
| 1 | | | |
| 2 | | | |
| | AVG | | |

| AEC 315 | Course Objectives | General Criteria | | | | | | | | | | | Assoc & BS program criteria | | | | | | | | | BS program criteria | | | | | | |
|--------------------|---|------------------|-----|-----|---|---|-----|---|---|---|---|---|-----------------------------|-----|-----|---|---|-----|-----|-----|---|---------------------|-----|-----|-----|-----|-----|-----|
| | | a | b | c | d | e | f | g | h | i | j | k | a | b | c | d | e | f | g | h | i | a | b | c | d | e | f | |
| Mechanical Systems | 1. Acquire the ability to understand HVAC definitions, symbols and abbreviations, select and sizes a HVAC system | 1,2 | 1,2 | 1,2 | 2 | | 1,2 | 2 | | | | 2 | 1,2 | 1,2 | | | | 1,2 | | 1,2 | 2 | 1,2 | 1,2 | 2 | | 1,2 | 1,2 | |
| | 2. Explain the factors affecting human environmental comfort | 2 | 2 | 2 | 2 | | 2 | 2 | 2 | 2 | 2 | | 2 | 2 | | | | | | | | 2 | | | 2 | 2 | 1,2 | |
| Fairuz Shiratuddin | 3. Able to calculate heat loss and heat gain of a structure | 1,2 | 1,2 | 1,2 | 2 | | 1,2 | 2 | | | | 2 | 1 | 1 | | | | 1,2 | 1,2 | | | 1 | 1,2 | | | 1 | 1,2 | |
| ACT, BCT | 4. Acquire the ability to understand the design of a residential and commercial duct system | 1,2 | 1,2 | 1,2 | 2 | 2 | 1,2 | 2 | | 2 | | 2 | 1,2 | 1,2 | | | | 1,2 | | 1,2 | 2 | 1,2 | 1,2 | 2 | 2 | 1,2 | 1,2 | |
| | 5. Explain plumbing definitions, symbols, and abbreviations | 2 | 2 | 2 | 2 | | 2 | 2 | | | | 2 | | 2 | | | | | | | 2 | 2 | | | | 2 | 1,2 | |
| | 6. Acquire the ability to understand the design of plumbing and riser diagrams, and the uses of various plumbing fixtures and connections | 1,2 | 1,2 | 1,2 | 2 | | 1,2 | 2 | | | | | 2 | 1,2 | 1,2 | | | | | 1,2 | | 1,2 | 2 | 1,2 | 1,2 | 2 | 1,2 | 1,2 |
| | 7. Explain sources of water supply and points of wastewater disposal | 2 | 2 | 2 | 2 | | 2 | 2 | | | | 2 | | 2 | | | | | | | | 2 | | | 2 | 2 | 2 | 2 |

AEC 315

ASSESSMENT Tools

| |
|-----------|
| 1. Test |
| 2. Papers |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| FA10 | F-F | | |
| 1 | | | |
| 2 | | | |
| | | AVG | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| FA10 | ONL | | |
| 1 | 4 | 7 | 57% |
| 2 | 4 | 7 | 57% |
| | | AVG | 57% |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| SP11 | F-F | | |
| 1 | | | |
| 2 | | | |
| | | AVG | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| SP11 | ONL | | |
| 1 | 5 | 5 | 100% |
| 2 | 4 | 5 | 80% |
| | | AVG | 90% |

| AEC 316 | Course Objectives | General Criteria | | | | | | | | | | | Assoc & BS program criteria | | | | | | | | | BS program criteria | | | | | | |
|--------------------|---|------------------|-----|-----|---|---|-----|---|---|---|---|---|-----------------------------|-----|---|---|---|---|-----|-----|---|---------------------|-----|---|-----|-----|-----|-----|
| | | a | b | c | d | e | f | g | h | i | j | k | a | b | c | d | e | f | g | h | i | a | b | c | d | e | f | |
| Electrical Systems | 1. Able to perform Ohm's law and electrical power calculations | 1,2 | 1,2 | 1,2 | 2 | | 1,2 | 2 | | | 2 | 2 | 1,2 | | | | | | 1,2 | | | | 1,2 | | | 1,2 | 1,2 | |
| | 2. Able to choose wire sizes and types, and define raceway types and uses | 1,2 | 1,2 | 1,2 | 2 | | 1,2 | 2 | | | 2 | 2 | 1,2 | 2 | | | | | 1 | 1,2 | 2 | 2 | 1,2 | 2 | 2 | 1,2 | 1,2 | |
| Fairuz Shiratuddin | 3. Acquire the ability to explain grounding and fault protection systems | 2 | 2 | 2 | | | 2 | 2 | | | 2 | 2 | 1,2 | | | | | | 1,2 | 2 | 2 | 1,2 | | | | 1 | 1,2 | |
| ACT, BCT, IET | 4. Acquire the ability to understand the design of residential/commercial electrical and lighting construction wiring diagram | 1,2 | 1,2 | 1,2 | 2 | 2 | 1,2 | 2 | 2 | 2 | 2 | 2 | 1,2 | 1,2 | | | | | 1 | 1,2 | 2 | 2 | 1,2 | 2 | 1,2 | 2 | 1,2 | 1,2 |
| | 5. Acquire the ability to understand how to construct light fixture schedule | 2 | 2 | 2 | 2 | | 2 | 2 | | | 2 | 2 | 1,2 | 1,2 | | | | | 1 | 1,2 | 2 | 2 | 1,2 | 2 | 1,2 | 2 | 1,2 | 1,2 |
| | 6. 5. Acquire the ability to understand how to construct electrical panel schedule | 2 | 2 | 2 | 2 | | 2 | 2 | | | 2 | 2 | 1,2 | 1,2 | | | | | 1 | 1,2 | 2 | 2 | 1,2 | 2 | 1,2 | 2 | 1,2 | 1,2 |
| | 7. Able explain the characteristics of light | 2 | 2 | 2 | | | 2 | 2 | | | 2 | 2 | 2 | | | | | | | | | | | | | 2 | | 2 |

AEC 316

ASSESSMENT Tools

| |
|-----------|
| 1. Test |
| 2. Papers |

| | | | |
|------------|----------------|-----------|-------|
| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|

FA10 F-F

| | | | |
|-----|--|--|--|
| 1 | | | |
| 2 | | | |
| AVG | | | |

| | | | |
|------------|----------------|-----------|-------|
| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|

FA10 ONL

| | | | |
|-----|--|--|--|
| 1 | | | |
| 2 | | | |
| AVG | | | |

| | | | |
|------------|----------------|-----------|-------|
| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|

SP11 F-F

| | | | |
|-----|--|--|--|
| 1 | | | |
| 2 | | | |
| AVG | | | |

| | | | |
|------------|----------------|-----------|-------|
| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|

SP11 ONL

| | | | |
|-----|---|---|------|
| 1 | 6 | 6 | 100% |
| 2 | 6 | 6 | 100% |
| AVG | | | 100% |

| AEC 444 | Course Objectives | General Criteria | | | | | | | | | | | Assoc & BS program criteria | | | | | | | | | | BS program criteria | | | | | |
|-------------------|--|------------------|-----|---|-----|---|-----|---|-----|---|---|---|-----------------------------|---|---|---|-----|---|---|---|---|-----|---------------------|---|---|-----|-----|--|
| | | a | b | c | d | e | f | g | h | i | j | k | a | b | c | d | e | f | g | h | i | a | b | c | d | e | f | |
| Structural Design | 1. Calculate beam loads, shear, and moments | | 1,3 | | 1,3 | | 1,3 | | 1,3 | | | | 1,3 | | | | 1,3 | | | | | 1,3 | | | | 1,3 | 1,3 | |
| | 2. Design concrete beams, slab, and columns for bending, shear, and deflection | | 1,4 | | 1,4 | | 1,4 | | 1,4 | | | | 1,4 | | | | 1,4 | | | | | 1,4 | | | | 1,4 | 1,4 | |
| Asheka Rahman | 3. Design steel connections, columns, beams, and decking | | 2,5 | | 2,5 | | 2,5 | | 2,5 | | | | 2,5 | | | | 2,5 | | | | | 2,5 | | | | 2,5 | 2,5 | |
| ACT & BCT | 4. Design wood connections, columns, beams, and decking | | 2,6 | | 2,6 | | 2,6 | | 2,6 | | | | 2,6 | | | | 2,6 | | | | | 2,6 | | | | 2,6 | 2,6 | |

AEC 444

ASSESSMENT Tools

| |
|---|
| 1. Midterm |
| 2. Final Exam |
| 3. Assignment group 1 -- (Assignment 1, Assignment 2, Assignment 3) |
| 4. Assignment group 2 -- (Assignment 4, Assignment 5, Assignment 6) |
| 5. Assignment group 3 -- (Assignment 7, Assignment 8, Assignment 9) |
| 6. Assignment group 4 -- (Assignment 10) |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| FA10 | F-F | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| | | AVG | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| FA10 | ONL | | |
| 1 | 0 | 1 | 0% |
| 2 | 1 | 1 | 100% |
| 3 | 1 | 1 | 100% |
| 4 | 1 | 1 | 100% |
| 5 | 1 | 1 | 100% |
| 6 | 1 | 1 | 100% |
| | | AVG | 83% |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| SP11 | F-F | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| | | AVG | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| SP11 | ONL | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| | | AVG | |

| AEC 454 | Course Objectives | General Criteria | | | | | | | | | | | Assoc & BS program criteria | | | | | | | | BS program criteria | | | | | | |
|--------------|--|------------------|-----|---|---|---|---|-----|---|---|---|-----|-----------------------------|---|---|---|-----|---|---|---|---------------------|-----|-----|---|-------|---|-----|
| | | a | b | c | d | e | f | g | h | i | j | k | a | b | c | d | e | f | g | h | i | a | b | c | d | e | f |
| Estimating I | 1. Quantify and document three-dimensional materials represented by two-dimensional construction design drawings (Perform and display quantity surveying). | 9 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2. Learn to algebraically resolve units of measure. | 2-8 | 2-8 | | | | | 2-8 | | | | 2-8 | | | | | 2-8 | | | | | 2-8 | 2-8 | | | | 2-8 |
| Jeff Hannon | 3. Utilize the CSI Master Format to categorize and organize construction information. | 9 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ACT & BCT | 4. Visualize three dimensional structures and volumes from construction bidding documents (Construction drawing interpretation). | 2-8 | 2-8 | | | | | 2-8 | | | | 2-8 | | | | | 2-8 | | | | | 2-8 | 2-8 | | | | 2-8 |
| | 5. Utilize the spreadsheet application and commercial software applications to automate quantity take-off. | 2-8,9 | | | | | | | | | | | | | | | | | | | | | | | 2-8,9 | | |
| | 6. Interpret and conform to written technical specifications | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 7. Be productive in an environment of critical deadlines. | | | | | | | | | | | | | | | | | | | | | | | | | | |

AEC 454

ASSESSMENT Tools

| |
|---|
| 1. Quiz-1: |
| 2. Exercise-1>Create Spreadsheet Template |
| 3. Exercise-2>QTO Excav and PCC |
| 4. Exerrcise-3>QTO PCC and Reinf Steel |
| 5. Exercise-4>QTO RCB |
| 6. Exercise-5>QTO PCC Headwall and Wings |
| 7. Exercise-6>QTO Masonry |
| 8. Exercise-7>QTO Wood Framing |
| 9. Exam |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

FA10 F-F

| | | | |
|-----|--|--|--|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| AVG | | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

FA10 ONL

| | | | |
|-----|--|--|--|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| AVG | | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

SP11 F-F MINI

| | | | |
|-----|---|---|------|
| 1 | 2 | 2 | 100% |
| 2 | 2 | 2 | 100% |
| 3 | 2 | 2 | 100% |
| 4 | 2 | 2 | 100% |
| 5 | 2 | 2 | 100% |
| 6 | 2 | 2 | 100% |
| 7 | 2 | 2 | 100% |
| 8 | 2 | 2 | 100% |
| 9 | 2 | 2 | 100% |
| AVG | | | 100% |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

SP11 ONL MINI

| | | | |
|-----|---|---|------|
| 1 | 3 | 3 | 100% |
| 2 | 3 | 3 | 100% |
| 3 | 3 | 3 | 100% |
| 4 | 3 | 3 | 100% |
| 5 | 3 | 3 | 100% |
| 6 | 3 | 3 | 100% |
| 7 | 3 | 3 | 100% |
| 8 | 3 | 3 | 100% |
| 9 | 3 | 3 | 100% |
| AVG | | | 100% |

| AEC 496 | Course Objectives | General Criteria | | | | | | | | | | | Assoc & BS program criteria | | | | | | | | BS program criteria | | | | | | |
|-----------------------|--|------------------|---|---|---|---------|---|-------|---|-------|---|---------|-----------------------------|-------|---|---|---|---|-------|-------|---------------------|---|---|-------|-----|-----|-----|
| | | a | b | c | d | e | f | g | h | i | j | k | a | b | c | d | e | f | g | h | i | a | b | c | d | e | f |
| Industrial Internship | 1. Recognize the functional areas (structure) of the host organization | 3,6,7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2. Identify functional roles (tasks, responsibilities) in industry and the intern's functional role within the host organization | 3,6,7 | | | | 3,6,7 | | | | | | | | | | | | | | | | | | | | | |
| Doris Kemp | 3. Identify to which of the life cycle process(es) of an asset/facility the internship duties relate | 3,6,7,8 | | | | 3,6,7,8 | | | | | | | | | | | | | | | | | | | | | |
| ACT & BCT | 4. Describe the work flow processes and documentation associated with internship duties | 3,6,7 | | | | | | | | | | | 3,6,7 | 3,6,7 | | | | | 3,6,7 | 3,6,7 | 3,6,7 | | | | 3,6 | 3,6 | |
| | 5. Gain 400 contact hours of practical experience at a host company | | | | | | | | | | | 1,2,4,5 | | | | | | | | | | | | | | | |
| | 6. Satisfactorily perform entry-level duties associated with the intern's role in the host company | 3,6-10 | | | | | | | | | | | | | | | | | | | 3,6,7 | | | 3,6,7 | | 3,6 | 3,6 |
| | 7. Identify ethical situations and dilemmas observed during the internship | | | | | | | 3,6 | | 3,6,7 | | | | | | | | | | | | | | | | | |
| | 8. Demonstrate verbal and written communication proficiency to advance in industry. | | | | | | | 3,6,7 | | | | | | | | | | | | | | | | | | | |
| | 9. Submit 100% of the deliverables required by the established deadlines | | | | | | | | | | | | 1-10 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |

AEC 496

ASSESSMENT Tools

| |
|---|
| 1. Internship agreement |
| 2. Schedule supervisor/instructor conversation |
| 3. Midterm report |
| 4. Implement conversation between instructor/supervisor |
| 5. Schedule final oral presentation |
| 6. Final report |
| 7. Final oral presentation |
| 8. Student survey |
| 9. Industry representative survey |
| 10. Student intern evaluation |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

FA10 F-F

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| 8 | | | |
| 9 | | | |
| 10 | | | |
| AVG | | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
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FA10 ONL

| | | | |
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| 10 | | | |
| AVG | | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
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SP11 ONL

| | | | |
|-----|---|---|------|
| 1 | 2 | 2 | 100% |
| 2 | 2 | 2 | 100% |
| 3 | 2 | 2 | 100% |
| 4 | 2 | 2 | 100% |
| 5 | 2 | 2 | 100% |
| 6 | 2 | 2 | 100% |
| 7 | 2 | 2 | 100% |
| 8 | 2 | 2 | 100% |
| 9 | 2 | 2 | 100% |
| 10 | 2 | 2 | 100% |
| AVG | | | 100% |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

SU11 ONL

| | | | |
|-----|---|---|------|
| 1 | 4 | 4 | 100% |
| 2 | 4 | 4 | 100% |
| 3 | 4 | 4 | 100% |
| 4 | 4 | 4 | 100% |
| 5 | 4 | 4 | 100% |
| 6 | 4 | 4 | 100% |
| 7 | 4 | 4 | 100% |
| 8 | 4 | 4 | 100% |
| 9 | 4 | 4 | 100% |
| 10 | 4 | 4 | 100% |
| AVG | | | 100% |

| ACT 322 | Course Objectives | General Criteria | | | | | | | | | | | Assoc & BS program criteria | | | | | | | | | | BS program criteria | | | | | |
|-----------------------|---|------------------|---|---|---|---|-----|---|-----|-----|-----|-----|-----------------------------|-----|---|---|---|---|---|-----|-----|---|---------------------|-----|-----|---|---|--|
| | | a | b | c | d | e | f | g | h | i | j | k | a | b | c | d | e | f | g | h | i | a | b | c | d | e | f | |
| Architectural History | 1. Recognize and distinguish differences between well-known architecture and eras | | | | | | 4,5 | | | 4,5 | | 4,5 | | | | | | | | | | | | | 4,5 | | | |
| | 2. Define common terms associated with architecture | | | | | | 4,5 | | | 4,5 | | 4,5 | | | | | | | | | | | | | 4,5 | | | |
| Jessica Sharp | 3. Design, develop, and prepare a detailed paper about an individual whose work made significant contributions to architecture | 2 | | | | | | | 2 | 2 | | 2 | | | | | | | | | 2 | | | | 2 | 2 | | |
| ACT (ID) | 4. Use USM's Library as a resource for locating articles, reference manuals, and books containing details about a significant figure in the field of architecture | 2,3 | | | | | | | 2,3 | 2,3 | 3 | 2,3 | | 3 | | | | | | | 2,3 | | | | 2,3 | 2 | | |
| | 5. Analyze how developments in building materials, social, religious and economic factors have influenced architecture | | | | | | 4,5 | | | 4,5 | | 4,5 | | | | | | | | | | | | 4,5 | | | | |
| | 6. Demonstrate presentation skills by designing, developing and delivering Power Point presentations | 1,3 | | | | | | | 1,3 | 1,3 | 1,3 | 1,3 | | 1,3 | | | | | | 1,3 | | | | 1,3 | | | | |

ACT 322

ASSESSMENT Tools

| |
|---|
| 1. Presentation #1 -- A presentation about a structure, feature, or architectural detail of interest |
| 2. Research Paper -- A 5,000 word paper about an individual whose work made significant contributions to architecture |
| 3. Final Presentation -- A presentation about the individual selected for the Research Paper |
| 4. Exam One -- Cover modules: Ancient, Egypt, Greece, Rome, Early Christian, Byzantine, Romanesque, and Islamic |
| 5. Exam Two -- Covers modules: Gothic, Renaissance, Baroque, 18th Century, 19th Century, and Modern |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| FA10 | F-F | | |
| 1 | 13 | 13 | 100% |
| 2 | 12 | 13 | 92% |
| 3 | 12 | 13 | 92% |
| 4 | 12 | 13 | 92% |
| 5 | 11 | 13 | 85% |
| | AVG | | 92% |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| FA10 | ONL | | |
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| 3 | | | |
| 4 | | | |
| 5 | | | |
| | AVG | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| SP11 | F-F | | |
| 1 | | | |
| 2 | | | |
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| 4 | | | |
| 5 | | | |
| | AVG | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| SP11 | ONL | | |
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| 3 | | | |
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| 5 | | | |
| | AVG | | |

| ACT 338/L | Course Objectives | General Criteria | | | | | | | | | | | Assoc & BS program criteria | | | | | | | | | | BS program criteria | | | | | |
|---|--|------------------|---|---|-------|---|-----|---|---|---|-----|---|-----------------------------|---|---|---|---|-----|-----|-----|-----|-----|---------------------|-------|---|---|---|--|
| | | a | b | c | d | e | f | g | h | i | j | k | a | b | c | d | e | f | g | h | i | a | b | c | d | e | f | |
| Architectural Working Drawings III | 1. Develop non-structural framing and finish envelop shaping architectural space | 5,6 | | | 5 | | | | | | 5,6 | | 5,6 | | | | | | | 5,6 | 5,6 | | 5,6 | | | | | |
| Architectural Working Drawings III Laboratory | 2. Discern the suitability of an already developed detail from a previous project, a reference textbook, or industry | 2 | | | 2 | | 2 | | | | 2 | | 2 | | | | | | | 2 | 2 | | 2 | | 2 | | | |
| Jessica Sharp | 3. Show marked improvement on designating material components of architectural details | 1-8 | | | 2-5,8 | | 1-8 | | 8 | | 1-8 | | 1-8 | | | | | 7,8 | 1-8 | 1-8 | | 1-8 | | 2-5,8 | | | | |
| | 4. Produce clear, concise, details based on National CAD Standards drafting conventions | 7 | | | | | 7 | | | | 7 | | 7 | | | | | 7 | 7 | 7 | | 7 | | | | | | |
| | 5. To integrate working drawings with specifications through effective notation and referencing. | 7 | | | | | 7 | | | | 7 | | 7 | | | | | 7 | 7 | 7 | | 7 | | | | | | |
| | 6. Detail proper and effective fire resistance details | 6 | | | | | 6 | | | | 6 | | 6 | | | | | | | 6 | 6 | | | 6 | | | | |
| | 7. Detail custom basic millwork | 7 | | | | | 7 | | | | 7 | | 7 | | | | | 7 | 7 | 7 | | 7 | | | | | | |
| | 8. Design, develop, and prepare a detailed paper about a topic in the field of sustainability or 'green building' | | | | | | | | 9 | 9 | | 9 | | | | | | | | | 9 | | | 9 | 9 | | | |

ACT 338/L

ASSESSMENT Tools

| |
|---|
| 1. Assignment #1: Title Blocks -- Creating an 11"x17" and a 24"x36" size title block |
| 2. Assignment #2: Foundation Details -- Analyzing and creating multiple foundation details based on already developed details from a previous project |
| 3. Assignment #3: Floor Slab Details -- Creating multiple floor slab system details |
| 4. Assignment #4: CMU Wall Details -- Creating multiple CMU Wall details |
| 5. Assignment #5: Parapet and Flashing Details -- Creating multiple parapet wall and flashing details |
| 6. Assignment #6: Interior Partitions and Firestop Details -- Creating an interior partition and multiple firestop details |
| 7. Assignment #7: Millwork Details -- Creating multiple millwork details |
| 8. Final Project -- Students will create multiple details based on an existing project |
| 9. Sustainability Research Paper -- Design, develop, and prepare a detailed paper about a topic in the field of sustainability or 'green building' |

| Assessment | #students >= C | #students | Ratio |
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FA10 F-F

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| AVG | | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
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FA10 ONL

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| AVG | | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

SP11 F-F

| | | | |
|-----|-----|----|------|
| 1 | 14 | 16 | 88% |
| 2 | 15 | 16 | 94% |
| 3 | 15 | 16 | 94% |
| 4 | 15 | 16 | 94% |
| 5 | 14 | 16 | 88% |
| 6 | 16 | 16 | 100% |
| 7 | 15 | 16 | 94% |
| 8 | 13 | 16 | 81% |
| 9 | 15 | 16 | 94% |
| AVG | 92% | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

SP11 ONL

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| 8 | | | |
| 9 | | | |
| AVG | | | |

| ACT 465/L | Course Objectives | General Criteria | | | | | | | | | | | Assoc & BS program criteria | | | | | | | | | BS program criteria | | | | | |
|------------------------------------|---|------------------|---|---|---|---|-------|-------|---|-------|-----|---------------|-----------------------------|-------|---|---------|---|---|-------|---|-------|---------------------|-------|---|-------------|---|---|
| | | a | b | c | d | e | f | g | h | i | j | k | a | b | c | d | e | f | g | h | i | a | b | c | d | e | f |
| Architectural Design IV | 1. Conduct preliminary research and programming work required for successful design development. | 1,2,3,4,5,6 | | | | | 1,2,3 | 1,2,3 | | 1,2,3 | 1,2 | 1,2,3,4,5,6,7 | | | | 1,2,3,6 | | | | | | | | | 1,2,3,4,5,6 | | |
| Architectural Design IV Laboratory | 2. Select materials and structural systems appropriately in response to site and environmental conditions, local codes, and program requirements. | 1,2,3 | | | | | 1,2,3 | 1,2,3 | | 1,2,3 | 1,2 | 1,2,3,4,5,6,7 | | | | | | | | | | | 1,2,3 | | 1,2,3,4,5,6 | | |
| Miranda Grieder | 3. Produce designs that demonstrate an awareness of professional and ethical responsibilities in terms of budgetary restraints and the application of building codes. (Also further apply sense of responsibility in 5 hours of community service.) | 1,2,3 | | | | | 1,2,3 | 1,2,3 | 7 | 1,2,3 | 1,2 | 1,2,3,4,5,6,7 | | | | | | | 1,2,3 | | | | | | 1,2,3,4,5,6 | | |
| | 4. Utilize design elements and principles effectively in shaping community-supportive spaces responsive to existing cultural systems and human needs. | 1,2,3,4,6 | | | | | 1,2,3 | 1,2,3 | | 1,2,3 | 1,2 | 1,2,3,4,5,6,7 | 1,2,3,4,6 | | | | | | | | | | | | 1,2,3,4,5,6 | | |
| | 5. Examine the benefits of sustainable design strategies. | 1,2,3 | | | | | 1,2,3 | 1,2,3 | | 1,2,3 | 1,2 | 1,2,3,4,5,6,7 | | | | | | | | | | | | | 1,2,3,4,5,6 | | |
| | 6. Demonstrate proficiency in the communication of design ideas through various presentation media. | 1,2,3 | | | | | 1,2,3 | 1,2,3 | | 1,2,3 | 1,2 | 1,2,3,4,5,6,7 | | 1,2,3 | | | | | | | 1,2,3 | 1,2,3,5 | | | 1,2,3,4,5,6 | | |

ACT 465/L

ASSESSMENT Tools

| |
|---|
| 1. Project 1 -- Elementary School |
| 2. Project 2 -- New Urban Model for Senior Living |
| 3. Project 3 -- New School of Construction |
| 4. HW#2 -- Senior Living Quiz |
| 5. HW#3 -- Site Plan / Study |
| 6. HW#4 -- The Windham House Fieldtrip Survey |
| 7. Community Service |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| FA10 | F-F | | |
| 1 | 4 | 5 | 80% |
| 2 | 4 | 5 | 80% |
| 3 | 4 | 5 | 80% |
| 4 | 4 | 5 | 80% |
| 5 | 5 | 5 | 100% |
| 6 | 3 | 5 | 60% |
| 7 | 5 | 5 | 100% |
| AVG | | | 83% |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| FA10 | ONL | | |
| 1 | | | |
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| 6 | | | |
| 7 | | | |
| AVG | | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| SP11 | F-F | | |
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| 7 | | | |
| AVG | | | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
| SP11 | ONL | | |
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| 5 | | | |
| 6 | | | |
| 7 | | | |
| AVG | | | |

| BCT 205/L | Course Objectives | General Criteria | | | | | | | | | | | Assoc & BS program criteria | | | | | | | | | BS program criteria | | | | | | |
|---|---|------------------|-----|-----|---|-----|-----|---|---|---|-----|-----|-----------------------------|-----|-----|---|---|---|---|---|---|---------------------|-----|---|---|---|-----|-----|
| | | a | b | c | d | e | f | g | h | i | j | k | a | b | c | d | e | f | g | h | i | a | b | c | d | e | f | |
| Surveying Lecture Online Asheka Rahman | Measure with steel tape, correct for errors, and adjust for temperature and tension | 1,2 | 1,2 | 1,2 | | | 1,2 | | | | | | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 |
| | Understand the concept of differential leveling | 1,2 | 1,2 | 1,2 | | | 1,2 | | | | | | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 |
| | Use level and perform calculations in order to adjust for errors and close the loop | 1,2 | 1,2 | 1,2 | | | 1,2 | | | | | | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 |
| | Use transit and understand the concept of angles and directions | 1,2 | 1,2 | 1,2 | | | 1,2 | | | | | | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 |
| | Calculate coordinates based on bearings and distances and vice versa, and also adjust for error closure | 1,2 | 1,2 | 1,2 | | | 1,2 | | | | | | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 |
| | Perform construction layout (setting up points of known coordinates /and As-built) | 1,2 | 1,2 | 1,2 | | | 1,2 | | | | | | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 |
| | Application of GPS and GIS technology used in Surveying and Construction Layout | 1,2 | 1,2 | 1,2 | | | 1,2 | | | | | | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 |
| Surveying Laboratory Online Asheka Rahman | Measuring Distances using Pacing | 4,2 | 4,2 | 4,2 | | 4,2 | | | | | 4,2 | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 | |
| | Survey Field Note Standards | 4,2 | 4,2 | 4,2 | | 4,2 | | | | | 4,2 | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 | |
| | Measuring building height using similar triangles | 5,2 | 5,2 | 5,2 | | 5,2 | | | | | 5,2 | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 | |
| | Determine the Finish Floor Elevation of a building using differential leveling | 6,2 | 6,2 | 6,2 | | 6,2 | | | | | 6,2 | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 | |
| | Traverse survey | 7,2 | 7,2 | 7,2 | | 7,2 | | | | | 7,2 | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 | |
| | Excel Spreadsheet of Compass Rule | 8,2 | 8,2 | 8,2 | | 8,2 | | | | | 8,2 | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 | |
| | Building Layout | 9,2 | 9,2 | 9,2 | | 9,2 | | | | | 9,2 | 1,2 | | 1,2 | | | | | | | | 1,2 | | | | | 1,2 | |

BCT 205/L

ASSESSMENT Tools

| |
|-----------------|
| 1. Midterm |
| 2. Final Exam |
| 3. Assignment 1 |
| 4. Assignment 2 |
| 5. Assignment 3 |
| 6. Assignment 4 |
| 7. Assignment 5 |
| 8. Assignment 6 |
| 9. Assignment 7 |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

| FA10 | F-F | | |
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| 1 | | | |
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| 9 | | | |
| | | AVG | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

| FA10 | ONL | | |
|------|-----|-----|------|
| 1 | 3 | 3 | 100% |
| 2 | 3 | 3 | 100% |
| 3 | 3 | 3 | 100% |
| 4 | 3 | 3 | 100% |
| 5 | 3 | 3 | 100% |
| 6 | 3 | 3 | 100% |
| 7 | 3 | 3 | 100% |
| 8 | 3 | 3 | 100% |
| 9 | -- | -- | -- |
| | | AVG | 100% |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

| SP11 | F-F | | |
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| 7 | | | |
| 8 | | | |
| 9 | | | |
| | | AVG | |

| Assessment | #students >= C | #students | Ratio |
|------------|----------------|-----------|-------|
|------------|----------------|-----------|-------|

| SP11 | ONL | | |
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| | | AVG | |

Findings: General Criteria (a-k)

| ACT criteria | | >=70 | ENR | % | sem | >=70 | ENR | % | type | >=70 | ENR | % | ACT concatenated findings |
|--------------|----------|------|-----|-----|------|------|-----|-----|------|------|-----|------|--|
| GC | a | 732 | 816 | 90% | FA10 | 146 | 168 | 87% | F-F | 117 | 133 | 88% | 90% (732 of 816) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'a'. |
| | | | | | | | | | ONL | 29 | 35 | 83% | FA10: F-F = 88% (117 of 133); ONL = 83% (29 of 35); |
| | | | | | SP11 | 586 | 648 | 90% | F-F | 519 | 577 | 90% | SP11: F-F = 90% (519 of 577); ONL = 94% (67 of 71); |
| | | | | | | | | | ONL | 67 | 71 | 94% | |
| GC | b | 108 | 128 | 84% | FA10 | 52 | 71 | 73% | F-F | 12 | 16 | 75% | 84% (108 of 128) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'b'. |
| | | | | | | | | | ONL | 40 | 55 | 73% | FA10: F-F = 75% (12 of 16); ONL = 73% (40 of 55); |
| | | | | | SP11 | 56 | 57 | 98% | F-F | 14 | 14 | 100% | SP11: F-F = 100% (14 of 14); ONL = 98% (42 of 43); |
| | | | | | | | | | ONL | 42 | 43 | 98% | |
| GC | c | 96 | 113 | 85% | FA10 | 49 | 59 | 83% | F-F | 20 | 24 | 83% | 85% (96 of 113) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'c'. |
| | | | | | | | | | ONL | 29 | 35 | 83% | FA10: F-F = 83% (20 of 24); ONL = 83% (29 of 35); |
| | | | | | SP11 | 47 | 54 | 87% | F-F | 21 | 26 | 81% | SP11: F-F = 81% (21 of 26); ONL = 93% (26 of 28); |
| | | | | | | | | | ONL | 26 | 28 | 93% | |
| GC | d | 119 | 146 | 82% | FA10 | 31 | 50 | 62% | F-F | 12 | 16 | 75% | 82% (119 of 146) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'd'. |
| | | | | | | | | | ONL | 19 | 34 | 56% | FA10: F-F = 75% (12 of 16); ONL = 56% (19 of 34); |
| | | | | | SP11 | 88 | 96 | 92% | F-F | 73 | 80 | 91% | SP11: F-F = 91% (73 of 80); ONL = 94% (15 of 16); |
| | | | | | | | | | ONL | 15 | 16 | 94% | |
| GC | e | 56 | 60 | 93% | FA10 | 22 | 25 | 88% | F-F | 0 | 0 | 0% | 93% (56 of 60) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'e'. |
| | | | | | | | | | ONL | 22 | 25 | 88% | FA10: F-F = 0% (0 of 0); ONL = 88% (22 of 25); |
| | | | | | SP11 | 34 | 35 | 97% | F-F | 8 | 8 | 100% | SP11: F-F = 100% (8 of 8); ONL = 96% (26 of 27); |
| | | | | | | | | | ONL | 26 | 27 | 96% | |
| GC | f | 558 | 641 | 87% | FA10 | 213 | 261 | 82% | F-F | 188 | 221 | 85% | 87% (558 of 641) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'f'. |
| | | | | | | | | | ONL | 25 | 40 | 63% | FA10: F-F = 85% (188 of 221); ONL = 63% (25 of 40); |
| | | | | | SP11 | 345 | 380 | 91% | F-F | 303 | 332 | 91% | SP11: F-F = 91% (303 of 332); ONL = 88% (42 of 48); |
| | | | | | | | | | ONL | 42 | 48 | 88% | |

Findings: General Criteria (a-k) continued

| ACT criteria | >=70 | ENR | % | sem | >=70 | ENR | % | type | >=70 | ENR | % | ACT concatenated findings | |
|--------------|----------|-----|-----|------|------|-----|-----|------|------|-----|-----|--|--|
| GC | g | 485 | 547 | 89% | FA10 | 167 | 185 | 90% | F-F | 163 | 178 | 92% | 89% (485 of 547) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'g'. |
| | | | | | | | | ONL | 4 | 7 | 57% | FA10: F-F = 92% (163 of 178); ONL = 57% (4 of 7); | |
| | | | | SP11 | 318 | 362 | 88% | F-F | 252 | 290 | 87% | SP11: F-F = 87% (252 of 290); ONL = 92% (66 of 72); | |
| | | | | | | | | ONL | 66 | 72 | 92% | | |
| GC | h | 187 | 220 | 85% | FA10 | 105 | 125 | 84% | F-F | 90 | 98 | 92% | 85% (187 of 220) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'h'. |
| | | | | | | | | ONL | 15 | 27 | 56% | FA10: F-F = 92% (90 of 98); ONL = 56% (15 of 27); | |
| | | | | SP11 | 82 | 95 | 86% | F-F | 66 | 76 | 87% | SP11: F-F = 87% (66 of 76); ONL = 84% (16 of 19); | |
| | | | | | | | | ONL | 16 | 19 | 84% | | |
| GC | i | 283 | 311 | 91% | FA10 | 114 | 127 | 90% | F-F | 110 | 120 | 92% | 91% (283 of 311) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'i'. |
| | | | | | | | | ONL | 4 | 7 | 57% | FA10: F-F = 92% (110 of 120); ONL = 57% (4 of 7); | |
| | | | | SP11 | 169 | 184 | 92% | F-F | 115 | 127 | 91% | SP11: F-F = 91% (115 of 127); ONL = 95% (54 of 57); | |
| | | | | | | | | ONL | 54 | 57 | 95% | | |
| GC | j | 338 | 373 | 91% | FA10 | 51 | 56 | 91% | F-F | 47 | 49 | 96% | 91% (338 of 373) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'j'. |
| | | | | | | | | ONL | 4 | 7 | 57% | FA10: F-F = 96% (47 of 49); ONL = 57% (4 of 7); | |
| | | | | SP11 | 287 | 317 | 91% | F-F | 277 | 306 | 91% | SP11: F-F = 91% (277 of 306); ONL = 91% (10 of 11); | |
| | | | | | | | | ONL | 10 | 11 | 91% | | |
| GC | k | 753 | 840 | 90% | FA10 | 251 | 288 | 87% | F-F | 229 | 263 | 87% | 90% (753 of 840) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'k'. |
| | | | | | | | | ONL | 22 | 25 | 88% | FA10: F-F = 87% (229 of 263); ONL = 88% (22 of 25); | |
| | | | | SP11 | 502 | 552 | 91% | F-F | 404 | 446 | 91% | SP11: F-F = 91% (404 of 446); ONL = 92% (98 of 106); | |
| | | | | | | | | ONL | 98 | 106 | 92% | | |

Findings: Associate Level Criteria

| ACT criteria | | >=70 | ENR | % | sem | >=70 | ENR | % | type | >=70 | ENR | % | ACT concatenated findings |
|--------------|----------|------|-----|-----|------|------|-----|------|------|------|-----|------|--|
| AD | a | 845 | 987 | 86% | FA10 | 517 | 623 | 83% | F-F | 492 | 583 | 84% | 86% (845 of 987) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Associate Degree Program Specific Criteria 'a'. |
| | | | | | | | | | ONL | 25 | 40 | 63% | FA10: F-F = 84% (492 of 583); ONL = 63% (25 of 40); |
| | | | | | SP11 | 328 | 364 | 90% | F-F | 276 | 307 | 90% | SP11: F-F = 90% (276 of 307); ONL = 91% (52 of 57); |
| | | | | | | | | | ONL | 52 | 57 | 91% | |
| AD | b | 203 | 239 | 85% | FA10 | 76 | 99 | 77% | F-F | 68 | 85 | 80% | 85% (203 of 239) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Associate Degree Program Specific Criteria 'b'. |
| | | | | | | | | | ONL | 8 | 14 | 57% | FA10: F-F = 80% (68 of 85); ONL = 57% (8 of 14); |
| | | | | | SP11 | 127 | 140 | 91% | F-F | 84 | 96 | 88% | SP11: F-F = 88% (84 of 96); ONL = 98% (43 of 44); |
| | | | | | | | | | ONL | 43 | 44 | 98% | |
| AD | c | 52 | 62 | 84% | FA10 | 26 | 30 | 87% | F-F | 20 | 24 | 83% | 84% (52 of 62) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Associate Degree Program Specific Criteria 'c'. |
| | | | | | | | | | ONL | 6 | 6 | 100% | FA10: F-F = 83% (20 of 24); ONL = 100% (6 of 6); |
| | | | | | SP11 | 26 | 32 | 81% | F-F | 21 | 26 | 81% | SP11: F-F = 81% (21 of 26); ONL = 83% (5 of 6); |
| | | | | | | | | | ONL | 5 | 6 | 83% | |
| AD | d | 273 | 308 | 89% | FA10 | 15 | 20 | 75% | F-F | 15 | 20 | 75% | 89% (273 of 308) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Associate Degree Program Specific Criteria 'd'. |
| | | | | | | | | | ONL | 0 | 0 | 0% | FA10: F-F = 75% (15 of 20); ONL = 0% (0 of 0); |
| | | | | | SP11 | 258 | 288 | 90% | F-F | 258 | 288 | 90% | SP11: F-F = 90% (258 of 288); ONL = 0% (0 of 0); |
| | | | | | | | | | ONL | 0 | 0 | 0% | |
| AD | e | 58 | 71 | 82% | FA10 | 23 | 36 | 64% | F-F | 12 | 16 | 75% | 82% (58 of 71) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Associate Degree Program Specific Criteria 'e'. |
| | | | | | | | | | ONL | 11 | 20 | 55% | FA10: F-F = 75% (12 of 16); ONL = 55% (11 of 20); |
| | | | | | SP11 | 35 | 35 | 100% | F-F | 14 | 14 | 100% | SP11: F-F = 100% (14 of 14); ONL = 100% (21 of 21); |
| | | | | | | | | | ONL | 21 | 21 | 100% | |
| AD | f | 47 | 58 | 81% | FA10 | 19 | 26 | 73% | F-F | 11 | 12 | 92% | 81% (47 of 58) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Associate Degree Program Specific Criteria 'f'. |
| | | | | | | | | | ONL | 8 | 14 | 57% | FA10: F-F = 92% (11 of 12); ONL = 57% (8 of 14); |
| | | | | | SP11 | 28 | 32 | 88% | F-F | 11 | 13 | 85% | SP11: F-F = 85% (11 of 13); ONL = 89% (17 of 19); |
| | | | | | | | | | ONL | 17 | 19 | 89% | |

Findings: Associate Level Criteria continued

| ACT criteria | >=70 | ENR | % | sem | >=70 | ENR | % | type | >=70 | ENR | % | ACT concatenated findings | |
|--------------|----------|-----|-----|------|------|-----|-----|------|------|-----|-----|---------------------------|--|
| AD | g | 94 | 108 | 87% | FA10 | 8 | 14 | 57% | F-F | 0 | 0 | 0% | 87% (94 of 108) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Associate Degree Program Specific Criteria 'g'. FA10: F-F = 0% (0 of 0); ONL = 57% (8 of 14); SP11: F-F = 90% (65 of 72); ONL = 95% (21 of 22); |
| | | | | | | | | ONL | 8 | 14 | 57% | | |
| | | | | SP11 | 86 | 94 | 91% | F-F | 65 | 72 | 90% | | |
| | | | | | | | | ONL | 21 | 22 | 95% | | |
| AD | h | 355 | 401 | 89% | FA10 | 79 | 95 | 83% | F-F | 71 | 81 | 88% | 89% (355 of 401) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Associate Degree Program Specific Criteria 'h'. FA10: F-F = 88% (71 of 81); ONL = 57% (8 of 14); SP11: F-F = 90% (240 of 266); ONL = 90% (36 of 40); |
| | | | | | | | | ONL | 8 | 14 | 57% | | |
| | | | | SP11 | 276 | 306 | 90% | F-F | 240 | 266 | 90% | | |
| | | | | | | | | ONL | 36 | 40 | 90% | | |
| AD | i | 640 | 747 | 86% | FA10 | 345 | 412 | 84% | F-F | 341 | 405 | 84% | 86% (640 of 747) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Associate Degree Program Specific Criteria 'i'. FA10: F-F = 84% (341 of 405); ONL = 57% (4 of 7); SP11: F-F = 88% (273 of 312); ONL = 96% (22 of 23); |
| | | | | | | | | ONL | 4 | 7 | 57% | | |
| | | | | SP11 | 295 | 335 | 88% | F-F | 273 | 312 | 88% | | |
| | | | | | | | | ONL | 22 | 23 | 96% | | |

Findings: Bachelor Level Criteria

| ACT criteria | | >=70 | ENR | % | sem | >=70 | ENR | % | type | >=70 | ENR | % | ACT concatenated findings |
|--------------|----------|------|-----|-----|------|------|-----|-----|------|------|-----|-----|--|
| BS | a | 694 | 821 | 85% | FA10 | 496 | 604 | 82% | F-F | 471 | 564 | 84% | 85% (694 of 821) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Baccalaureate Degree Program Specific Criteria 'a'. FA10: F-F = 84% (471 of 564); ONL = 63% (25 of 40); SP11: F-F = 90% (123 of 136); ONL = 93% (75 of 81); |
| | | | | | | | | | ONL | 25 | 40 | 63% | |
| | | | | | | | | | SP11 | 198 | 217 | 91% | |
| | | | | | | | | | ONL | 75 | 81 | 93% | |
| BS | b | 590 | 665 | 89% | FA10 | 150 | 180 | 83% | F-F | 142 | 166 | 86% | 89% (590 of 665) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Baccalaureate Degree Program Specific Criteria 'b'. FA10: F-F = 86% (142 of 166); ONL = 57% (8 of 14); SP11: F-F = 91% (384 of 423); ONL = 90% (56 of 62); |
| | | | | | | | | | ONL | 8 | 14 | 57% | |
| | | | | | | | | | SP11 | 440 | 485 | 91% | |
| | | | | | | | | | ONL | 56 | 62 | 90% | |
| BS | c | 174 | 197 | 88% | FA10 | 72 | 82 | 88% | F-F | 68 | 75 | 91% | 88% (174 of 197) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Baccalaureate Degree Program Specific Criteria 'c'. FA10: F-F = 91% (68 of 75); ONL = 57% (4 of 7); SP11: F-F = 87% (62 of 71); ONL = 91% (40 of 44); |
| | | | | | | | | | ONL | 4 | 7 | 57% | |
| | | | | | | | | | SP11 | 102 | 115 | 89% | |
| | | | | | | | | | ONL | 40 | 44 | 91% | |
| BS | d | 205 | 219 | 94% | FA10 | 68 | 72 | 94% | F-F | 64 | 65 | 98% | 94% (205 of 219) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Baccalaureate Degree Program Specific Criteria 'd'. FA10: F-F = 98% (64 of 65); ONL = 57% (4 of 7); SP11: F-F = 92% (103 of 112); ONL = 97% (34 of 35); |
| | | | | | | | | | ONL | 4 | 7 | 57% | |
| | | | | | | | | | SP11 | 137 | 147 | 93% | |
| | | | | | | | | | ONL | 34 | 35 | 97% | |
| BS | e | 538 | 617 | 87% | FA10 | 137 | 171 | 80% | F-F | 118 | 137 | 86% | 87% (538 of 617) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Baccalaureate Degree Program Specific Criteria 'e'. FA10: F-F = 86% (118 of 137); ONL = 56% (19 of 34); SP11: F-F = 90% (360 of 401); ONL = 91% (41 of 45); |
| | | | | | | | | | ONL | 19 | 34 | 56% | |
| | | | | | | | | | SP11 | 401 | 446 | 90% | |
| | | | | | | | | | ONL | 41 | 45 | 91% | |
| BS | f | 380 | 435 | 87% | FA10 | 137 | 166 | 83% | F-F | 118 | 140 | 84% | 87% (380 of 435) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Baccalaureate Degree Program Specific Criteria 'f'. FA10: F-F = 84% (118 of 140); ONL = 73% (19 of 26); SP11: F-F = 89% (177 of 198); ONL = 93% (66 of 71); |
| | | | | | | | | | ONL | 19 | 26 | 73% | |
| | | | | | | | | | SP11 | 243 | 269 | 90% | |
| | | | | | | | | | ONL | 66 | 71 | 93% | |

