Summer 2017

Prepared by
Bob Brackett, M.Ed.
# Table of Contents

**Executive Summary** 3

**General Education Assessment Fall 2016** 4

**General Education Assessment Spring 2017** 8

**General Education Summer Assessment Institute** 11

**Appendix A** 24

**Appendix B** 25

**Appendix C** 34

**Table 1** 6

**Table 2** 8

**Table 3** 19

**Figure 1** 5

**Figure 2** 7

**Figure 3** 18

**Figure 4** 19

**Figure 5** 20

**Figure 6** 21

**Figure 7** 21

**Figure 8** 22
Executive Summary

This report provides evaluation data from the fall 2016 and spring 2017 General Education Assessment Sessions and the 10th Annual Summer Assessment Institute conducted Summer 2017. It includes data generated from the pilot designed to address concerns related to collecting student evidence, and the technology used to facilitate this activity. Also included in this report are faculty scores of the student artifacts and faculty recommendations on how to help students better understand and subsequently demonstrate their understanding of these competencies. The faculty evaluation process was intended to provide insight on the quality of student artifacts tagged to Clemson’s general education competencies, as well as the clarity of the scoring rubrics.

What Are the Purpose and Goals of this Report?

This report was written to serve the following purposes:

1. To provide data on the fall 2016 and spring 2017 General Education Assessment Sessions.
2. To provide evaluation data from the 10th Annual General Education Summer Assessment Institute conducted summer 2017.
3. To document faculty scoring of student general education artifacts.
4. To gather information and recommendations about general education and assessment and its key components (competencies, rubrics) to facilitate adjustments and improvements in the future.
5. To generate support documents for students and faculty.

With the University in the midst of redesigning General Education, many of the competencies may change. Listed below are the competencies in their current state.

- **Arts and Humanities (AH):** Demonstrate an ability to analyze and/or interpret the Arts and Humanities.

- **Cross Cultural Awareness (CC):** Explain how aspects of culture are integrated into a comprehensive worldview; and then demonstrate how culture influences human behavior.

- **Mathematics (M):** Demonstrate mathematical literacy through solving problems, communicating concepts, reasoning mathematically, and applying mathematical or statistical methods, using multiple representations where applicable.

- **Natural Sciences (NS):** Demonstrate the process of scientific reasoning by performing an experiment and thoroughly discussing the results with reference to the scientific literature, or by studying a question through critical analysis of the evidence in the scientific literature.

- **Social Sciences (SS):** Describe and explain human actions using social science concepts and evidence.
• Science and Technology in Society (STS): Demonstrate and understanding of issues created by the complex interactions among science, technology and society.

General Education Assessment, Fall 2016

The primary purpose of the session was to review the assessment of general education, particularly related to collecting student evidence and the technology used to facilitate this activity. Participants were encouraged to take part in the 2017 Summer Assessment Institute.

Assessment Goals

• Collect student evidence (work) for course-related general education competencies to be evaluated in Summer Institute.
• Evaluate various methods of collecting student work.
• Evaluate the technology used to collect student work.

Twenty-three faculty members participated in the fall 2016 session: 13 from AAH, 3 from BSHS, 6 from COS, and 1 from CECAS. Sample courses for all course-related competencies (AH, CC, M, NS, SS, STS) were included in the study. More specifically 13 courses, some with multiple sections, generated 2812 artifacts as presented in Figure 1 below. Overall, the submission rate was 85% of students enrolled in the participating courses.

Figure 1. Breakdown of artifacts submitted across all competencies Fall 2016
Participants tested the following methods of uploading artifacts:

- Faculty batch upload
- Email of batch files to Assessment office for them to upload
- Student upload with in-class support from the professor
- Instructions on how to upload artifacts emailed to students who then did so outside of class.

Two courses, HON 2030, ENGL 2130, yielded a 100% submission rate. This was likely because faculty batch uploaded major course assignments. Percentage of student submission can be found in Table 1. 25. Of the 40 courses for which faculty encouraged uploading of the artifacts, the majority of the faculty chose to have students upload their assignments to Blackboard for grading then simply downloaded the artifacts in a batch and then uploaded the artifacts to the assessment database. This was the most efficient and effective method for gathering assignments. 13 of the 40 course sections chose for various reasons to email the artifacts to the assessment office and have us upload them. The assessment database is behind security measures that require users to either be on campus or connect via the Virtual Private Network, a process that was daunting to many. One instructor chose to have students upload assignments in class and 1 chose to email instructions to students to have them perform the upload on their own. Courses were chosen on a volunteer basis from faculty that had previously participated in the Summer Assessment Institute.
<table>
<thead>
<tr>
<th>Competency</th>
<th>Course</th>
<th>Artifact Count</th>
<th>Enrollment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Humanities</td>
<td>ENGL 2120</td>
<td>119</td>
<td>133</td>
<td>89%</td>
</tr>
<tr>
<td></td>
<td>ENGL 2130</td>
<td>28</td>
<td>28</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>ENGL 2150</td>
<td>118</td>
<td>128</td>
<td>92%</td>
</tr>
<tr>
<td></td>
<td>HON 2030</td>
<td>19</td>
<td>19</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>PHIL 1020</td>
<td>80</td>
<td>99</td>
<td>81%</td>
</tr>
<tr>
<td></td>
<td>PHIL 1030</td>
<td>22</td>
<td>31</td>
<td>71%</td>
</tr>
<tr>
<td></td>
<td>PHIL 3450</td>
<td>31</td>
<td>33</td>
<td>94%</td>
</tr>
<tr>
<td></td>
<td>REL 1020</td>
<td>69</td>
<td>74</td>
<td>93%</td>
</tr>
<tr>
<td>Cross Cultural Awareness</td>
<td>ANTH 2010</td>
<td>43</td>
<td>45</td>
<td>96%</td>
</tr>
<tr>
<td></td>
<td>GEOG 1030</td>
<td>147</td>
<td>164</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>POSC 1020</td>
<td>55</td>
<td>149</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>REL 1020</td>
<td>69</td>
<td>74</td>
<td>93%</td>
</tr>
<tr>
<td>Math</td>
<td>MATH 1010</td>
<td>63</td>
<td>85</td>
<td>74%</td>
</tr>
<tr>
<td></td>
<td>MATH 2070</td>
<td>77</td>
<td>84</td>
<td>92%</td>
</tr>
<tr>
<td></td>
<td>PHYS 1220/1240</td>
<td>17</td>
<td>18</td>
<td>94%</td>
</tr>
<tr>
<td></td>
<td>STAT 3090</td>
<td>73</td>
<td>70</td>
<td>104%</td>
</tr>
<tr>
<td>Natural Science</td>
<td>ASTR 1010/1040</td>
<td>22</td>
<td>25</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td>ASTR 1020/1030</td>
<td>21</td>
<td>26</td>
<td>81%</td>
</tr>
<tr>
<td></td>
<td>BIOL 1100</td>
<td>468</td>
<td>521</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>BIOL 1230/1200</td>
<td>222</td>
<td>250</td>
<td>89%</td>
</tr>
<tr>
<td></td>
<td>PHSC 1180</td>
<td>54</td>
<td>61</td>
<td>89%</td>
</tr>
<tr>
<td></td>
<td>PHYS 1220/1240</td>
<td>17</td>
<td>18</td>
<td>94%</td>
</tr>
<tr>
<td></td>
<td>PHYS 2070/2090</td>
<td>22</td>
<td>24</td>
<td>92%</td>
</tr>
<tr>
<td></td>
<td>PHYS 2080/2100</td>
<td>8</td>
<td>14</td>
<td>57%</td>
</tr>
<tr>
<td>Social Science</td>
<td>ANTH 2010</td>
<td>43</td>
<td>45</td>
<td>96%</td>
</tr>
<tr>
<td></td>
<td>GEOG 1010</td>
<td>39</td>
<td>40</td>
<td>98%</td>
</tr>
<tr>
<td></td>
<td>GEOG 1030</td>
<td>150</td>
<td>164</td>
<td>91%</td>
</tr>
<tr>
<td></td>
<td>GEOG 1060</td>
<td>18</td>
<td>19</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>HIST 1220</td>
<td>115</td>
<td>121</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>HIST 1240</td>
<td>63</td>
<td>66</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>POSC 1020</td>
<td>55</td>
<td>149</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>SOC 2010</td>
<td>52</td>
<td>78</td>
<td>67%</td>
</tr>
<tr>
<td>Science Technology and</td>
<td>ENSP 2000</td>
<td>102</td>
<td>106</td>
<td>96%</td>
</tr>
<tr>
<td>Society</td>
<td>HIST 1220</td>
<td>115</td>
<td>121</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>HIST 1240</td>
<td>64</td>
<td>66</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>PHIL 3450</td>
<td>55</td>
<td>61</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>STS 1010</td>
<td>77</td>
<td>104</td>
<td>74%</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>2812</td>
<td>3313</td>
<td>85%</td>
</tr>
</tbody>
</table>
Of the 23 faculty who were part of the fall assessment session, 14 participated in the Summer 2017 Assessment Institute, the goal of which was to review a comprehensive sample of student artifacts from fall 2016 and spring 2017 general education assessment sessions to evaluate whether students are achieving the competencies that Clemson has set forth.

**General Education Assessment, Spring 2017**

Twenty-three faculty members participated in the assessment session: 14 from AAH, 3 from BSHS, 4 from COS, and 2 from CECAS. Sample courses for all course-related competencies (AH, CC, M, NS, SS, STS) were included in the study. More specifically 28 courses, some with multiple sections, generated 2082 artifacts as presented in Figure 2 below. Overall, the submission rate was 84% of students enrolled in the participating courses.

**Figure 2. Breakdown of artifacts submitted across all competencies**

![Figure 2](image)

Participants tested the following methods of uploading artifacts:

- Faculty batch upload
- Emailing artifacts to the Assessment Office for upload
- Student upload with in-class support from the professor
- Instructions on how to upload artifacts emailed to students who then did so outside of class.
FOUR courses, ENGL 2130, BIOL 1230, HON 2030, and HON 2060 had a 100% submission rate attributed to batch uploading from the course management system. Percentages of student uploads can be found in Table 2. The vast majority of the faculty chose to have students upload their assignments to Blackboard for grading then simply downloaded them in a batch and uploaded them the same way. 19 of the course sections performed a faculty upload. 1 section emailed students instructions. 1 section had students upload in class. 14 sections emailed artifacts to the assessment office for upload. Most likely, the instructors who sent artifacts to the assessment office did so because the security firewall protecting the database acted as a perceived barrier to ease of use. Most participants indicated that faculty batch uploading was the most efficient method to submit assessment artifacts for General Education courses. We hope to install new assessment software in the coming year that will seamlessly transfer artifacts from Canvas, our LMS, to a database for juried assessment of General Education competencies.
Table 2. Spring 2017 Submissions

<table>
<thead>
<tr>
<th>Competency</th>
<th>Course</th>
<th>Artifact Count</th>
<th>Enrollment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Humanities</td>
<td>ENGL 2130</td>
<td>31</td>
<td>31</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>ENGL 2140</td>
<td>88</td>
<td>98</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>ENGL 2150</td>
<td>85</td>
<td>90</td>
<td>94%</td>
</tr>
<tr>
<td></td>
<td>HON 2030</td>
<td>19</td>
<td>19</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>PHIL 3450</td>
<td>68</td>
<td>70</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>REL 1020</td>
<td>107</td>
<td>115</td>
<td>93%</td>
</tr>
<tr>
<td></td>
<td>THEA 2100</td>
<td>54</td>
<td>64</td>
<td>84%</td>
</tr>
<tr>
<td>Cross Cultural Awareness</td>
<td>GEOG 1030</td>
<td>40</td>
<td>33</td>
<td>121%</td>
</tr>
<tr>
<td></td>
<td>POSC 1020</td>
<td>73</td>
<td>119</td>
<td>61%</td>
</tr>
<tr>
<td>Math</td>
<td>REL 1020</td>
<td>107</td>
<td>116</td>
<td>92%</td>
</tr>
<tr>
<td></td>
<td>Math 1060</td>
<td>64</td>
<td>89</td>
<td>72%</td>
</tr>
<tr>
<td>Natural Science</td>
<td>BIOL 1110</td>
<td>304</td>
<td>319</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>BIOL 1230/1231</td>
<td>102</td>
<td>100</td>
<td>102%</td>
</tr>
<tr>
<td></td>
<td>PHSC 1170</td>
<td>47</td>
<td>53</td>
<td>89%</td>
</tr>
<tr>
<td></td>
<td>PHYS 1220/1221</td>
<td>24</td>
<td>32</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td>PHYS 2070/2071</td>
<td>70</td>
<td>72</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>PHYS 2080/2081</td>
<td>34</td>
<td>47</td>
<td>72%</td>
</tr>
<tr>
<td>Social Science</td>
<td>ANTH 2010</td>
<td>94</td>
<td>98</td>
<td>96%</td>
</tr>
<tr>
<td></td>
<td>GEOG 1030</td>
<td>43</td>
<td>161</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>HIST 1240</td>
<td>105</td>
<td>115</td>
<td>91%</td>
</tr>
<tr>
<td></td>
<td>POSC 1020</td>
<td>73</td>
<td>119</td>
<td>61%</td>
</tr>
<tr>
<td></td>
<td>SOC 2010</td>
<td>20</td>
<td>47</td>
<td>43%</td>
</tr>
<tr>
<td>Science Technology and Society</td>
<td>ENSP 2000</td>
<td>58</td>
<td>81</td>
<td>72%</td>
</tr>
<tr>
<td></td>
<td>HIST 1220</td>
<td>115</td>
<td>121</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>HIST 1240</td>
<td>111</td>
<td>115</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>HON 2060</td>
<td>8</td>
<td>8</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>PHIL 3450</td>
<td>68</td>
<td>70</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>STS 1010</td>
<td>70</td>
<td>72</td>
<td>97%</td>
</tr>
<tr>
<td>Totals</td>
<td>2082</td>
<td>2474</td>
<td></td>
<td>84%</td>
</tr>
</tbody>
</table>

Of the 23 faculty who were part of the spring session, 15, including 14 who also participated in the fall session, participated in the Summer 2017 Assessment Institute. The goal of the Assessment Institute was to review a comprehensive sample of student artifacts from selected fall 2016 and spring 2017 general education courses to evaluate whether students are achieving the competencies that Clemson has set forth for the University’s General Education curriculum.
General Education Summer 2017 Assessment Institute

This section provides data on the 10th Annual General Education Summer Assessment Institute and includes faculty scores of the student artifacts, participant recommendations on how to help students better understand and subsequently demonstrate their understanding of these competencies, and participant recommendations related to courses, assignments, faculty and student support, and the competencies. The faculty evaluation process was intended to provide insight on the quality of student artifacts illustrating achievement of Clemson’s general education competencies, as well as to evaluate the clarity and applicability of the scoring rubrics.

Summer Assessment Institute Goals

- Learn about the General Education Assessment and prepare for fall 2017 artifact collection.
- Review and revise course syllabi with the express purposes of ensuring that faculty not only have the learning outcome listed, but also have designated an assignment that would serve as an appropriate artifact.
- Create and revise tips on creating university-level general education assignments to illustrate achievement of General Education competencies.
- Assess student work generated from the fall and spring assessment of General Education courses.
- Prepare a final report with assessment findings.

Method

Student artifacts for six of the eight general education competencies were examined and scored by 26 faculty evaluators across the university. Evaluators were a mix of previous participants and new invitees based on recommendations from faculty that previously participated. This process occurred over the period of one week during the college summer session. 2113 artifacts were scored for content, using rubrics for each individual General Education competency. Artifacts were also scored for quality of communication, using a university-wide rubric, since students are expected to meet minimum levels of communication skill despite the subject matter at hand.

The faculty evaluation process was intended to provide insight on the quality of student artifacts tagged to Clemson’s general education competencies. The team also assessed the clarity of the scoring rubrics. In addition, participants also offered suggestions on how to better support students in the process of artifact development and collection, how to educate and support faculty in the process of course and assignments development, and how to strengthen both the general education curriculum and it’s assessment.

All artifacts were scored on a 1-4 scale with a score of 4 representing exemplary work, a 3 above average work, 2’s satisfactory work, and a score of one indicating that the artifact did not adequately demonstrate competency.

1 Only the 6 course-connected competencies (AH, CC, M, NS, SS, STS) were included in both the pilot and the assessment. The distributed competencies (CT, EJ) were not included.
Participants

The summer assessment team included 26 faculty members from a variety of disciplines across campus, 14 of whom participated in both fall 2016 and spring 2017 general education assessment with 1 additional coming from the spring 2017 session. The faculty members worked in groups within the competency areas. Each group was assigned to specific competencies to allow for greater inter-rater reliability. On the first day of the assessment process, faculty met in their larger competency area groups to norm the scoring. Inter-rater reliability was deemed satisfactory if all participants reached the same conclusions in their evaluation of a common set of artifacts.

Faculty members that participated in the Assessment Institute and their areas are listed below:

Arts and Humanities
*Lucian Ghita – Lecturer, College of Architecture, Arts and Humanities
*John Wolfe – Lecturer, College of Architecture, Arts and Humanities
*Megan Macalystre – Lecturer, College of Architecture, Arts and Humanities
*Shannon Robert - Associate Professor, College of Architecture, Arts and Humanities
Katalin Beck – Lecturer, College of Architecture, Arts and Humanities
Gabriela Stoica – Assistant Professor, College of Architecture, Arts and Humanities

Cross Cultural Awareness
Candace Coffman – Lecturer, College of Behavioral, Social and Health Sciences
*William Terry – Associate Professor, College of Architecture, Arts and Humanities
Rachel Moore – Associate Professor, College of Architecture, Arts and Humanities
Robert Stephens – Lecturer, College of Architecture, Arts and Humanities

Mathematics
*Ellen Breazel – Lecturer, College of Science
*Judith Cottingham – Sr. Lecturer, College of Science
Christy Brown – Lecturer, College of Science

Natural Sciences
*Minory Namouz – Lecturer, College of Engineering, Computing, and Applied Science
Lih Sin The – Senior Lecturer, College of Science
Pooja Puneet – Lecturer, College of Science

Social Sciences
*James Jeffries – Sr. Lecturer, College of Architecture, Arts and Humanities
*William Terry – Assistant Professor, College of Architecture, Arts and Humanities
*Jennifer Holland – Senior Lecturer, College of Behavioral, Social and Health Sciences
Christa Smith – Associate Professor, College of Architecture, Arts and Humanities

*Represents faculty that participated in either the fall 2016 or spring 2017 sessions.
Science and Technology in Society

*Elizabeth Stansell – Senior Lecturer - College of Architecture, Arts and Humanities  
*David Foltz – Lecturer - College of Architecture, Arts and Humanities  
*Tom Owino – Associate Professor, College of Engineering and Science  
*Jennifer Ingle – Senior Lecturer, College of Architecture, Arts and Humanities  
Bruce Whisler – Associate Professor, College of Architecture, Arts and Humanities  
Andrew Garnar – Senior Lecturer, College of Architecture, Arts and Humanities

Goal 1: Learn about General Education fall and spring Assessment and prepare for fall 2017 assessment of general education competencies.

Performance expectations
Bob Brackett and members of the fall and spring sessions presented data gathered related to faculty time, artifact upload method, and the technology used to facilitate the upload process. The prevailing consensus is that the process is not time consuming nor is it a particular burden on instructors. On average, faculty members reported that the process took roughly ten minutes per semester, provided they had an assignment built into their curriculum designed to illustrate achievement of the competency.

Recommendations based on use of results
- Given the general lack of awareness about SACSCOC among faculty, including its purpose and requirements, it is important that outreach measures be implemented to promote:
  - The overarching purpose of SACSCOC.
  - The requirements for compliance, including the role of assessment and the consequences of non-compliance.
- Provide programs for promoting faculty awareness of the entire scope of the assessment process, including their place within the loop connecting competency descriptions, learning outcomes, assessment of artifacts, and feedback.
  - Provide additional explanation of mechanics of assessment including role of exemplars.
  - Upload detailed PowerPoints to website for faculty viewing.
- Make Gen Ed faculty aware of the learning outcomes and associated scoring rubrics, that will be used to measure learning in their classes related to Gen Ed competencies.
- It is recommended that instructors or students provide a rationale statement for each artifact in order for the reviewers to have a full understanding of the expectations for the students. This rationale statement should include information about which parts of the artifact may be most useful in assessing content and communication, and the type of assessment (in class quiz, take home problem, research paper, etc.).

Goal 2: Review and revise course syllabi

Performance expectations
Participants reviewed and revised course syllabi based on knowledge gained from the assessment institute.
Recommendations based on use of results

- Participants stressed that all faculty, grad students, lecturers and adjuncts should be provided support to learn how to make appropriate adjustments to their syllabi, assignments, and courses related to general education competencies.
  - This support can take the form of professional development opportunities (University-wide or within individual department meetings), online training, technical support, email communication, etc.
  - Examples of syllabi that exhibit good models for producing successful artifacts should be available to faculty.
  - Review and make suggestions for appropriate language and examples in our syllabi at our initial course coordinators meeting at the beginning of each semester.
  - This can also be accomplished with the revitalization of the Office of Teaching Effectiveness and Innovation.

Goal 3: Create and/or revise tips for faculty teaching each competency.

Performance expectations
Faculty revised tips for faculty teaching each of the competencies, adding to and refining a process that began in previous years.

Recommendations based on use of results

Tips for Creating a STS Competency Artifact

A successful artifact will:

- Engage critically with the material.
- Provide evidence of the competency in a well-organized manner.
- Employ appropriate reasoning and evidence to support a thesis-driven argument.
- Provide specific details and references from the material being analyzed with minimal spelling, stylistic, and grammatical errors.
- Provide adequate citation, in accordance with the assignment.
- Exhibit a college-level understanding of the material.
- Discuss deeper significance and/or broader implications of material.

Further tips to the instructor:

- STS artifacts ideally will take the form of an essay, research paper, or critical reflection.
- The assignment should prompt students to consider at least one direct, specific interaction between society and technology or science. Most often, this will involve discussion of a particular technology or branch of science in relation to society; however, it might include specific discussion of philosophical or ethical frameworks in regard to technology or science.
Discussion of a technology in and of itself or discussion of the natural world in and of itself would not qualify as STS content.

An STS assignment should require specificity regarding the scientific, technological, and social factors it addresses. An assignment response should explain how development or use of a particular technological artifact or system renders particular effects for society. Similarly, an assignment response should explain how a particular scientific discovery or area of research has particular ramifications for society.

The artifact should move beyond a summary or reporting of facts into the realm of critical analysis or argument. An artifact of this kind will critically engage with the topic using evidence, such as proper academic sources where appropriate.

If the STS artifact is a piece of in-class writing, students should still adequately cite their sources. The students may of course do this themselves, via internal citations and works cited page, or the instructor might include a bibliographic list of the common texts along with the description of the assignment for the database.

The following generally will NOT serve as appropriate artifacts for the STS Competency as they tend not to provide any evidence of analysis:

- Historical surveys
- Book reports
- Power Points or Prezis
- Worksheets
- Short-answer assignments
- Multiple choice assignments

Many artifacts demonstrate students’ fundamental lack of understanding about appropriate college-level writing as well as the definition and function of analysis. We recommend instructors discuss with students discipline-specific modes of critical analysis and college-level writing.

**Tips for creating a successful Math artifact**

Instructors who are designing artifacts for collection should be able to access sample artifacts or converse with a General Education Assessment mentor about the scoring process and the reflection of those scores on the course in question.

A successful artifact from a mathematics course will:

- Correctly use algebra and logic to solve multistep problems;
- Correctly translate between mathematical language and lay language.

  OR

- Correctly present and apply a mathematical technique to a real-world problem discussed in the specific mathematical area under study;
- Correctly translate between mathematical language and lay language.

A successful artifact from a statistics course will:

- Correctly identify variables and the relationships among them;
- Use appropriate statistical methods to describe quantitative data observed or generated from these variables;
- Correctly translate between statistical language and lay language.
• The student must perform mathematics in order to demonstrate this competency. The mere
discussion of quantitative data will not be sufficient.

• The artifact must describe the context in which the mathematical work is being presented.
• Notes on some common types of artifacts:
  o A hypothetical mathematical problem could be acceptable if the student describes
    the context and explains the process used in reaching the solution.
  o Excel spreadsheets will not qualify unless the student includes explanations of the
    math and interpretation of results.
  o Mathematics exams could be sufficient provided that step-by-step calculations are
    shown, and they include written interpretation of results.
  o Research papers with statistical calculations are acceptable for this competency, but
    the calculations must be shown and discussed.
  o Input/output from statistical software must be presented as a Word file or PDF so
    that assessors can open the file. Also, the artifact must include explanations of the
    mathematics and interpretation of results.

Tips for a Natural Sciences Gen Ed Faculty Member

A successful artifact will:

• Exhibit understanding (appropriate for the course level) of the scientific principles behind
  the experiment or literature survey;
• Formulate clear, falsifiable hypotheses;
• If reporting on an experiment, use an experimental design capable of testing the
  hypotheses;
• Collect adequate data;
• Analyze the data appropriately;
• Draw conclusions supported by the data;
• Discuss the broader implications of the study.

Further tips to the instructor:
• The typical artifact is a report on a formal laboratory or field study. An artifact of this kind
  will report on a scientific experiment in which a hypothesis is tested, data are analyzed, and
  conclusions are drawn about the correspondence of the results to expected outcomes or
  values.
• Non-experimental (literature survey) papers may be submitted if they critically review
  natural science research, discuss and analyze issues raised by that research, and are best if
  they propose questions which arise from this analysis.
• The student’s understanding of the science behind the experiment or literature should be
  evident in the artifact. Artifacts that do not demonstrate scientific knowledge will be
  regarded as inadequate.
 Worksheets, short-answer assignments, descriptions of routine measurement techniques, book reports, PowerPoint presentations, and lesson plans rarely demonstrate the Natural Sciences competency as they do not provide the appropriate scientific analysis.

**Tips for faculty members teaching Social Sciences courses**

- Artifacts should focus upon human behavior (as opposed to environmental factors, plant behavior, biological processes, etc.) and should identify multiple relevant social science concepts.
- Artifacts should move beyond simple description of a social science concept or human behavior to:
  - Apply social science concepts, models, and theories.
  - Make connections between social science concepts and human behavior.
  - Draw reasonable and logical conclusions based upon relevant social science evidence.
  - Human behavior needs to be explained by the application of social scientific concepts rather than personal opinions and/or anecdotal evidence. This can be accomplished by requiring students to rely on concepts, theories, and relevant literature to explain and analyze human behavior.
  - Faculty members teaching large sections may consider assigning group projects, ungraded activities, narrated presentations, and randomly graded assignments.

A successful artifact will:

- **Identify** social factors that are relevant to the explanation of human behavior.
- **Apply** social science concepts, models, and theories to explain these human actions.
- **Establish** meaningful and logical **connections** between social science concepts and human behavior.
- **Provide** sufficient **evidence** to reach conclusions.
- **Draw** meaningful and logical **conclusions** that are supported by evidence.
- If appropriate, discuss the broader implications of the study.

Further tips to the instructor:

- Students’ understanding of core principles within a social science discipline should be evident in the artifact.
- The typical artifact is a paper in which an important social issue is explored. Topics may be historical or contemporary and may relate to the actions of individuals, collectivities, cultures, nations, or world systems.
• Group projects, presentations with narration or substantive speakers’ notes, student-produced videos, or portfolios may also be acceptable
• Book, article, and literature reviews may fulfill the competency if students critically review social science research and evidence, discuss and analyze issues raised by that research, and draw conclusions which arise from this analysis.
• Outlines, lecture notes, worksheets, short-answer assignments, multiple choice tests, and presentations without narration are unlikely to demonstrate the Social Sciences competency as it is written, as they are unlikely to contain the depth of analysis necessary to meet this competency.

**Tips for faculty teaching Cross-Cultural Awareness**

A successful artifact will:

- Demonstrate an academically grounded understanding of the concept of culture.
- Show a nuanced perspective of one’s own culture in comparison with other cultures.
- Specifically discuss at least one culture other than their own.
- Avoid essentializing cultures and acknowledge cultural complexity.
- Provide specific examples of connections between culture and human behavior.

Further tips to the instructor:

- Assignments could encourage students to critically examine their own culture in relation to others.
- Students should provide concrete documentation of their own perspectives and evidence of self-reflection.
- Students should avoid straight summarization in assignments that incorporate films and/or books as sources and should instead put these sources in juxtaposition with one another and include a cross-cultural analysis.
- Student resources for the assignment should engage with culture directly.
- The language and documentation of a successful artifact should be of college-level quality. This means that there should be minimal typos, correct word usage, clear and convincing argumentation and discipline-appropriate citations.

**Tips for Instructors teaching Arts and Humanities**

A successful artifact will:

- Engage critically with the textual, historical, or artistic material.
- Provide evidence of the competency in a well-organized manner with logical flow.
- Employ appropriate reasoning and evidence to support a thesis-driven argument.
- Provide specific details and references from the material being analyzed with minimal spelling, stylistic, and grammatical errors.
- Incorporate literary and/or discipline-specific sources / evidence by providing adequate and appropriate citations (when necessary for the assignment).
- Exhibit a college-level understanding of the material.
● Discuss deeper significance and/or broader implications of material.

Further tips to the instructor:
● The typical Arts and Humanities artifact is an essay, research paper, critical reflection, or arts-related project on any topic with a cultural component. An artifact of this kind will critically engage with the topic using evidence, such as proper academic sources where appropriate.
● The following do NOT serve as appropriate artifacts for the Arts and Humanities competency as they typically do not provide any analysis of the subject matter:
  ○ Historical surveys
  ○ Book reports
  ○ Plot summaries
  ○ Mere comparisons without sustained analysis
  ○ Power Points or Prezis
  ○ Artistic conceptual statements
  ○ Worksheets
  ○ Short-answer assignments
  ○ Multiple choice assignments
  ○ Descriptions of artistic process
  ○ Lesson plans
● Many artifacts demonstrate students’ fundamental lack of understanding about appropriate college-level writing as well as the definition and function of analysis. We recommend instructors discuss with students discipline-specific modes of critical analysis and college-level writing.

**Goal 4: Assess student work generated to evaluate General Education competencies.**
Participants assessed a random sample of student work for the 6 course-related competencies included in the general education fall 2016 and spring 2017 sessions. Faculty assessors were grouped by content area and reviewed a stratified random sample of all artifacts across AH, CC, M, NS, SS, & STS. 2113 artifacts were evaluated representing 48% of the 4444 total artifacts submitted. The most frequently assessed competency was Arts and Humanities (AH) with 629 (67%) artifacts reviewed, followed by the Science Technology in Society (STS) with 64% (N=728) of the total number of artifacts evaluated. Because fewer artifacts were collected for mathematics all accessible artifacts were reviewed. Figure 3 shows the distribution of competencies reviewed.
In terms of scores, NS received the highest average overall score of 2.6, likely owing to two facts. Much of the work submitted came from courses led by faculty that have long been participants in General Education Assessment Institutes and also the addition this year of some more lab intensive work from Physics courses that have not been collected in the past. This was followed by STS with an average score of 2.1 (See figure 4). Table 3 provides percentages of artifacts scored. Rubrics for the competencies can be found in Appendix B.

Figure 3. Artifacts Submitted and Reviewed by Competency

Figure 4. Average score by competency
<table>
<thead>
<tr>
<th>Competency</th>
<th>N</th>
<th>%</th>
<th>Minimum Score</th>
<th>Maximum Score</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH</td>
<td>629</td>
<td>67</td>
<td>1</td>
<td>4</td>
<td>2.0</td>
</tr>
<tr>
<td>CC</td>
<td>238</td>
<td>44</td>
<td>1</td>
<td>4</td>
<td>1.8</td>
</tr>
<tr>
<td>M</td>
<td>278</td>
<td>95</td>
<td>1</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td>NS</td>
<td>140</td>
<td>10</td>
<td>1</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td>SS</td>
<td>360</td>
<td>41</td>
<td>1</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td>STS</td>
<td>468</td>
<td>64</td>
<td>1</td>
<td>4</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Table 3. Descriptive Statistics Broken Down by Competency

Figure 5 shows the five-year trend for content scores across the six competencies.

Figure 5. Five-year trend averages

The general increasing trend of these scores likely reflects the fact that the faculty involved in teaching these courses are past participants in the Summer Assessment Institute. Not only do they have experience scoring work on the rubrics, but also they have spent time with their peers evaluating and improving their own syllabi and the artifacts to be submitted from the courses.

Goal 5: Evaluate Artifacts for Communication.

When the current General Education system was put in place, communication was considered to be a university-wide competency, keeping in mind Clemson's commitment to writing across the curriculum. This means that all work submitted is evaluated not only for content in the individual disciplines, but also
on a University-wide Communication Rubric that applies to all course work. Two summers ago, the communication-scoring criterion was changed from pass/fail to a 4-level rubric. This new rubric was applied to the artifacts scored this summer and can be found in Appendix C. Figure 6 provides a score breakdown for each competency, and Figure 7 provides the average communication score for each competency. Figure 8 shows the rate of change over the last two years.

**Figure 6. Communication Score Breakdown for Each Competency**

![Bar Chart: Communication Score Distribution]

**Figure 7. Communication Score Averages for Each Competency**

![Bar Chart: Communication Score Averages]
Again, the overall improvement in these scores is likely attributable to the fact that artifacts submitted came from courses instructed by faculty who have experience in the Summer Assessment Institute.

The following section provides comments and recommendations from the reviewers based on the use of the scoring results.

**Overall recommendations related to improving student communication skills**

Participants agreed that the 4-level communication Rubric developed at the 2015 Summer Assessment Institute should be retained. Some participants argued that if the writing is not “college level,” it should not receive a passing score. Currently one can submit a less than college level artifact and receive a “Pass with reservations” score. More discussion needs to occur in the individual courses about what characterizes “college-level” writing.

**Final Thoughts and Recommendations**

Participants agreed as we move forward with general education assessment, it is essential to have departmental involvement in general education and the assessment of student work. Participants suggested that we change the way that general education courses are evaluated in order to emphasize and value involvement in general education improvement strategies.
Double-dip artifacts seemed to address only one of the competencies. A review should be made of double-dip courses to make sure all relevant competencies are addressed in the course. All participants agreed that professional development that addresses writing student learning outcomes for syllabi, developing assignments appropriate for the competencies, etc. should be provided to everyone teaching general education courses. With the reestablishment of the Office of Teaching Effectiveness and Innovation, this should be an immediate goal.

Regarding the Summer Assessment Institutes, most participants think they should continue in roughly the same format and faculty should commit to participating for a minimum of two consecutive years so that there is overlap from year-to-year. They suggested there should be at least one new faculty from each content area each summer.

A breakdown of individual course results will be sent to faculty that participated in each of the sessions.
Appendix A

Participant suggestions on issues related to general education and assessment.

1) Student learning outcomes should be written in a measurable way (i.e., Bloom’s taxonomy) using language that can be assessed and actually demonstrate student learning.

2) Professional development should be available for all faculty, grad students, lecturers and adjuncts where they learn about and in some cases, create rubrics used in assessment, Bloom’s updated taxonomy information, definition of competency and examples of assignments that fulfill the competency.

3) All faculty, grad students, lecturers and adjuncts should be provided with support to learn how to make any appropriate adjustments to their syllabi and courses as general education assessment methods change. This can include professional development opportunities (University-wide or within individual department meetings), online training, technical support, email communication, etc.

4) A more comprehensive system for collecting and assessing artifacts from all Gen Ed courses.

5) Programs for promoting faculty awareness of the entire scope of the assessment process, and their place within the loop connecting competency descriptions, learning outcomes, assessment of artifacts, and feedback.

6) The transition between a 2 and 3 in the STS content rubric is dramatic and doesn’t provide a consistent, evenly calibrated scale from 1 to 4. Notably, the phrasing of the 2 potentially allows for students to make an off-hand or parenthetical comment about the interactions and still earn a 2. The 3 then requires analysis of multiple impacts. Again, an evenly calibrated scale would more effectively assess artifacts and allow for more streamlined application.

7) The group has concern over passing artifacts where the communication is determined to be “not college writing.” So, the phrasing of the category “Pass with Reservations” could be changed, though it would be more effective to rephrase “not college level writing” to “poor writing” or “writing needs notable improvement in grammar and mechanics.”

8) It is recommended that instructors or students provide a rationale statement for each artifact in order for the reviewers to have a full understanding of the expectations for the students. This rationale statement should include information about which parts of the artifact may be most useful in assessing content and communication, and the type of assessment (in class quiz, take home problem).

9) Instructors who are designing artifacts for collection should be able to access sample artifacts or discuss with a General Education Assessment mentor about the scoring process and the reflection of those scores on the course in question.

10) There should be example student artifacts with scores (anonymous of course) available to GenEd instructors year-round via a website.
Appendix B

General Education Rubrics

Rubrics represent guides for course designers/instructors, students, and evaluators. Course designers and instructors can use the rubrics as a basis for creating activities for students that will meet General Education competencies. Students can use the rubrics to identify target criteria for creating evidence of each competency. Evaluators will use the rubrics to score student work collected via sampling methods.

These General Education rubrics were originally created at a faculty rubric development workshop directed by D. Switzer (Teacher Education) on Nov. 11, 2005. After instruction on rubric creation, faculty worked in small groups arranged by General Education competency area (Ethical Judgment, for example). These groups were populated by faculty from disciplines with interest in each area. Initial drafts were transcribed and edited by J. Appling (Undergraduate Studies) to standardize rubric levels and language. Additional feedback and content revision was provided by faculty groups formed from members of the Undergraduate Curriculum Committee and the University Assessment Committee. Draft rubrics were edited for language and style by B. Ramirez from English.

These draft rubrics are constructed on a four-level system. The bottom level, 1, represents unsatisfactory work. The upper level, 4, represents exemplary work. Thus only descriptions of levels 2 and 3 are necessary to set the scale. Level 3 represents work that meets general expectations of competency. Level 2 represents work that has components of reasonable performance, but is indicative of a student still developing skill or knowledge in that area.

It is hoped that there will be few level 1 examples of student work. Ideally the largest fraction of students will fall in categories 3 and 4. The populations that exhibit work in levels 1 and 2 could give an indication of areas where attention should be given. Level 2, as an indicator of emerging student ability, helps provide better discrimination in order to improve the usefulness of the scale for program assessment. This is not an interval scale, only ordinal (i.e., the difference between 1 and 2 is not the same as between 2 and 3, etc.). Frequency profiles, rather than means, can be used to indicate changes from year to year.

The Undergraduate Curriculum Committee approved these rubrics at the May 6, 2006 meeting.

*Subsequent changes to STS and Communication have been made since 2006.