For each dimension of Empirical & Quantitative Skills, every course must identify 4 multiple choice questions, each of which has at least 3 answer choices. The questions needn’t all occur on a single assignment. If a student answers all 4 questions correctly, they will have demonstrated Advanced Proficiency in EQS as measured by this assessment method. If a student answers 3 of 4 questions correctly, they will have demonstrated Proficiency in EQS as measured by this assessment method. If a student answers 2 of 4 questions correctly, they will have demonstrated Developing Proficiency in EQS as measured by this assessment method. If a student answers 1 of 4 questions correctly, they will have demonstrated Beginning Proficiency in EQS as measured by this assessment method. If a student answers 0 of 4 questions correctly, they will have demonstrated Insufficient Proficiency in EQS as measured by this assessment method.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Advanced (4)</th>
<th>Proficient (3)</th>
<th>Developing (2)</th>
<th>Beginning (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gather, identify, or recognize</strong> appropriate numerical data or observable facts. Where relevant, bias should be avoided and sampling should be done with care.</td>
<td>4 targeted questions answered correctly</td>
<td>3 targeted questions answered correctly</td>
<td>2 targeted questions answered correctly</td>
<td>1 targeted question answered correctly</td>
</tr>
<tr>
<td><strong>Process, synthesize, or manipulate</strong> numerical data or observable facts.</td>
<td>4 targeted questions answered correctly</td>
<td>3 targeted questions answered correctly</td>
<td>2 targeted questions answered correctly</td>
<td>1 targeted question answered correctly</td>
</tr>
<tr>
<td><strong>Interpret, analyze, or explain</strong> numerical data or observable facts.</td>
<td>4 targeted questions answered correctly</td>
<td>3 targeted questions answered correctly</td>
<td>2 targeted questions answered correctly</td>
<td>1 targeted question answered correctly</td>
</tr>
</tbody>
</table>
Empirical and Quantitative Skills
Texas Higher Education Coordinating Board Language

Empirical and Quantitative Skills: *to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions*

**VALUE language**
Quantitative Literacy – also known as Numeracy or Quantitative Reasoning – is a “habit of mind,” competency, and comfort in working with numerical data. Individuals with strong QL skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They understand and can create sophisticated arguments supported by quantitative evidence and they can clearly communicate those arguments in a variety of formats (using words, table, graphs, mathematical equations, etc., as appropriate).

**Overview** (adapted from the VALUE rubric Framing Language)
This assessment has been designed for the evaluation of work that addresses Empirical and Quantitative Skills in a substantive way. EQS is not just computation, not just citing of someone else’s data. EQS is a “habit of mind”, a way of thinking about the world that relies on data and on the analysis of data to make connections and draw conclusions.

**Acknowledgements:** UNT’s rubric development groups consisted of faculty from across the disciplines. The groups borrowed and learned from many sources and would especially like to acknowledge those listed below.
- American Association of Colleges and Universities, especially the Liberal Education and America’s Promise (LEAP) project and the Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics.
- Northwestern Michigan College
- University of Houston