# Quantitative Literacy/Studies (QL/QS)
## Signature Assignment and Reflection Guide

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- This is a guide. Faculty should attempt to have their signature assignments and student reflections address as many of the learning outcomes identified here as make sense within the context of each course. The General Education Committee will be using these overall expectations when examining courses up for 5-year review, and a course that addresses few of these outcomes may raise concerns among committee members. From an assessment point of view, the General Education program and its students benefit when General Educated designated courses address the program's outcomes.

- This guide is derived from the faculty-developed map for signature assignments and reflection. The rubrics in this document will be used to assess random samples of graduating student ePortfolios. Therefore, the General Education Committee encourages faculty to use these rubrics when they grade student work and make students aware of the standards by which signature assignments will be judged.

- Within the boundaries of this guide, faculty develop their own mix of assignments and reflection prompts that best fits their course. Note that a key decision for faculty to make is whether having students document one or two or even three signature assignments in their ePortfolio is the best way to meet the assessment expectations for this designation.

- When designing courses and aligning learning outcomes with classroom activities and assignments, remember to balance two key features: Your course should be an engaging and memorable experience for students and it should contribute to assessment of the General Education program by focusing our attention to the pages of student ePortfolios most likely to have evidence for specific learning outcomes.

## Effective Communication

Signature assignments **must** ask students to
- Successfully execute genre conventions in their work.
- Develop appropriate, relevant, and compelling content in their work.
- Adapt communication for context, purpose, and audience.

### Genre Conventions Rubric* (from the AAC&U's VALUE Rubric for Written Communication)

|  | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Students follow the expectations for writing in particular forms and/or academic fields.* | Work demonstrates detailed attention to and successful execution of conventions particular to a specific discipline and/or writing task (s) including organization, content, presentation, formatting, and stylistic choices | Work demonstrates consistent use of conventions particular to a specific discipline and/or writing task(s), including organization, content, presentation, and stylistic choices | Work follows expectations appropriate to a specific discipline and/or writing task(s) for basic organization, content, and presentation | Work attempts to use a consistent system for basic organization |

*The General Education Committee recommends that faculty be specific with students regarding the genre(s) expected in the assignment and work with the WAC Director on a specific grading rubric for genre conventions matching their assignments.

### Content Development Rubric

|  | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Students develop appropriate, relevant, and compelling content in their work.* | Work correctly employs all or nearly all the major concepts, persons, or events needed to give a complete treatment of the topic. | Work correctly employs most of the major concepts, persons, or events needed to give a complete treatment of the topic, or employs them, but with some errors in their application to the topic. | Work omits some major concepts, persons or events needed to give a complete treatment of the topic, and/or makes significant errors in their application to the topic. | Work rarely or never uses major concepts, persons, or events, and/or makes significant errors in their application to the topic. |

**Communication Adaptation Rubric**

|  | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Students adapt communication for context, purpose, and audience.* | Work is superbly adapted for a particular context, purpose, or audience | Work is clearly tailored to speak to a particular context, purpose, or audience, although omissions, errors, or choices on the part of the student undercut the adaptation in some respect. | Work attempts to address itself to a particular context, purpose, or audience, but does not do so effectively. | Work appears not to be addressing a particular context, purpose, or audience. |

## Quantitative Literacy

Signature assignments **must** ask students to
- Accurately explain and interpret mathematical processes.
- Successfully perform attempted calculations.
- Effectively use quantitative information in connection with the argument or purpose of their work.

**Quantitative Interpretation Rubric** (From the AAC&U Quantitative Literacy VALUE Rubric)

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Students are able to explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words)* | Work provides accurate explanations of information presented in mathematical forms. Makes appropriate inferences based on that information. For example, accurately explains the trend data shown in a graph and makes reasonable predictions regarding what the data suggest about future events. | Work provides accurate explanations of information presented in mathematical forms. For instance, accurately explains the trend data shown in a graph. | Work provides somewhat accurate explanations of information presented in mathematical forms, but occasionally makes minor errors related to computations or units. For instance, accurately explains trend data shown in a graph, but may miscalculate the slope of the trend line. | Work attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means. For example, attempts to explain the trend data shown in a graph, but will frequently misinterpret the nature of that trend, perhaps by confusing positive and negative trends. |

**Quantitative Calculations Rubric** (From the AAC&U Quantitative Literacy VALUE Rubric)

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Students perform accurate calculations.* | Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. Calculations are also presented elegantly (clearly, concisely, etc.) | Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. | Calculations attempted are either unsuccessful or represent only a portion of the calculations required to comprehensively solve the problem. | Calculations are attempted but are both unsuccessful and are not comprehensive. |

**Use of Quantitative Information Rubric** (From the AAC&U Quantitative Literacy VALUE Rubric)

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Students use quantitative evidence in support of the argument or purpose of the work.* | Work uses quantitative information in connection with the argument or purpose of the work, presents it in an effective format, and explicates it with consistently high quality. | Work uses quantitative information in connection with the argument or purpose of the work, though data may be presented in a less than completely effective format or some parts of the explication may be uneven. | Work uses quantitative information, but does not effectively connect it to the argument or purpose of the work. | Work presents an argument for which quantitative evidence is pertinent, but does not provide adequate explicit numerical support. (May use quasi-quantitative words such as "many," "few," "increasing," "small," and the like in place of actual quantities.) |

## Critical Thinking

Signature assignments **must** ask students to demonstrate scientific reasoning processes to draw conclusions.

**Scientific Reasoning Rubric** (from the WICHE Passport Learning Outcomes)

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Students demonstrate scientific reasoning processes to draw conclusions.* | Conclusions are clearly based on careful observation, marshalling of data or information, and/or the use of qualitative or quantitative analysis. | Conclusions are based on observation, marshalling of data or information, and/or the use of qualitative or quantitative analysis. | Conclusions are minimally based on observation, data or information, and/or the use of qualitative or quantitative analysis. | Conclusions not supported by observation, data or information, or analysis. |

## Information Literacy

Signature assignments **must** ask students to create work with a clear purpose.

**Information Literacy Rubric for AI Courses** (Developed from the ACRL Framework for Information Literacy for Higher Education)

|  | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Student will state the intended audience/purpose of their research* | Work identifies audience or purpose in an academic or professional manner. | Work clearly identifies audience or purpose. | Work minimally identifies audience or purpose. | Work does not have an audience or purpose. |

## Civic Literacy

Signature assignments **must** ask students to do **one** of the following:
- Think critically about—and weigh evidence surrounding—issues important to local or national communities.
- Think critically about—and weigh evidence surrounding—issues in a global or international context.

**Civic Literacy Rubric—Evidence Domestic**

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Students think critically about—and weigh evidence surrounding—issues important to local or national communities.* | Work contains ample evidence pertaining to the issue, and the evidence is masterfully used to describe the issue or support a position. | Work contains sufficient evidence pertaining to the issue, and the evidence is well used to describe the issue or support a position. | Work has little evidence, or the evidence is not well suited to describe the issue or support a position. | Work does not contain evidence pertaining to the issue or supporting a position. |

**Civic Literacy Rubric—Evidence Global**

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Students think critically about—and weigh evidence surrounding—issues in a global or international context.* | Work contains ample evidence pertaining to the issue, and the evidence is masterfully used to describe the issue or support a position. | Work contains sufficient evidence pertaining to the issue, and the evidence is well used to describe the issue or support a position. | Work has little evidence, or the evidence is not well suited to describe the issue or support a position. | Work does not contain evidence pertaining to the issue or supporting a position. |

**Reflection**

The reflection in student ePortfolios **must address at least one of the following**:
- Links between coursework and its broader applicability outside of school
- Connections between coursework and their personal lives

An ideal way to meet this requirement is to provide students two reflection prompts—each of which address one of the bulleted items above—from which they can choose.

**Reflection Rubric for Broader Applicability**

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Students make links between coursework and its broader applicability outside of school.* | Reflection makes engaging, detailed, and/or sophisticated links between coursework and its broader applicability outside of school. | Reflection makes connections between coursework and its broader applicability outside of school. | Reflection attempts to make links the world outside of school, but they are not compelling, lack detail, and/or are unsophisticated. | Reflection is simplistic and/or contains no detail. |

**Reflection Rubric for Personal Life Connection**

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| *Students make connections between coursework and their personal lives* | Reflection makes engaging, detailed, and/or sophisticated links between coursework and the student's life. | Reflection makes connections between coursework and the student's life. | Reflection attempts to make connections between coursework and the student's life, but they are not compelling, lack detail, and/or are unsophisticated. | Reflection is simplistic and/or contains no detail. |

**<u>Creative Expression</u>**
Signature assignments in QL/QS courses do not need to address creative expression.

**<u>Computer Literacy</u>**
Signature assignments in QL/QS courses do not need to address computer literacy.

**<u>Work w/Others Professionally/Constructively</u>**
Signature assignments in QL/QS courses do not need to address working with others professionally and constructively. This learning outcome will not be addressed in the annual ePortfolio assessment of the General Education program. Instead, we will be working individually with faculty who have collaborative group assignments in their courses to embed grading rubrics for those assignments that indicate students can:
- Contribute to team meetings/activities
- Contribute to group projects outside of team meetings
- Foster constructive team climate