New Core Foundational Competency in Quantitative Analysis (QA)

Rubric for Evaluating Potential QA Courses

The New Core Subcommittee on QA has grouped the requirements for QA courses into three categories: Foundational Requirements, Quantitative Analysis Requirements, and Technological/Information Literacy Requirements.

The Subcommittee on QA will seek indicators of how the QA requirements will be satisfied as it considers whether to recommend QA approval of a course. Indicators of how each requirement might be satisfied in a given course are listed below. The lists of indicators are not necessarily exhaustive.

QA courses must satisfy all of the requirements, and must be submitted to a regular assessment program in order to monitor whether the requirements continue to be satisfied over time.

Page numbers refer to the APTF Curriculum Report.

Foundational Requirements

1. "... should be introduced ... during their first year ..." (p. 12)

   Indicators
   + Minimal prerequisites for the QA course
   + Should be a low-numbered course
   + Should serve as a foundational prerequisite for other courses or curriculum content

2. "... include discussion of ethical argument and ethical use of data." (p. 12)

   Indicators
   + Syllabus-level or assignment-level explicit mention of ethical argument and ethical use of data.
   + Bibliographic references in cases when the ethics content is not included in a primary textbook.

Quantitative Analysis Requirements

3. "students ... should develop sufficient analytical skills to find and pose precise questions that can be appropriately analyzed by quantitative methods; draw inference from data; represent data; think critically about quantitative statements; and recognize sources of error." (p. 13, emphasis added)
Indicators
+ Syllabus-level and assignment-level QA content, including:
  Types of **questions** to be found and posed;
  Specific methods for **drawing inference** from data, such as estimation and testing hypotheses;
  Analytical tools for **representing data**, such as summary statistics, graphical displays, and mathematical models;
  Scenarios for **thinking critically** about quantitative statements, including selecting appropriate methods, evaluating the sensibility of calculations and conclusions, consideration of diagnostics, and evaluating published articles and reports that include quantitative information.
  **Sources of error** encountered in context, such as sampling error, nonresponse, and bias.

4. "… closely tied to a context, …" (p. 13)

Indicators
+ Bulletin-level course description identification of the context to which QA will be tied.

5. Three credits (p. 11)

Indicators
+ The equivalent of three credits of QA content explicitly represented in the Bulletin-level course description and at the syllabus level.

**Technological/Information Literacy Requirement**

6. "… embedded …" (p. 11)

Indicators
+ Syllabus-level identification of appropriate analysis technology
+ Syllabus-level or assignment-level description of data management content