Brooklyn College School of Business

All School Meeting,

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Assurance of Learning

Quantitative Reasoning Sub-Committee

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Our Charge

Goal 1

Develop a conceptual framework of "quantitative reasoning" (QR) and provide a rigorous definition of it from that perspective.

- From this, define our goal in teaching quantitative reasoning.
- What do we expect all business, accounting, and economics undergraduate students to do be able to do if we label them as "quantitatively competent?

Goal 2

Where in the core business curriculum should we place quantitative components or modules?

- Obviously, we have required courses in Math and Stats, but which of the other core courses (i.e., Intro to Management, Marketing, Operations Management, Accounting, Finance, and the capstone courses) could have assignments added that would apply the concepts to business context)

Goal 3

Consider how we might operationalize this in specific core courses. What assignments might create artifacts that demonstrate students have developed knowledge and skill in this area?

- Should we rely on standardized tests?
- Could we use written essay as a supplement to see if students can explain numerical data in tables or graphs. Should we?

Goal 1: Framework of Quantitative Reasoning

Goals / Dimensions	ADVANCED	PROFICIENT	EMERGENT	NOT PROFICIENT
ANALYSIS : ability to identify, apply, and utilize context-relevant mathematical and statistical concepts, techniques, and tools.	Can skillfully (at least 90% of the time) identify, apply, and utilize context-relevant mathematical and statistical concepts, techniques, and tools.	Can appropriately (80% - 89% of the time) identify, apply, and utilize context-relevant mathematical and statistical concepts, techniques, and tools.	Can appropriately (70% - 79% of the time) identify, apply, and utilize context-relevant mathematical and statistical concepts, techniques, and tools.	Can rarely or sometimes (less than 70% of the time) identify, apply, and utilize context-relevant mathematical and statistical concepts, techniques, and tools.
INTERPRETATION: ability to make sound judgments and derive meaningful conclusions and recommendations based on quantitative evidence.	Can usually (at least 90% of the time) make sound judgments and derive meaningful conclusions and recommendations based on quantitative evidence.	Can frequently (80% - 89% of the time) make sound judgments and derive meaningful conclusions and recommendations based on quantitative evidence.	Can frequently (70% - 79% of the time) make sound judgments and derive meaningful conclusions and recommendations based on quantitative evidence.	Can rarely or sometimes (less than 70% of the time) make sound judgments and derive meaningful conclusions and recommendations based on quantitative evidence
PRESENTATION: ability to introduce the main highlights; communicate concepts using appropriate verbal/graphical/numeric representation; and conclude with main findings	Can usually (at least 90% of the time) introduce the main highlights; communicate concepts articulately using appropriate verbal/graphical/numeric representation; conclude with main findings and relate them to real world applications; and cite sources appropriately and using proper format	Can frequently (80-89% of the time) introduce the highlights; communicate most concepts articulately using appropriate verbal/graphical/numeric representation; conclude with main findings and relate at least some to real world applications; and cite sources appropriately and using proper format	Can frequently (70-79% of the time) introduce the highlights; communicate most concepts articulately using appropriate verbal/graphical/numeric representation; conclude with main findings and relate at least some to real world applications; and cite sources appropriately and using proper format	Can rarely or sometimes (less than 70% of the time) introduce main highlights; communicate concepts articulately using appropriate verbal/graphical/numeric representation; conclude with main findings and relate at least some to real world applications; and cite sources appropriately and using proper format

Proposed Learning Goals (from framework)

Analysis • ability to identify, apply, and utilize context-relevant mathematical and statistical concepts, techniques, and tools.
Interpretation ▪ ability to make sound judgments and derive meaningful conclusions/recommendations based on quantitative evidence.
Presentation ▪ ability to introduce the main highlights; ▪ communicate concepts using appropriate verbal/graphical/numeric representation; ▪ conclude with main findings and relate them to real world applications; ▪ cite sources appropriately and using proper format

Goal 2

Identify *foundation* and *core* business courses for learning activities that accomplish quantitative reasoning learning goals

- ***Finance & Business Management***
  - Math, Statistics, Corporate Finance, Operations Management
- **Accounting**
  - Introductory Accounting
- **Economics**
  - Macro, Micro, Advanced Business & Economic Statistics (for Econ majors only), Fundamental Methods of Mathematical Economics

Future Directions

- Consider incorporating QR components in all business core courses (except Business Law) and in capstone courses

Goal 3

Consider how we might operationalize this in specific core courses. What assignments might create artifacts that demonstrate students have developed knowledge and skill in this area?

- Summative ***college-wide Quantitative Reasoning assessment*** in the capstone course for each major
- Format could be a ***standardized test*** with a multiple choice component having single/multiple-response *questions* and *data interpretation section*.
- ***Data interpretation*** section - students can be asked to write a brief essay to describe and interpret graphs and tables.
- Test can be easily be designed and administered through the ***Blackboard***.
- To avoid redundancy, the test could be embedded as a ***course requirement*** in each capstone.

References

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THANK YOU