

Submission of a Course for Q Designation

1. Course name and number:

2. Instructor(s):

3. Projected frequency of offerings and enrollments: Please fill in the option below that best describes your current plans for the proposed Q-course:
 - a.) The course will be offered **every year**. There will be _____ fall sections, each section capped at _____ students, and _____ spring sections, each capped at _____ students.

 - b.) The course will be offered **alternate years**. There will be _____ fall sections, each section capped at _____ students, and _____ spring sections, each capped at _____ students.

 - c.) The course will be offered **on a different schedule**. (For example, based on content, a topics course is proposed as a Q course for one specific semester.) Please explain and indicate the number of sections to be offered and the maximum enrollments in each section.

4. As part of this submission, please attach a *detailed syllabus* and a *major exam or assignment which reflect the quantitative nature of the course*. Feel free to provide additional materials that may help the committee decide if the course should be given a Q designation. It is important that the Q subcommittee be given adequate information to determine that at least 50% of the course is quantitative in nature and that the quantitative material is integrated throughout the course.

5. If the course has been taught before, do the syllabus and corroborative materials from item 4 represent substantive changes in the course from previous offerings (e.g. changes in lecture content or changes in the nature of assignments and exams) intended to make the course more clearly meet the requirements for a Q course? If so, please briefly summarize these changes.

6. *Based on the criteria for Q courses as printed in the proposal passed by the Faculty*, please discuss below, and/or on a separate page, why this course should be designated a Q course. Please include in your discussion an estimate of the fraction of the course to be devoted to quantitative reasoning. *Note:* the Q subcommittee of APC will follow closely the criteria as discussed in the proposal. For your convenience, a copy of the criteria is appended to this form.

Criteria for Q courses

Courses to be designated as Q courses should address to a significant extent the objectives listed in the faculty-approved Q proposal. **In general, a Q course should**

- A.) Involve regular assignments in which students spend time developing and practicing quantitative skills.**
- B.) Devote at least half the course to quantitative reasoning and the quantitative material should be integrated throughout the course.**

Such courses must steer students away from any "plug and chug" mentality they may have developed in the past with regard to quantitative problems and must instead foster reasoning based on context and on formal, analytical thought: a course in which students simply plug numbers in to formulae and record the resulting numbers or in which students simply enter data into unexplained, unexamined computer software and record the output would not meet the criteria for a Q course.

To be designated with a "Q," a course must clearly meet no fewer than three of the following criteria:

1. The course requires students to interpret formal models by use of equations and graphs and to make inferences based on these models.
2. The course requires students to represent quantitative information mathematically, symbolically, visually, numerically, and verbally.
3. The course requires the use of arithmetical, algebraic, geometric, statistical, logical, and/or algorithmic methods to solve problems.
4. The course requires students to estimate and check answers to mathematical problems in order to determine reasonableness, identify alternatives, and select optimal results.
5. The course requires students to recognize that mathematical, statistical, logical, and algorithmic methods have limitations.