Module I: Quantitative Reasoning
Proposal to Create a New Core Course

Instructions: Use this form to propose a Quantitative Reasoning University Core course. Forms for each of the other Core courses can be found on the Core website.
Please provide the information requested in each section and insert a provisional syllabus that includes, at minimum, the following information: the learning outcomes, possible texts or types of texts that will be used, types of assignments and their nature/size/length, and a thematic outline describing how the course progresses through the quarter. Submit your proposal materials through the normal process for course review in your department and college/school, using the deadlines set by your college/school curriculum committees. In general, each faculty member who plans on teaching a customized version of a Core class should submit a separate proposal. Identical courses that will be taught by multiple faculty members may be included on a single proposal, but in those cases department chairs should address the issue of faculty participation in Section V.

Section I: General Information

Faculty:	SU email:
College/School:	Department:
Course Title:	
Special facilities needed: ☐ Laboratory ☐ Studio ☐ Computer Lab ☐ Other:	
Will this course require any new library resources or support from library staff? ☐ Yes ☐ No Will this course involve: ☐ Study abroad ☐ Immersion/Fieldwork ☐ Service learning Please explain any special needs for this course (including Library resources) in Section VI of this form.	

Section II: Approvals

All Core courses must be approved by 1) the chair of the faculty member's home department, 2) the dean and/or chair of the faculty member's college curriculum committee, 3) the Core Curriculum Committee, and 4) the Director of the University Core. Approvals should proceed in the order of signatures on this form.

1. **Department Chair:** (see Section V)

2. **Chair, College/School Curriculum Committee:**

3. **Dean:**

4. **Chair, Core Curriculum Committee:**

5. **Director, University Core Curriculum:**

The questions on this proposal form reflect the specific requirements for this course as explained on the course guidelines document. Please refer to that document for the details (a copy is attached at the end of this form for your convenience).

Please note that the course syllabus, required for this proposal, should also address these learning objectives.

Section III: Core Requirements

Required Learning Objectives: Each Core course is responsible for helping students achieve the learning objectives assigned to that Core category. Each of the assigned learning objectives for this course is listed below. Please explain how the course is designed to achieve each of these objectives. Your explanations need not be long, but should be complete enough so that the Core Curriculum Committee can understand how well the objectives are addressed in the course. Please note that the course syllabus, required for this proposal, should also address these learning objectives.

1. **This course is the primary place in the Core where students learn mathematical principles and skills. Students should learn to use basic mathematical principles to understand quantitative information; make sound mathematical arguments; interpret, evaluate, and create probability-based claims; read and create graphs and tables; and be able to apply their mathematical knowledge in other courses.**

2. By focusing on the use of mathematical reasoning, students will better understand how mathematicians construct arguments and solve problems.

3. Students will improve their academic writing skills in this course.

Essential Pedagogy: Please provide brief explanations of how this course incorporates the essential pedagogy identified in the Core course guidelines document (listed below).

1. Constructing mathematical arguments: Students will practice using quantitative data to support claims and develop arguments, and also learn to evaluate the strength of the arguments of others based on mathematical information.

2. Writing assignments should be included in all sections of this course, with instructor feedback on content, writing mechanics, and style.

Common Learning Objectives: All Core courses share a common responsibility for helping students achieve the objectives listed below (see *Common Learning Objectives in the Core* for more information). However, it is understood that different courses will emphasize some objectives more than others. Please identify the common learning objectives emphasized in your course by checking the boxes below.

- ☐ **1. Where relevant, courses should help students understand how the field and subject matter being studied are related to or reflect the Jesuit intellectual tradition. In particular, Core courses should help students reflect on questions of meaning, spirituality, ethics, values, and justice.**
- ☐ **2. Students should develop analytic thinking and reasoning skills in all Core courses, although the forms those skills take vary across disciplines.**
- ☐ **3. Students should come to recognize and appreciate complexity and ambiguity, as well as the limitations of knowledge and imperfections in understanding of the subjects being studied.**
- ☐ **4. Study in a variety of disciplines will assist students in understanding and valuing the wide range of academic insights and perspectives.**
- ☐ **5. All courses should help students develop as writers of clear, effective, and elegant prose, including the ability to adapt their writing to different situations and content.**
- ☐ **6. Class discussions, in all their forms, help students learn to engage in effective and responsible discussion and debate.**
- ☐ **7. All faculty are encouraged to help students understand how their studies prepare them to meaningfully engage important issues and become responsible global citizens.**

Insert any necessary explanation here. Otherwise, leave blank.

Section IV: Instructor Information

1. Submitting Faculty: Qualified individuals from any department are welcome to submit Core course proposals in all categories. Please briefly describe the academic background and experience that prepares you to teach this course. Note: In most cases, this should be very simple (e.g. a directly relevant terminal degree, teaching experience in similar courses, etc.), but if additional information regarding your academic preparation for this course is necessary, please include that here.

2. Additional Faculty: If your department's plans include faculty members other than the individual listed on this form being scheduled to teach this specific course, please list their names here with very brief explanations of their relevant preparation. Any faculty member teaching this course should have qualifications directly comparable to those of the proposing faculty member. If the versions of the course they will be teaching are expected to vary in any significant way (i.e. not using the same syllabus), each faculty member should submit a separate proposal. As new faculty members join the university and are assigned to this course, their faculty information should be submitted to the Core as soon as possible.

Section V: Other Information

1. Short title: To be used in published information and to identify your course in SUOnline. 30 characters maximum.

2. Short description: To be published in lists of available Core courses and included in the course description on SUOnline to assist students in selecting courses. Approx. 50-75 words.

3. Special Course Requirements: If you checked any of the boxes on page 1 regarding library resources, facility requirements, or other special elements in the course, or if there are other unique features that should be considered in planning and supporting this course (e.g. team teaching, special scheduling needs, etc.), please explain.

4. Other Information: Please provide any additional information you feel necessary or helpful for the review of this course.

Thank you for submitting a proposal for this Core course! Please remember that review of this proposal is a multi-step process, proceeding through department, college/school, and Core stages. The University Core will notify both the faculty members and their departments when courses are approved by the Core Curriculum Committee.

Syllabus: A syllabus is a required part of this proposal form. There is space at the end of the form (page 9) for you to paste the syllabus into this document.

Submissions: Please submit this form through your college or school's normal submission process for new course proposals. If you are submitting this form electronically, please save it with a new name that includes the name of the course category as well as your last name (e.g. "Quant Reason - Jones").

The Core guidelines document for this course is included here for your reference. Some questions in this form refer to specific requirements listed in this document.

UCOR 1200: Quantitative Reasoning
Course Description and Guidelines

Description: Courses in quantitative reasoning appropriate to students' major field. Essential goals include developing basic or more advanced quantitative reasoning skills (including the ability to manipulate expressions), evaluating probabilities, creating and interpreting graphs, using mathematics to solve problems, and making arguments with numbers. The requirement may also be fulfilled by MATH 118 or above.

Notes and Guidelines:

1. These courses will come in two forms: 1) Most five credit MATH courses numbered 118 or above will fulfill this requirement. Students who need advanced mathematical skills for their majors will take these MATH courses as appropriate for their program of studies. 2) Students who do not need advanced mathematical skills for their majors may take either a traditional MATH course numbered 118 or above (depending on placement) or they may take a section of UCOR 1200.
2. The UCOR sections of these courses are intended to be stand-alone courses in quantitative reasoning, not part of a sequential curriculum in Mathematics. Therefore, these courses focus on teaching mathematical knowledge and skills that are widely applicable and useful for students who are not in mathematically-intensive fields. For most students, this will be the only Mathematics course they will take in college, although students will be encouraged to use what they have learned in this course in other Core courses.
3. UCOR sections of this course may have a variety of themes and foci, using the study of the theme or focus to explore and teach quantitative reasoning skills and knowledge. The theme or focus will be indicated in the title. Faculty are encouraged to develop specialized sections around interesting themes that will engage students in the study of quantitative reasoning.

Essential Pedagogy:

1. Constructing mathematical arguments: Students will practice using quantitative data to support claims and develop arguments, and also learn to evaluate the strength of the arguments of others based on mathematical information. Students should learn to create and use graphs to analyze and explain quantitative data, and learn to use mathematical structures to describe relationships and principles.
2. Writing assignments should be included in all sections of this course, with instructor feedback on content, writing mechanics, and style. An explicit insistence on effective writing (including both mechanics and content) should be a common hallmark of all Module I courses.

Learning Objectives: Helping students meet the Core Learning Objectives is a collaborative effort.

1. All Core courses share a common responsibility for helping students achieve some objectives, and faculty should review the common objectives document (see *Common Learning Objectives in the Core*) and consider how those objectives can be reinforced and developed in this specific course.
2. In addition, each course has specific objectives for which it has special responsibilities. The table on the back of this page describes the ways in which this course has primary responsibility for one or more of the Core Learning Objectives. These objectives must be explicitly addressed in all sections of this course.

Quantitative Reasoning: Learning Objectives	
Core Learning Objectives	**How objectives should be addressed within this course** (bullets are the relevant language from the Core Learning Objectives)
Jesuit, Catholic Intellectual Traditions: Through knowledge of Jesuit, Catholic intellectual traditions and understanding of diverse religious traditions, students will reflect on questions of meaning, spirituality, ethics, values, and justice.	This course is not required to specifically address this objective, although faculty may choose to do so.
Disciplinary Knowledge and Integrative Learning: By studying humanities, social sciences, natural sciences, mathematics, and fine arts, students will learn how different disciplines pursue knowledge. They will learn disciplinary ways of posing questions, gathering and analyzing evidence, developing cogent arguments, and engaging issues related to nature, culture, and society. Students will also learn to integrate knowledge and explore their intellectual passions.	1. **This course is the primary place in the Core where students learn mathematical principles and skills.** This course is the only university-level course in mathematics and quantitative reasoning for most students. Students should learn to use basic mathematical principles to understand quantitative information; make sound mathematical arguments; interpret, evaluate, and create probability-based claims; read and create graphs and tables; and be able to apply their mathematical knowledge in other courses. • Quantitative literacy • Information literacy (understanding, analyzing, and using quantitative information) 2. **By focusing on the use of mathematical reasoning, students will better understand how mathematicians construct arguments and solve problems.** This course is part of a suite of courses that help students understand the content and methods of various disciplines. • Exposure to content and approaches to inquiry of different disciplines (focus on Mathematics in this course) • Ability to apply disciplinary knowledge and methods to answer questions and solve problems (using mathematics to solve problems; students should be able to use mathematical knowledge to engage challenging issues, including the ability to understand and evaluate quantitative claims they will encounter in their professional, civic, and personal lives.) • Appreciation of how knowledge is discovered and constructed within and across disciplines (focus on Mathematics in this course)
Communication: Students will be able to communicate effectively in a variety of genres and for different audiences and purposes through writing, speaking, and visual expression.	3. **Students will improve their academic writing skills in this course.** While the primary focus of this course is teaching quantitative reasoning skills and mathematical knowledge, improving students' writing skills is a common objective for all Core courses, especially in Module I. Writing assignments in this course should focus on writing genres and subjects relevant to the section theme and mathematical studies. • Write in multiple genres, including persuasion, argumentation, and reflection (focus on genres appropriate to Mathematics in this section) • Ability to communicate in different rhetorical contexts, including in online environments (as appropriate) • Ability to suit form of communication to content
Global Engagement: Students will examine their roles in local, regional, national, and transnational cultures and communities. Students will be prepared to act, from an informed perspective, on local and global issues that surround and affect them.	This course is not required to specifically address this objective, although faculty may choose to do so.

Syllabus: A syllabus is a required part of this proposal form. Please insert your syllabus here and be sure to include the appropriate Core Learning Outcomes in the syllabus.