



**Module I: Inquiry Seminar in the Natural Sciences
Proposal to Create a New Core Course**

Instructions: Use this form to propose an Inquiry Seminar in the Natural Science 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: <input type="checkbox"/> Laboratory <input type="checkbox"/> Studio <input type="checkbox"/> Computer Lab <input type="checkbox"/> Other:	
Will this course require any new library resources or support from library staff? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Will this course involve: <input type="checkbox"/> Study abroad <input type="checkbox"/> Immersion/Fieldwork <input type="checkbox"/> 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).

Section III: Course Information Please provide the following general information about the proposed course. Make reference to the material in the syllabus as appropriate, but be sure to directly address all of the questions. This information will be used by the departmental and college/school curriculum committees, as well as the Core Curriculum Committee.

1. Motivating Question: What disciplinary question will serve as the focus for inquiry and study in this course?

Section IV: 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. **All sections of this course introduce students to subjects, contents, methods, and perspectives of Natural Science disciplines.**

2. **Students' mathematical and quantitative reasoning skills are strengthened through engaging students in careful measurement and analysis of numerical data.**

3. **Together with several other courses that explore different disciplines, this course helps students understand and value the breadth and diversity of academic inquiry.**

4. **All freshman-level inquiry seminars help students develop as thoughtful writers of effective academic prose.**

5. **The oral presentation incorporated in this course helps students develop confidence and basic skills in public speaking.**

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

1. These courses all include substantial laboratory and/or scientific field research, and ask students to use results from those experiences to make and support knowledge claims.

2. These courses are all writing intensive, with multiple writing assignments, with options for revision in at least one assignment.

3. An oral presentation assignment (such as students presenting their research findings) will be included in this course.

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 information here. Otherwise, leave blank.

Section V: 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 VI: 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. **Is prior college-level mathematics essential to the success of students in this course? If so, please explain. UCOR 1200 can be set as a prerequisite if necessary.**
- 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 10) 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. "Acad Writing - 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 18X0: Inquiry Seminar in the Natural Sciences

Course Description and Guidelines

Description: Courses that introduce students to the subjects and methods of inquiry of the natural sciences by engaging in focused study of one or more particularly important questions arising from a natural science discipline. These courses introduce students to key concepts, knowledge, and principles of the relevant discipline as they relate to the questions being studied in the individual section. They are not intended to be survey courses or broad introductions to the discipline, but should be content-rich, with the content revolving around and connected to the central questions being studied. These courses engage students in studying questions about the physical/biological universe. All sections incorporate the direct examination of natural phenomena in either laboratory or field settings; use observation to develop and evaluate principles and hypotheses; and explore how knowledge of key scientific principles can be used to understand and interpret observations.

Notes and Guidelines:

1. Each section of this course focuses on an important question or issue studied in a natural science discipline. Faculty members are encouraged to develop courses reflecting their individual scholarly interests and areas of expertise, translating those interests into challenging freshman-level courses that not only teach students disciplinary content relevant to the issue being studied but also engage students in doing direct study of the issue using appropriate disciplinary methods. The specific course question or topic will be reflected in the section title.
2. This course is part of a suite of inquiry seminars and other courses that introduce students to the various ways scholars explore and pursue knowledge. Collectively, these courses provide both breadth and a greater understanding of the diversity of scholarly questions, approaches, and standards. Faculty teaching these courses should be mindful of both the course specific and collective goals and strive to help their students understand the individual discipline being studied as well as how that discipline is part of a larger range of approaches to knowledge.
3. All natural science inquiry seminars share and help students understand some common qualities: methodologically, each teaches students to understand and use the scientific method. While there are differences between the scientific method as used in different natural science disciplines, common features of this method include the development of questions or hypotheses, the use of experimentation and/or careful measurement, the systematic use of comparison or controls, and the rigorous interpretation of results. A common feature is the central role of observation and measurement, almost always requiring the use of quantitative treatment of data. Natural science inquiry seminars also share a broad common subject matter: the goal of objectively understanding natural phenomena and/or tangible structures or processes, and helping students distinguish claims of scientific knowledge from opinions regarding scientific matters.

Essential Pedagogy

1. These courses all include substantial laboratory and/or scientific field research, and ask students to use results from those experiences to make and support knowledge claims.
2. These courses are all writing intensive, with multiple writing assignments, with options for revision in at least one assignment. Students will receive 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.
3. An oral presentation assignment (such as students presenting their research findings) will be included in this course.

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.

Inquiry Seminars in the Natural Sciences: Learning Objectives	
Core Learning Objectives	How objectives should be addressed within this course (bullets are the relevant language from the Core Learning Objectives)
<p>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.</p>	<p>This course is not required to specifically address this objective, although faculty may choose to do so.</p>
<p>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.</p>	<ol style="list-style-type: none"> 1. All sections of this course introduce students to subjects, contents, methods, and perspectives of Natural Science disciplines. Through the focused exploration of a specific question in a natural science discipline (including directly investigating questions using appropriate laboratory or field research methods) students learn how scholars in that field think, some of the key knowledge and insights that inform the perspective of the discipline, and how the discipline pursues knowledge. <ul style="list-style-type: none"> • Engage in evidence-based reasoning and inquiry • Understand content and approaches to inquiry of the discipline • Ability to apply disciplinary knowledge and methods to answer questions and solve problems • Information literacy (introducing students to primary literature in the field and teaching them to use those findings in supporting arguments) 2. Students' mathematical and quantitative reasoning skills are strengthened through engaging students in careful measurement and analysis of numerical data. <ul style="list-style-type: none"> • Quantitative reasoning 3. Together with several other courses that explore different disciplines, this course helps students understand and value the breadth and diversity of academic inquiry. <ul style="list-style-type: none"> • Appreciation of how knowledge is discovered and constructed within and across disciplines
<p>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.</p>	<ol style="list-style-type: none"> 4. All freshman-level inquiry seminars help students develop as thoughtful writers of effective academic prose. Writing assignments in each course are disciplinary-appropriate, and instruction and feedback in all sections should emphasize transferable fundamental academic writing skills as well as discipline-specific genres. <ul style="list-style-type: none"> • Ability to write academic prose in appropriate academic English and appropriate format with clarity and elegance 5. The oral presentation incorporated in this course helps students develop confidence and basic skills in public speaking. Oral presentation assignments may come in a variety of forms, and should be integrated into the course. Faculty are encouraged to use the presentations as a venue for students to share the results of their research on the course question. <ul style="list-style-type: none"> • Ability to prepare and deliver effective oral presentations
<p>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.</p>	<p>This course is not required to specifically address this objective, although faculty may choose to do so.</p>

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.