**Curriculum Proposal – Mathematical Approaches Courses**

Please submit the following three documents to the Curriculum Committee. Providing all of the information requested below, in order, will expedite the course’s review.

1. A 2-page (approx.) cover letter that explains how the course fulfills the rubric of the Mathematical Approaches core requirement. Where there is apparent overlap in content with courses in other departments, explain the distinctiveness of and the need for the proposed course.

* The cover letter needs to address how the course fulfills the rubric of the Core category and/or KNOW requirement.
* The Mathematical Approaches core rubric consists of “Learning Objectives” and “Guidelines.” As highlighted below in the excerpt from Section IV of the Curriculum Statement, the Curriculum Committee evaluates and approves Core courses based on their adherence to the Guidelines, not the Learning Objectives. The Curriculum Committee’s review of the proposed course is greatly facilitated if each Guideline from the relevant rubric is systematically addressed in the cover letter.

From Section IV of the Curriculum Statement:

*Each core rubric consists of two sections, "Guidelines" and "Learning Objectives." Faculty have developed the Guidelines section to achieve the particular Learning Objectives of the core rubric and, more broadly, the educational goals of the University. The Guidelines are intended to be used by faculty to develop core courses and by the Curriculum Committee to review core courses. The Learning Objectives are intended to provide a clear statement to students of what they can expect to learn from any given core area.* ***Although the Learning Objectives will assist the faculty in developing Core courses and in meeting the spirit of the Core area, the Curriculum Committee will evaluate and approve Core courses based on their adherence to the Guidelines, not the Learning Objectives.***

1. A completed “Curriculum Proposal Form,” found at the end of this document. Below are some instructions for the form:

* **Cross-listing:** Cross-listing requires the course to carry the prefix and number from another department or program. Indicate any department or program in which the course is to be cross-listed, and specify the cross-listed department/program and number. Please provide a rationale for cross-listing the course. Courses are very rarely cross-listed.
* **Scheduling:** Indicate the frequency with which the department anticipates that the course will be offered, and identify courses intended only for summer or otherwise planned for special scheduling. If a course is to be offered only once, please indicate the term.
* **Prerequisites:** If “permission of the instructor” is required for students to enroll, enter this requirement as a prerequisite, and state specifically what academically germane criteria will be used to permit enrollment.
* **Course Number:** The course number should reflect the level of students for whom the course has primarily been designed. This does not prevent either more advanced students or qualified lower-level students from enrolling.
* **Grading:** It is assumed that the standard grading pattern will be employed in the course proposed: letter grade or P/F at the student’s option. If a mandatory P/F system will be used, full justification must be provided. In general, only such activities as clinical experience or student teaching, where letter grades are impractical, should employ mandatory P/F grading. If In-Progress (IP) is to be used, a full explanation must be provided. IP grading should be used only where completion of the course requirements is designed to extend beyond the end of the semester. It should not be used interchangeably with the Incomplete grade.

1. A syllabus for the course that includes:

* Clear enumeration of student learning outcomes
* Statement that the course counts towards the Mathematical Approaches core requirement
* Outline of content and schedule of coursework
* Student requirements (reading, assignments, written work, projects, etc.), including brief descriptions of major assignments and projects
* Evaluation criteria and grading structure (as appropriate)
* Bibliography
* Required course material
* Statements of policies regarding:
  + Academic Integrity (this statement is developed by the course proposer)
  + Classroom Emergency Response Guidance (see <http://www.pugetsound.edu/emergency/emergency-response-plans/emergency-response-management/>)
  + Student Accessibility and Accommodation (see <http://www.pugetsound.edu/student-life/personal-safety/student-handbook/academic-handbook/student-accessibility-and-accomodation/>)
  + Student Bereavement (see <http://www.pugetsound.edu/student-life/personal-safety/student-handbook/academic-handbook/bereavement-policy/>)

An incomplete syllabus may delay the course proposal review. If a syllabus does not contain all of the items listed above, please provide a brief explanation in the cover letter.

**Please email your completed Curriculum Proposal Form and all relevant documents to the Chair or Director of your Department, Program, or School.**

**After reviewing the proposal, the Chair should forward the full proposal and all relevant documents to** [**curriculum@pugetsound.edu**](mailto:curriculum@pugetsound.edu)**. Receipt of an email message from the Chair or Director containing the Curriculum Proposal Form and all relevant documents indicates Department, Program, or School approval of the proposal. The Associate Deans’ Office will acknowledge receipt to the proposer, and Chair or Director, once proposals have been forwarded to** [**curriculum@pugetsound.edu**](mailto:curriculum@pugetsound.edu) **by the Chair or Director.**

**When there are multiple proposers, the Chair or Director of each proposer’s Department, Program, or School must receive the proposal individually, and each Chair or Director must then forward the proposal and relevant documents to** [**curriculum@pugetsound.edu**](mailto:curriculum@pugetsound.edu)**.**

**EXCERPT FROM SECTION IV OF THE CURRICULUM STATEMENT**

**MATHEMATICAL APPROACHES RUBRIC**

**Learning Objectives**

Students in Mathematical Approaches courses develop an appreciation of the power of Mathematics and formal methods to provide a way of understanding a problem unambiguously, describing its relation to other problems, and specifying clearly an approach to its solution. Students in Mathematical Approaches courses develop a variety of mathematical skills, an understanding of formal reasoning, and a facility with applications.

**Guidelines**

I. These goals are met by courses that treat formal reasoning in one or more of the following areas.

a. Mathematical reasoning: The ability to use such techniques as abstraction, definition, symbolic computation, calculation, and proof.

b. Data-based reasoning: The ability to work with numeric data, to reason from those data, and to understand what can and cannot be inferred from those data;

c. Logical reasoning: The study of formal logic, at least to the extent that is required to understand mathematical proof.

d. Algorithmic reasoning: The ability to analyze a problem, to design a systematic way of addressing that problem using an algorithm, and to implement that algorithm in a formal language such as a computer programming language.

II. Where these skills or methods are taught within the context of a discipline other than mathematics or computer science, they must receive greater attention than the disciplinary material.

**CORE REQUIREMENTS FOR THE BACHELOR'S DEGREE**

The faculty of the University of Puget Sound have designed the core curriculum to give undergraduates an integrated and demanding introduction to the life of the mind and to established methods of intellectual inquiry. The Puget Sound undergraduate's core experience begins with two first-year seminars that guide the student through an in-depth exploration of a focused area of interest and that sharpen the student's skills in constructing persuasive arguments. In the first three years of their Puget Sound college career, students also study five "Approaches to Knowing" - Fine Arts, Humanities, Mathematics, Natural Science, and Social Science. These core areas develop the student's understanding of different disciplinary perspectives on society, culture, and the physical world, and explore both the strengths of those disciplinary approaches and their limitations. Connections, an upper-level integrative course, challenges the traditional boundaries of disciplines and examines the benefits and limits of interdisciplinary approaches to knowledge.

Further, in accordance with the stated educational goals of the University of Puget Sound, core curriculum requirements have been established: (a) to improve each student's grasp of the intellectual tools necessary for the understanding and communication of ideas; (b) to enable each student to understand herself or himself as a thinking person capable of making ethical and aesthetic choices; (c) to help each student comprehend the diversity of intellectual approaches to understanding human society and the physical world; and (d) to increase each student's awareness of his or her place in those broader contexts. Specific objectives of the core areas are described below.

**Tips on preparing the course proposal:**

The cover letter needs to explain how the course fulfills the rubric. The review by the Curriculum Committee of the proposed course is greatly facilitated if each Guideline from the rubric is systematically addressed in the cover letter. The syllabus needs to include a statement that the course counts towards the Mathematical Approaches core requirement.

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| --- | --- | --- |
| **Curriculum Proposal Form** | Proposer’s Name: |  |
| **Mathematical Approaches Courses** | Co-Proposer’s Name: |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Department/Program/School:** | |  | **Course will also fulfill KNOW requirement** |
|  | | | |
| **Course number and title in Bulletin:** | |  | |
|  | | | |
| **Short title for schedule (*30 characters max. including spaces)*:** | | |  |
|  | | | |
| **Bulletin description *(approximately 200 words, present tense, third person, and in complete sentences):*** | | | |
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| --- | --- | --- | --- | --- | --- |
| **S****cheduling:** | Each year  Offered only once  Less frequent offering | **First semester offered:** | Fall  Spring  Summer | **First year offered**: |  |
|  | *Please specify the term if "Offered only once" or provide explanation for "Less frequent offering":* | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Applicable as a requirement** **to the following major/minor/program:** | | | | | | | |  | | | | | | |
|  | | | | | | | | | | | | | | |
| **Additional applicability to the following interdisciplinary program:** | | | | | | | |  | | | | | | |
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| **Elective** **in the following major/minor/program:** | | | | | |  | | | | | | | | |
|  | | | | | | | | | | | | | | |
| **Cross-listed in Department/Program**: | | | | |  | | | | **Cross-listed course** **number**: | | | |  | |
|  | *Please provide rationale for cross-listing:* | | | | |  | | | | | | | | |
|  | | | | | | | | | | | | | | |
| **Academic level**: | | Freshman  Sophomore  Junior  Senior  Graduate | | | | | **Type of credit**: | | | Academic  Activity | | | | |
|  | | | | | | | | | | | | | | |
| **Number of units:** | | |  | **The course is repeatable for additional credit:** | | | | | No  Yes | | *If "Yes", credit limit:* | | |  |
|  | | | | | | | | | | | | | | |
| **Prerequisites:** | | |  | | | | | | | | | | | |
|  | | | | | | | | | | | | | | |
| **Permission of the instructor required to enroll:** | | | | | | No  Yes | | | | | | | | |
|  | *If "Yes," state specifically what academically germane criteria will be used to permit enrollment:* | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | |
| **Intended enrollment limit:** | | | |  | | | **The course is available for auditing:** | | | | | No  Yes | | |

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| **Grading:** | Letter grade  Pass/fail  In-progress  Other | *Please provide explanation for "Pass/Fail," "In-Progress," or "Other" grading:* |

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| --- | --- | --- | --- | --- |
| **Components:** | Lecture  Laboratory  Studio  Other | Graded  Graded  Graded |  |  |
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|  | *Explanation for "Other" components:* | |  | |

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| --- | --- | --- | --- |
| **Does the course have an unusual format (for example, in terms of contact hours, number of weeks, or location)?** | No  Yes | *If "Yes," please attach a completed Supplementary Form for Unusual Format Courses* |  |
| **The course content is redundant with content from another course:** | No  Yes | *If "Yes," specify the other course:* |  |

|  |  |
| --- | --- |
| **The course content is determined by topic (such as in an Advanced Topics course):** | **No**  **Yes** |

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**(Below this line for use by Associate Dean only)**

Date approved by full Curriculum Committee: ­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_