



**Gateway Science and Math Course
Redesign Program – Proposal
2014-2015
Due: April 7, 2014**

Important Dates

April 7, 2014: Gateway Science and Math Course Redesign proposals due. Submit to Gary Smith (gsmith@unm.edu).

April 14, 2014: Selection of three course-redesign teams announced.

May 20-22, 2014: Course-redesign teams attend STEM Gateway Redesign Institute (2.5 days).

June 1-August 15: Course-redesign teams develop proposed curriculum and pedagogical redesign elements; informal meetings between teams and between teams and STEM Gateway facilitators.

August 18, 2014: Revised syllabus for fall-semester implementation provided to STEM Gateway by course-redesign teams (with designated sections for Fall 2014 and Spring 2015 implementation).

2014-2015 Academic Year: Implementation of redesign with collection of assessment data. STEM Gateway will advise throughout the process and arrange for ongoing monthly learning sessions with the combined teams as a faculty learning community.

Compensation Schedule

Summer 2014 compensation for faculty and graduate assistant members of the course reform teams begins on June 2, following attendance at, and proposal update following, the May redesign institute.

Fall 2014-Spring 2015 graduate assistantship (August 15-May 15) contract will be finalized upon receipt of syllabus illustrating changes proposed following the course-design institute.

Summer 2015 compensation for faculty and graduate assistant commences June 1 providing that course-redesign implementation occurred as planned and assessment data were collected.

Continue to complete proposal form

A. Foundational Information

Course number, or numbers (including department/program prefix): _____

Course name(s): _____

If the redesign will affect companion laboratory or recitation/problem solving sessions that have a separate course number/title, then please list these course numbers and titles in this space:

Typical number of sections and students taught during fall, spring, and summer semesters (listing lab and recitation/problem solving sessions separately from the lecture) for each course involved in the redesign proposal:

Abstract of the redesign project. In 500-750 words, please summarize what your project redesign will entail and how the implementation of the redesign will impact students' entry to subsequent courses in the department and to other majors:

Rationale for the redesign; why you need to undertake this work (e.g., dissatisfaction with current curriculum, unsatisfactory student completion rates or grade achievement, etc.)

B. Preliminary Redesign Plan

STEM Gateway anticipates that your redesign plan will mature and change as a consequence of subsequent participation in the course-redesign institute and during the first-summer planning effort. However, a well-developed proposal should show that the redesign team has a foundational understanding of key concepts of course design in university-level science and the assessment of student learning.

The preliminary plan, presented as responses to the prompts found below, should show consideration of and a commitment to implement the five elements for a scientific approach to optimization of science education (modified from the [Carl Wieman Science Education Initiative](#), University of British Columbia and the [Top 25 Project](#), Miami University):

1. Specification of measurable learning outcomes
 2. Rigorous objective assessment of student achievement of these goals
 3. Implementation of teaching methods aimed at maximizing achievement with respect to the specified goals, that are consistent with empirically established results and principles
 - Use methods to actively engage students in their learning and with other learners and, wherever appropriate, employ inquiry-driven approaches to learning
 - Reduce the amount of class time spent on low-level memory or descriptive material by incorporating approaches to facilitate students learning this material outside of class
 - Methods are built on specific student learning outcomes tied to assessment that continuously monitors student learning and modifies the course as necessary
 4. Means for easy dissemination and duplication of materials, methods, and technology to other course instructors
 5. Sustainable and continued optimization based on results of assessment
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1. List the measureable learning outcomes for the redesign project (these may be synonymous with course-level learning outcomes or may only represent some of those outcomes).

2. How do you plan to assess student achievement of the outcomes stated in #1?

3. Describe the teaching methods incorporated into the redesign and link these proposed methods to the learning outcomes stated above and to the research on teaching and learning processes.

4. Describe your plan for expanding the redesign to include all sections of the affected course or courses.

5. Explain how you plan to sustain, and improve upon, the redesigned course components following the one-year funded redesign effort.

C. Course reform team members

Each team should consist of 3-4 UNM faculty members who regularly teach the course. Including a commonly employed part-time instructor is desirable. Each team must also include an instructor of this same course at CNM. If you do not know an appropriate CNM colleague, please contact Gary Smith for guidance (925-0725; gsmith@unm.edu). A graduate assistant from the UNM department will also be hired to assist the team. Each team member must commit to participating in the events and processes listed on the first page of this document.

UNM Faculty Member; Name _____

Rank/Position _____

Number of years teaching this course _____

Typical number of sections of this course taught each year _____

UNM Faculty Member; Name_2_____

Rank/Position_2_____

Number of years teaching this course_2 _____

Typical number of sections of this course taught each year_2 _____

UNM Faculty Member; Name_3_____

Rank/Position_3_____

Number of years teaching this course_3 _____

Typical number of sections of this course taught each year_3_____

UNM Faculty Member; Name-4_____

Rank/Position_4_____

Number of years teaching this course_4 _____

Typical number of sections of this course taught each year_4_____

CNM Faculty Member; Name_5_____

Rank/Position-5_____

Number of years teaching this course_5_____

Typical number of sections of this course taught each year_5_____

Graduate Assistant

Each course-reform team must designate a graduate student who will serve as an assistant to the team (see Background to the Gateway Science and Math Course Reform Program). This position will be funded at 0.50 FTE during the summer 2014, at 0.25 FTE during the 2014-2015 academic year, and at 0.50 FTE during part of summer 2015. Further details, if desired, can be obtained from Gary Smith (925-0725; gsmith@unm.edu). The assistant does not have to be named at this time, but if your proposal is selected, you will need to provide the information listed below by May 1, 2014. If you have a candidate for this position, please provide the information at this time.

Name _____

Qualifications that led to selection of this person (e.g., PhD student with career aspirations in academia; experience as a teaching assistant; opportunity to engage a student from a under-represented group in preparing-future-faculty opportunity)

Certifications

Each team member must sign* below, acknowledging the following:

- ✓ Commitment to attend the May 2013 Designing Courses for Effective Student Learning course-design institute and follow-up meeting
- ✓ Commitment to participate in the course-reform effort continuously from May 2013 through June 2014 including a commitment to the five elements for a scientific approach to optimization of science education (page 5)
- ✓ Commitment to implement the course-reform elements when teaching the reformed course during the 2013-2014 academic year, including classroom observations by project staff, and possible administration of surveys to students
- ✓ Agreement with the content of this proposal

UNM faculty team member

Printed name _1 _____

Signature_1

UNM faculty team member

Printed name_2 _____

Signature_2

UNM faculty team member

Printed name_3 _____

Signature_3

UNM faculty team member

Printed name_4 _____

Signature_4

CNM faculty team member

Printed name_5 _____

Signature_5

*If it is not readily possible to obtain all signatures at the time when proposals are due, each unsigned team member may send an email to Gary Smith (gsmith@unm.edu) that lists and acknowledges the commitment and agreement listed above.

Supporting Letters

Proposals must include letters of support from the Department Chair and CNM Dean that (a) certifies that the redesign proposed in the target course has broad support from the unit, and (b) provides assurances that all sections of the course will implement the redesign by the third semester. (It is expected that all sections of targeted courses will utilize the new models developed, but project implementation might only involve a select number of pilot sections during the first semester).