SOUTH DAKOTA BOARD OF REGENTS
New Course Request

SDSU Engineering / Mathematics and Statistics
Laurie Stenberg Nichols 9/24/14

Section 1. Course Title and Description
Prefix & No. Course Title Credits
MATH 773 Numerical Optimization 3

Course Description:
This course will survey widely used methods for continuous optimization, focusing on both theoretical foundations and implementation using numerical software. Topics include linear programming (optimization of a linear function subject to linear constraints), line search and trust region methods for unconstrained optimization, and a selection of approaches (including active-set, sequential quadratic programming, and interior methods) for constrained optimization.

Section 2. Review of Course
Will this be a common or unique course? (select the appropriate option below)
X This course will be a unique course. (Go to Section 3.)

Section 3. Other Course Information
1. Are there instructional staffing impacts?
   X No, schedule management. Explain: Course will be offered on a rotating basis.

2. Existing program in which course will be offered: S.PH.D.CSS Computational Science & Statistics (PhD)

3. Proposed instructional method: R - Lecture
   Provide a brief justification: Course material is best in this method.

4. Proposed primary delivery: 001- Face to face

5. Term in which change will be effective: Spring 2015

6. Can this course be repeated for additional credit? No

7. Will the grade for this course be limited to S/U (pass/fail)? Yes X No

8. Will section enrollments be capped? Yes, 20 maximum per section

9. Will this course be equated (i.e. considered the same course for degree completion) with any other unique or common course in the course database? Yes X No

10. Is this prefix already approved for your university? Yes X No

Section 4. To be completed by Academic Affairs
1. University department code: SMATH

2. Proposed CIP code: 27.0303
   Is this a new CIP code for this university? Yes X No