Section 1. Course Title and Description

If the course contains a lecture and laboratory component, identify both the lecture and laboratory numbers (xxx and xxxL) and credit hours associated with each. Provide the complete description as it will appear in the system common or unique database, including pre-requisites, co-requisites, and registration restrictions.

<table>
<thead>
<tr>
<th>Prefix &amp; No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>STAT 721</td>
<td>Statistical Computing and Simulation</td>
<td>3</td>
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</table>

Course Description: Computationally intensive statistical methods that would not be feasible without modern computational resources and statistical simulation techniques, including random variable generation methods, Monte Carlo simulation and importance sampling, kernel smoothing and smoothing splines, bootstrap, jackknife and cross validation, regression and variable selection in regression, EM algorithm, concepts of Bayesian inference, Markov chain Monte Carlo methods such as Gibbs sampling, and the Metropolis-Hasting algorithm. Prerequisite: STAT 582 or STAT 687.

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. Replacement of CSS 703 Statistical Modeling and Computing which is (prefix, number, name of course, credits)
   being deleted. Effective date of deletion: Summer 2011

2. Existing program in which course will be offered: S.MS.STAT

3. Proposed instructional method: R (Lecture)
   (may be found at http://www.sdbor.edu/services/academics/AAC/guidelines.htm )

   Provide a brief justification:
Lecture is an efficient way to deliver this course’s content.

4. Proposed primary delivery: 
   001 Face to Face Term Based Instruction
   (may be found at http://www.sdbor.edu/services/academics/AAC/guidelines.htm)

5. Term in which change will be effective: Summer 2011

6. Can this course be repeated for additional credit?
   ______ Yes, total credit limit: ________  ________ X No.

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

8. Will section enrollments be capped?
   ______ X Yes, maximum per section 20  ________ No

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?
    ______ X Yes  ______ No

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Section 4. To be completed by Academic Affairs

1. University department code: SMATH

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