DOCUMENTS OF THE GENERAL FACULTY

PROPOSAL TO CHANGE THE CERTIFICATE IN SCIENTIFIC COMPUTATION IN THE COLLEGE OF NATURAL SCIENCES CHAPTER IN THE *UNDERGRADUATE CATALOG, 2016-2018*

Dean Linda Hicke, in the College of Natural Sciences has filed with the secretary of the Faculty Council the following proposal to rename the Certificate in Scientific Computation in the *Undergraduate Catalog, 2016-2018*. On September 22, 2015, the college faculty approved the proposal. On September 28, 2015, Associate Dean David Vanden Bout approved it on behalf of the college and the dean. The secretary has classified this proposal as legislation of *general* interest to more than one college or school.

The Committee on Undergraduate Degree Program Review recommended approval of the changes on November 18, 2015, and forwarded them to the Office of the General Faculty. The Faculty Council has the authority to approve this legislation on behalf of the General Faculty. The authority to grant final approval on this legislation resides with UT System.

If no objection is filed with the Office of the General Faculty by the date specified below, the legislation will be held to have been approved by the Faculty Council. If an objection is filed within the prescribed period, the legislation will be presented to the Faculty Council at its next meeting. The objection, with reasons, must be signed by a member of the Faculty Council.

To be counted, a protest must be received in the Office of the General Faculty by December 11, 2015.

Hillary Hart, Secretary
General Faculty and Faculty Council

PROPOSAL TO CHANGE THE CERTIFICATE IN SCIENTIFIC COMPUTATION IN THE COLLEGE OF NATURAL SCIENCES CHAPTER IN THE *UNDERGRADUATE CATALOG, 2016-2018*

1. **Type of Proposal**
   ☒ New Certificate Program (requiring THECB notification only)
   ☐ Change an Existing Certificate Program
   ☐ Delete a Program

   Proposed classification ☒ Exclusive ☐ General ☐ Major

2. 2. **THIS PROPOSAL INVOLVES (Please check all that apply)**

   ☐ Courses in other colleges
   ☐ Courses in proposer's college that are frequently taken by students in other colleges
   ☐ Flags

   ☐ Course in the core curriculum
   ☐ Change in course sequencing for an existing program
   ☐ Courses that have to be added to the inventory

   ☐ Change in admission requirements (external or internal)
   ☐ Requirements not explicit in the catalog language (e.g., lists of acceptable courses maintained by department office)
   ☒ Other: change to title of certificate

3. **SCOPE OF PROPOSED CHANGE**
   a. Does this proposal impact other colleges/schools? Yes ☐ No ☒
      If yes, then how?
   b. Do you anticipate a net change in the number of students in your college? Yes ☐ No ☒
      If yes, how many more (or fewer) students do you expect?
   c. Do you anticipate a net increase (or decrease) in the number of <u>students from outside</u> of your college taking <u>classes in your college</u>? Yes ☐ No ☒
      If yes, please indicate the number of students and/or class seats involved.
   d. Do you anticipate a net increase (or decrease) in the number of <u>students from your college</u> taking <u>courses in other colleges</u>? Yes ☐ No ☒

   If 3 a, b, c, or d was answered with yes, please answer the following questions. If the proposal has potential budgetary impacts for another college/school, such as requiring new sections or a non-negligible increase in the number of seats offered, at least one contact must be at the college-level.

   How many students do you expect to be impacted:
   Impacted schools must be contacted and their response(s) included:
   Date of communication:
   Response:

4. **Official Certificate Name:** Certificate in Scientific Computation, however, the proposal is to change the name to Certificate in Scientific Computation and Data Sciences.

5. **Proposed Implementation Date**: N/A

6. **CIP Code** (administrative unit awarding the certificate)**:** N/A

7. **Statement of Objective**: N/A

8. **Number of Students Expected to Receive the Certificate Each Semester:** Our target enrollment is twenty students, with five to eight graduates each academic year.

9. **Number of Hours Required for Completion**:[1] Eighteen

10. **List Faculty on the Certificate Program Faculty Committee**. N/A

11. **Academic Course Requirements**: N/A

12. **Other Certificate Requirements:** N/A

13. **Give a Detailed Rationale for Change(s):**
    The Department of Statistics and Data Sciences faculty voted to change the title of the certificate. "Data Sciences" is added so that the name of the certificate aligns with the new departmental name and clarifies the scope of the certificate.

14. **College/School Approval Process:**
Departmental Approver:	Michael Daniels, Chair
Approval date:	April 8, 2015
College approval date:	April 22, 2015
Dean approver:	David Vanden Bout
Title:	Associate Dean for Undergraduate Education
Date:	September 28, 2015

PROPOSED NEW CATALOG TEXT:

Certificate in Scientific Computation and Data Sciences

The Certificate in Scientific Computation and Data Sciences helps undergraduates equip themselves with the mathematical, statistical, and computer-based tools necessary to investigate complex systems in a variety of applications. It is designed to appeal to students across the University in science, engineering, economics, premedicine, sociology, and many other disciplines. The program is administered by the Department of Statistics and Data Sciences. To be admitted, a student must be in good standing in an approved undergraduate degree program and must have earned a grade of at least *C-* in each certificate course he or she has completed. Students may apply for admission to the program at any point in their undergraduate study; they are encouraged to apply as early as possible so that they can be advised throughout the program.

The following coursework is required. Students must also complete Mathematics 408D or 408M as a prerequisite. No single course or topic may be used to meet more than one of these requirements.

1. Statistics and Data Sciences 222
2. One course in linear algebra, discrete mathematics, or differential equations chosen from the following: Mathematics 340L, 341, 362M, 372K, Statistics and Data Sciences 329C
3. Two courses in scientific computing, chosen from two of the following areas:
    a. *Numerical methods*: Aerospace Engineering 211K, Chemical Engineering 348, Computer Science 323E, 323H, 367, Mathematics 348, Petroleum and Geosystems Engineering 310, Statistics and Data Sciences 335
    b. *Statistical methods*: Biomedical Engineering 335, Electrical Engineering 351K, Mathematics 358K, 378K
    c. *Other computing topics*: Computer Science 324E, 327E, 329E (approved topics), 377, Mathematics 346, 362M, 368K, 372K, 375T (approved topics), 376C, Mechanical Engineering 367S, Statistics and Data Sciences 329D, 374C, 374D, 374E
4. One of the following courses in applied computational science: Aerospace Engineering 347, Biology 321G, Biomedical Engineering 342, 346, 377T (approved topics), Chemistry 368 (approved topics), Computer Science 324E, 329E (approved topics), Economics 363C, Electrical Engineering 379K (approved topics), Geological Sciences 325K, Mathematics 375T (approved topics), 374M, Physics 329
5. An independent research course: Statistics and Data Sciences 479R.

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[1] See footnote 1b above: 18-24 hours are required.