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CHE
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Agenda Item 4.02A.5.

**New Program Proposal
Bachelor of Science
Major in Discovery Informatics
College of Charleston**

Summary

The College of Charleston requests approval to offer a program leading to the Bachelor of Science degree with a major in Discovery Informatics to be implemented in Fall 2005.

The Board of Trustees of the College of Charleston approved the proposal on October 29, 2004. The proposal was submitted for Commission review on November 19, 2004. The proposal was reviewed by the Advisory Committee on Academic Programs at its meeting on January 20, 2005. Comments at the Advisory Committee on Academic Programs' meeting in January 20, 2005, were positive about the concept and supportive of the proposal itself.

The purpose of the program is to prepare graduates with entry-level skills for managing and interpreting huge databases now available in every known subject as a result of the world's entry into the computer age. The need for the program has been determined by the increased requirements to organize and track the huge amounts of alpha and numeric databases being created in the computer age. Central to the program's curriculum are the fields of mathematics (especially statistics) and computer science.

The program is designed to provide students with first-rate skills and knowledge in computer science, mathematics, statistics, and a relevant substantive field of study with databases of exceedingly large size, so that students can learn statistical modeling and computer-based operations to index, store, extract, analyze and interpret from those computerized databases. The growth in size of databases and the need to be able to "analyze and mine" them, as the proposal states, will be one of the chief challenges for knowledge development in the 21st century.

According to the proposal, the program will be academically rigorous and multi-disciplinary in focus. Because of that mix, the institution is anticipating that

the program will elicit significant interest among some of the most academically talented students who apply to the College.

The curriculum will consist of a core of 18 courses constituting a total of 54 semester hours (26 in mathematics; 19 in computer science; and nine in Discovery Informatics), as well as courses in one cognate area (12-22 credit hours, depending upon the field of study). The remainder of the degree program will be composed of college general education requirements and electives to meet the 122 credit hours necessary for graduation.

Although no other undergraduate program *major* currently exists in South Carolina, a similar program in academic intent is found at Wofford College as a Certificate in Computational Mathematics for those students completing a major in one of three natural sciences, psychology, or mathematics. (Cf., p. 132, *Wofford College 2003-2005 Catalogue*)

A total of two faculty will begin to teach in the program in Fall 2005. Only in the fourth year will a new faculty member, principally for the Discovery Informatics program, be hired. By the fifth year, a total of 16 faculty members will be involved in the program, teaching a total of nine courses per year in Discovery Informatics. This will represent a commitment of 2.375 FTE per year who will constitute the core faculty for the program.

The College has purposefully constructed the program to work with existing majors at the institution, so that all students majoring in Discovery Informatics will be required to take a cognate in a substantive discipline. Initially, there will be cognates in six academic departments. This figure will grow over the course of the first five years of the program's implementation. Currently, an additional 14 academic departments are contemplating the development of cognates for inclusion in the Discovery Informatics program of study.

Enrollment in the proposed program is estimated to begin at eight students (5.4 FTE) in FY 2005-2006 and increase to 50 students (34.1 FTE) in FY 2009-2010. If enrollment projections are met, the program will meet the current CHE program productivity standards.

The program will not be required to seek accreditation through any national accrediting body, since at this time, no accrediting body exists for this area of study.

No additional physical plant requirements will be required to implement the proposed program. No additional equipment costs are needed to implement the

new program. The library will require an expenditure of \$8,000 for new materials in order to accommodate the Discovery Informatics major.

New costs for the program are estimated by the institution to begin at \$15,500 in year one and include program administration, supplies and materials, and new course development. This figure contains no costs for any of the 16 faculty members participating in the program, based upon the assumption that they would be full-time at the institution regardless of whether the Discovery Informatics program exists or not. Estimated costs are to increase to \$ 70,000 by the fifth year of the program and include line items for one new faculty salary, program administration, supplies and materials and library resources. The total estimated for new costs is \$ 183,000 for the first five years of the program's operations.

Shown below are the estimated Mission Resource Requirement (MRR) costs to the state associated with implementation of the proposed program for its first three years. Also shown are the estimated revenues projected under the Mission Resource Requirement and the Resource Allocation Plan as well as student tuition.

Year	Estimated MRR Cost for Proposed Program	Extraordinary (Non-MRR) Costs for Proposed Program	Total Costs	State Appropriation	Tuition	Total Revenue
2005-06	\$71,617		\$71,617	\$0	\$52,368	\$52,368
2006-07	\$189,806		\$189,806	\$19,959	\$136,937	\$156,896
2007-08	\$307,996		\$307,996	\$52,315	\$222,919	\$275,235
2008-09	\$436,730		\$436,730	\$84,879	\$316,245	\$401,124
2009-10	\$449,911		\$449,911	\$120,438	\$325,002	\$445,440

These data demonstrate that if the new program meets its enrollment projections and contains costs as they are shown in the proposal, the program will not be able to cover new costs with revenues it generates by the fifth year of its implementation. Nevertheless, the institution is committed to offering this program and takes the position that the necessary funds to offer it are available.

In summary, the proposed program will add a unique major to the undergraduate majors of South Carolina's public institutions. The program will prepare students who major in it to be able to analyze and mine significant knowledge from huge computerized databases, an ability which will become more sought after as the century and computerized databases advance. This program should attract some of the most advanced and academically talented students because of its emphasis upon rigor and interdisciplinarity. Given its

imbeddedness in other, existing academic programs at the institution, it can be offered economically.

Recommendation

The Committee on Academic Affairs and Licensing recommends that the Commission approve the program at the College of Charleston leading to the Bachelor of Science degree with a major in Discovery Informatics, to be implemented in Fall 2005, provided that no "unique cost" or other special state funding be required or requested.