

**Request for Authorization to Establish a
Master of Science in Data Science and Business Analytics at
University of North Carolina at Charlotte**

University of North Carolina at Charlotte requests authorization to establish a Master of Science in Data Science and Business Analytics degree program (CIP 52.1399).

I. Program Highlights

- 33 credit hours
- Program spans business process knowledge and technology skills
- Industry practicum required (for all Professional Science Master's programs)
- 25 full-time, 25 part-time students projected at steady state
- Start-up costs include Director stipend, four faculty positions (one each year in first four years, one would be endowed professor), two student support services positions (Years 1 and 3), and operational expenses.

II. BOG Academic Program Planning Criteria (UNC Policy 400.1)

- 1. Existing Programs (Number, Location, Mode of Delivery).** North Carolina State University's M.S. in Analytics is a 10-month cohort-based program for full-time students and considered the leading program in the country. UNC Chapel Hill offers a Business Analytics track in their M.S. in Interdisciplinary Statistics and Operations Research (INSTORE). UNC Charlotte's MBA program has a concentration in Business Analytics but lacks the level of specialization offered by the proposed program. Some students in the proposed program may choose to take elective courses from UNC Charlotte's existing M.S. in Health Informatics, also a Professional Science Master's program.
- 2. Relation to Campus Distinctiveness and Mission.** The proposed program supports UNC Charlotte's mission as North Carolina's urban research university to focus on community engagement, professional programs, and economic development for the Charlotte region.
- 3. Demand (Local, regional, state).** More than 400 undergraduate students and alumni from the Belk College of Business and the College of Computing and Informatics responded to an interest survey; the respondents most likely to consider enrolling in the proposed program were Belk College undergraduates (61%), followed by CCI undergraduates (59%), Belk College alumni (54%) and CCI alumni (50%).
- 4. Potential for Unnecessary Duplication.** At the time of the proposal, North Carolina State University's program in analytics had received 468 applicants for the class of 2014 and expected to enroll about 85 – doubling the size of its 2013 entering class. Program administrators at North Carolina State University agreed that the differing emphases and academic structures of the two programs will ensure their complementarity. The proposed program will also draw a pool of part-time applicants not currently served by the NC State program.

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- 5. Employment Opportunities for Graduates.** A 2011 McKinsey report estimates that by 2018, the U.S. will have a deficit of nearly 200,000 professionals with deep analytical skills and will need to employ 1.5 million managers who “understand the value of data and know the right questions to ask.” It is estimated that these numbers approach 5,000 professionals and 40,000 managers in North Carolina alone. A 2012 Accenture study projects that the U.S. will create 44% of the new jobs available in analytics worldwide but only 23% of the supply needed to fill them. A 2012 Technologies Council of North America study shows similar demand and shortage evidence for the country and for North Carolina. Employers in the Charlotte region, including Bank of America, Wells Fargo, Lowe’s, Ernst and Young, CSG Systems, IBM, SAS, BB&T, Belk, Inc., Carolinas HealthCare, and Duke Energy have informed the development of this Professional Science Master’s program. One employer stated, “there simply are not enough people with the right amount of knowledge that cut across [both technology and information management skills].”
- 6. Faculty Quality and Number.** Twenty-nine faculty from the Belk College of Business and the College of Computing and Informatics will be directly involved in delivery of the program. In addition, industry practitioners with appropriate credentials will be invited to serve as adjunct faculty on needed basis. Faculty qualifications and ability to deliver the program were found acceptable during the review process.
- 7. Availability of Campus Resources (library, space, etc.).** No new library resources, facilities, or information technology infrastructure and services are needed to launch the program.
- 8. Relevant Lower-level and Cognate Programs.** Students entering the program will have completed an undergraduate major in economics, business, healthcare, computer science, information technology or a quantitative discipline such as mathematics, statistics or engineering. See response to #3 for interest survey results.
- 9. Impact on Access and Affordability.** The proposed program will provide access for both full- and part-time students. The program is seeking a \$7,000 per student per year differential tuition amount, which was determined to be consistent with tuition charged by North Carolina State University as well as twenty-five other analytics programs across the country.
- 10. Expected Quality.** The buy-in and support of industry partners in the Charlotte region is high.
- 11. Feasibility of Collaborative Program.** The proposed program is a highly collaborative endeavor that spans the resources and expertise resident in two schools within UNC Charlotte. While the program draws upon business faculty and expertise, it is not a typical MBA. Opportunities for cross-campus course enrollments may exist, particularly with UNC Chapel Hill which is not an accelerated cohort model like NC State’s.
- 12. Other Considerations.** *Our Time Our Future* identifies Professional Science Master’s programs, which meet identified industry needs, as an area of targeted growth in graduate education.

III. Summary of Review Processes

Campus Review Process and Feedback. The proposal was developed collaboratively by faculty in the College of Computing and Informatics (CCI) and the Belk College of Business (CoB);

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therefore, the proposal moved through review and approval steps in each college. The CCI Graduate Council recommended that the list of laboratories available to the program be updated before ultimately being approved unanimously by CCI faculty and the Dean. The CoB Graduate Council and faculty each approved the proposal unanimously with no recommendations before obtaining Dean approval. The UNC Charlotte Graduate Council then approved the proposal unanimously with one non-substantive administrative change to the proposal naming convention. The UNC Charlotte Faculty Council provided the final approval, which was unanimous and without recommendations.

UNC General Administration Review Process and Feedback. Prior to UNC Graduate Council review, UNC Charlotte responded to questions from UNC General Administration staff on demand evidence, program entry requirements, and budget and resource needs. The proposal was then reviewed by more than twenty-three faculty and graduate program administrators from seven UNC campuses. Reviews consistently noted strong program alignment with UNC Charlotte's mission and the opportunity to leverage local business relationships. UNC Charlotte responded to questions on the status of course sharing agreements and plans to attract and facilitate successful completion of part-time students. Reviewers sought additional details about computing, library and other resources required. They also questioned the sustainability of the program based on projected funding sources and dependence on differential tuition. UNC Charlotte responded that the campus is fully committed to fund and deliver the program as stated in the proposal. The Chancellor has designated this initiative as the top academic priority for the university and allocated \$1M in continuing funds for faculty and staff positions in support of research, instruction and executive education. The Belk Corporation has committed an endowed position for a faculty member in business analytics. One reviewer questioned need for the program (versus the existing MBA with Business Analytics concentration). The proposed program is designed as a specialized master's degree versus the 9 credit hour concentration within a traditional MBA.

Benefits of program approval include addition of an industry-responsive program that leverages existing expertise at UNC Charlotte. Differential tuition revenues will contribute a significant portion of the budget needed to launch the program. If enrollments are not as projected and these revenues are not realized, then the funds must come from other sources or the program will have to reconsider its anticipated growth trajectory and plan to deliver the program without additional faculty.

IV. Recommendation

It is recommended that the Board of Governors approve University of North Carolina at Charlotte's request to establish a Master of Science in Data Science and Business Analytics degree program (CIP 52.1399) effective February 2014.