Agenda Item: II.B.

DATE: May 17, 2019

SUBJECT: New Academic Program
University of Tennessee, Chattanooga
Data Analytics, Masters of Science
(CIP 52.1301- Management Science)

ACTION RECOMMENDED: Approval

PROGRAM DESCRIPTION
The University of Tennessee, Chattanooga's Gary W. Rollins College of Business (RCOB) and the College of Engineering and Computer Science (CECS) proposes to offer a collaborative Master of Science in Data Analytics (MSDA). Data Analytics is a broad discipline with many applications; it focuses on the collection, management, quality control, and interpretation of large sets of data. The proposed MSDA program will focus on combining high-quality expertise in computer science, with business analytic skills so that massive volumes of data may be visualized and analyzed to reveal emerging business trends. Data analytics is a rapidly growing field that requires well-trained and skilled workers. The proposed program will help address the shortage of professionals in this growing field. Students will have the option of engaging in additional work in either a business or a computer science concentration.

INSTITUTIONAL GOVERNING BOARD APPROVAL
The proposed Master of Science in Data Analytics program was approved by the University of Tennessee Board of Trustees on March 1, 2019.

PROPOSED IMPLEMENTATION DATE
Fall 2019

RELEVANCE TO INSTITUTIONAL MISSION AND STRATEGIC PLAN
The proposed MSDA program addresses the University of Tennessee, Chattanooga's goal of transforming lives by offering students the opportunities to develop highly rewarding careers in the high demand area of data analytics. The proposed program grows out of the UTC's strategic plan, is aligned with local and regional development strategies, and incorporates best practices. The program is part of an ongoing response to community demand; it provides UTC with an opportunity to fill an empty space in the region's educational offerings while continuing to interact with industry, and, in so doing, assume a larger role in the civic infrastructure.

Further, the implementation of the MSDA at UTC strongly supports the State Master Plan. Specifically, as part of the Drive to 55 initiative, graduates from the MSDA will contribute to the target number of postsecondary degrees awarded annually in the state. The degree program will result in community partnerships that will positively impact the economy through local and regional job placements and improved worker productivity.

CURRICULUM
The curriculum for the MS Data Analytics program has been developed collaboratively between the Rollins College of Business and College of Engineering and Computer Science, though the program will reside in the Rollins College of Business. The 36 credit hour curriculum is adequately structured to meet the stated objectives of the academic program. The proposed MSDA curriculum includes options for student to select an internship, practicum project or thesis to satisfy the capstone requirement. Students will have an opportunity to work under the close guidance of a faculty member on projects using real-world data provided by partner companies or important public data.

PROGRAM PRODUCTIVITY
The proposed MSDA program will recruit a diverse student body with a mix of international students, professionals in the workforce and recent graduates. In the first year, 15 students are expected to enroll in the program with first graduates expected in the third year.

	2019	**2020**	**2021**	**2022**	**2023**
Enrollment	15	20	24	24	24
Graduates	--	--	14	15	15

PROGRAM DUPLICATION
The proposed MSDA program is distinctive and does not duplicate existing programs in Data Analytics. The program is unique in the joint collaborative programmatic design between the Business and Computer Science faculties. This graduate program offers students the opportunity to develop expertise in both business administration and data analytics through a deliberative curriculum that is paired with unique practicum partnerships with TVA, BlueCross Blue Shield, non-profit agencies, and educational partners in the Chattanooga region. The joint collaborations and community partnerships offers the state a unique program that prepares students for the economy of the 21st century.

The Haslam College of Business at the University of Tennessee, Knoxville offers the only similar program in the state, but with a different emphasis. The Master of Science in Business Analytics is a 38 hour program with a focus on a broad range of decision analysis techniques and tools with an application to real-world business programs.

EXTERNAL JUDGEMENT

Dr. Michael Goul, Associate Dean for Research at the W. P. Carey School of Business, Arizona State University, served as the external reviewer for the prosed Data Analytics program on October 15, 2018. In his review, Dr. Goul stated, "Overall, it is my opinion that the proposed MS in Data Analytics program is extremely well positioned, and when implemented, it will be a top competitor on par with the best masters in data analytics programs in the U.S …. I wholeheartedly recommend approval of the program as planned. This program will have many, many positive and highly competitive foundations on the very day it launches. All of the markers for what one could anticipate in a top program are already in place – industry participation, cross-discipline collaboration, well-designed curriculum with a strong project component, AACSB outcomes assessment protocols in place, a strong, collaborative faculty, and excellent Dean-level commitment from both engineering/computer science and business".

STUDENT DEMAND

The University of Tennessee, Chattanooga is projecting a large enrollment for this proposed program based off the robust enrollment of the Business Analytics certificate that averages 23 new students a term. Further, UTC identified student interest from both undergraduate students and industry inquires for this program.   UTC projects that students will be drawn from three distinct areas: individuals currently in the workforce who see the value in the degree, current undergraduates who wish to enroll in the program following graduation, and international students. Businesses in the Chattanooga region recognize the importance of the degree to their ongoing success and indicated a willingness to provide tuition assistance to employees who wish to upgrade their skills and earning potential by pursuing an advanced data analytics degree.

OPPORTUNITIES FOR PROGRAM GRADUATES

There is a growing demand for data analytics professionals and a lack of available graduates to fill positions. A 2017 Forbes article predicts a $203 billion-dollar data analytics market. Further, a regional and local demand exists for analysts and "big data" trained professionals. The Chattanooga *GIG City* initiative, powered by high-speed internet service to all residents and businesses, is expected to further increase the demand for highly trained data science professionals in the local area. In addition, area businesses such as Blue Cross Blue Shield of Tennessee, Unum, US Express, Electric Power Board, and the Tennessee Valley Authority have expressed interests in such professionals.

This number of available jobs is steadily increasing in the area of data analytics. According to EMSI – Labor Market Analytics, the number of jobs increased approximately 30 percent from 2017, and there are predicted to be close to 500 jobs available by 2028. Along with the demand for individuals with degrees in this area, the earnings associated with these jobs are also on the rise. From January 2017 to November 2018, there were 600 unique job posting related to data analytics within the Chattanooga region. Industries with job

postings included health and medical insurance carriers, government, holding companies, and management and consulting services.

INSTITUTIONAL CAPACITY TO DELIVER THE PROGRAM

For administration purposes, the program will be housed in The Rollins College of Business. A faculty program director from the Rollins College of Business will be appointed who will be responsible for overall administration of the program to include the following: recruiting students, working with faculty to ensure that all the courses in the program are coordinated, providing guidance, assisting in student placement activities, and helping build connections with area businesses.

A steering committee consisting of faculty from Rollins College of Business and College of Engineering and Computer Science will be established to periodically review the program to determine if any changes are required, help handle exceptional situations and other matters related to the program. The program plans to hire one additional computer science faculty in the first year of the program and an additional business faculty member in the third year of the program.

A one-time $45,000 is budgeted for year one to add necessary technologies needs for hardware and software. The program is also budgeting an annual $35,200 to support graduate assistantships. The program will be funded through tuition and fees and institutional reallocations. Appendix A outlines the 5 year financial projections for the proposed Data Analytics program.

ASSESSMENT AND POST-APPROVAL MONITORING

The professional accreditation agency for the Master of Science, Data Analytics, is through the Association to Advance Collegiate Schools of Business (AACSB).   The MSDA program will be considered accredited by AACSB until it is reviewed by the AACSB Peer Review Team during the scheduled 2023-24 Continuous Improvement Review process.

An annual performance review of the proposed program will be conducted for the first five years following program approval. The review will be based on benchmarks established in the approved proposal. The benchmarks include, but are not limited to, enrollment and graduation, program cost, progress toward accreditation, and other metrics set by the institution and THEC staff. The monitoring period may be extended if additional time is needed to achieve the benchmarks. If benchmarks are not met, the Commission may recommend that the institutional governing board terminate the program.

Tennessee Higher Education Commission
THEC Financial Projections
University of Tennessee, Chattanooga
Data Analytics, Master of Science

Seven-year projections are required for doctoral programs.
Five-year projections are required for baccalaureate and Master's degree programs
Three-year projections are required for associate degrees and undergraduate certificates.
Projections should include cost of living increases per year.

	Year 1	Year 2	Year 3	Year 4	Year 5
I. Expenditures					
A. One-time Expenditures					
New/Renovated Space	$ -	$ -	$ -	$ -	$ -
Equipment[1]	45,000	-	-	-	-
Library	3,000	-		-	-
Consultants	-	-	-	-	-
Travel	6,000	-	-	-	-
Other	-	-	-	-	-
Sub-Total One-time	$ 54,000	$ -	$ -	$ -	$ -
B. Recurring Expenditures					
Personnel					
Administration					
Salary	$ -	$ -	$ -	$ -	$ -
Benefits	-	-	-	-	-
Sub-Total Administration	$ -	$ -	$ -	$ -	$ -
Faculty					
Salary[2]	$ 90,000	$ 92,700	$ 220,481	$ 227,095	$ 233,908
Benefits	36,900	38,007	90,397	93,109	95,903
Sub-Total Faculty	$ 126,900	$ 130,707	$ 310,878	$ 320,204	$ 329,811
Support Staff					
Salary	$ 16,000	$ 16,480	$ 16,974	$ 17,484	$ 18,008
Benefits	6,560	6,757	6,960	7,168	7,383
Sub-Total Support Staff	$ 22,560	$ 23,237	$ 23,934	$ 24,652	$ 25,391
Graduate Assistants					
Salary	$ 35,200	$ 35,200	$ 35,200	$ 35,200	$ 35,200
Benefits	-	-	-	-	-
Tuition and Fees* (See Below)	46,134	47,518	48,944	50,412	51,924
Sub-Total Graduate Assistants	$ 81,334	$ 82,718	$ 84,144	$ 85,612	$ 87,124
Operating					
Travel	$ 5,000	$ 5,150	$ 5,305	$ 5,464	$ 5,628
Printing	4,000	4,120	4,244	4,371	4,502
Equipment	1,500	1,545	1,591	1,639	1,688
Other	-	-	-	-	-
Sub-Total Operating	$ 10,500	$ 10,815	$ 11,140	$ 11,474	$ 11,818
Total Recurring	$ 241,294	$ 247,477	$ 430,096	$ 441,942	$ 454,144
TOTAL EXPENDITURES (A + B)	$ 295,294	$ 247,477	$ 430,096	$ 441,942	$ 454,144

[1] A new server and a computer lab (for computer science) is needed to support the program.
2 Two new lines are needed to support the program. One in computer science at $90,000 starting in year 1 and one in business at $125,000 starting in year 3.

If tuition and fees for Graduate Assistants are included, please provide the following information.

	Year 1	Year 2	Year 3	Year 4	Year 5
Base Tuition and Fees Rate	$ 11,533.50	$ 11,879.51	$ 12,235.89	$ 12,602.97	$ 12,981.06
Number of Graduate Assistants	4	4	4	4	4

	Year 1	Year 2	Year 3	Year 4	Year 5
II. Revenue					
Tuition and Fees[2]	115,335	219,771	348,723	485,214	551,695
Institutional Reallocations[3]	129,959	27,706	81,372	(43,272)	(97,551)
Federal Grants[4]	-	-	-	-	-
Private Grants or Gifts[5]	50,000	-	-	-	-
Other[6]	-	-	-	-	-
BALANCED BUDGET LINE	$ 295,294	$ 247,477	$ 430,095	$ 441,942	$ 454,144

Notes:

(1) Provide the funding source(s) for the new or renovated space.

Tuition and fee revenue is expected to be generated in the first year of the program. The figures for tuition and fees above includes the differential tuition fee of $57/credit hour in the Colleges of Business and Engineering and Computer Science. It also includes the graduate program fee of $50/credit hour in the College of Business, which is applied to the College of Business courses only. Each fee is illustrated with an annual 3% escalator.

(2) In what year is tuition and fee revenue expected to be generated? Tuition and fees include maintenance fees, out-of-state tuition, and any applicable earmarked fees for the program. Explain any differential fees.

(3) Identify the source(s) of the institutional reallocations, and grant matching requirements if applicable.

(4) Provide the source(s) of the Federal Grant including the granting department and CFDA(Catalog of Federal Domestic Assistance) number.

(5) Provide the name of the organization(s) or individual(s) providing grant(s) or gift(s).
The University of Chattanooga (UC) Foundation has provided $50,000 in start up funds.

(6) Provide information regarding other sources of the funding.