College of Business and Economics

MS Business Analytics
Annual Program Report

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Program Co-Directors

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I. SELF-STUDY

A. Planning Goals and Progresses Made

The MS in Business Analytics (formerly, MS in Business Administration, Business Analytics Option) was founded in fall 2015. In the academic year 2015-2016, we received 218 applications, out of which 97 were admitted and 64 had enrolled. In the academic year 2016-2017, we received 325 applications, out of which 162 were admitted and 94 had enrolled. We have established the following goals:

1. We set enrollment targets of 120-140 students per academic year for the foreseeable future.

   Progress Made: In the fall quarter of 2017, we have received 286 applications, out of which 138 were admitted and 65 have enrolled. We fully expect that the enrollment of 2016-2017 will reach approximately 120 students.

2. Convert and transform quarter curriculum to semester curriculum.

   Progress Made: In the Q2S conversion process, we have made the following changes, which make the program more attractive to the perspective students and better meet the industry need.
   - Included GMAT/GRE as an admission requirement.
   - Obtained new prefix **BAN** for all courses offered by the program.
   - Removed all the previous proficiency and fundamental courses and replaced them with two prerequisite courses: BAN 601 – Technology Fundamentals for Analytics and BAN 602 – Quantitative Fundamentals for Analytics.
   - Converted six required courses to their respective semester counterparts.
   - Created two new electives: BAN 660 – Advanced Topics in Big Data and BAN 670 – Advanced Topics in Analytics.
   - Transformed 1-unit Capstone in quarter system to 3-unit Capstone in semester system.

3. Establish collaborative relationship with companies and organizations in Bay Area.

   Progress Made: We have established MSBA Advisory Board with board members from Google, LinkedIn, SAP, Chevron, Walmart Lab, Safeway, Clorox and Kaiser.

B. Program Changes and Needs

1. We started with offering each of the six core courses once a year in 2015-2016. In 2016-2017, each core course was offered twice a year. In the current academic of 2017-2018, we are offering each core course four times to satisfy the huge demand that the program has generated.

2. To meet the increasing demand, we have hired a tenure-track ITM faculty member in 2016 and two more in 2017. They are currently teaching multiple MSBA core courses. Currently, another search is under way aiming to hire two tenure-track faculty members who are expected to join us in fall 2018. After Q2S conversion, we expect to need 1-2 more full time faculty members.

3. Develop more cutting-edge electives and potentially create concentrations under MS Business Analytics. Currently, six new electives are being developed, covering subjects such as Machine Learning, Text Mining, and Deep Learning.

4. Need large computer labs for MSBA classes. A lot of time, an MSBA class will have more than 40 students and require a computer lab to teach hands-on skills. But such large computer labs are not enough on the campus and thus are difficult to get for some MSBA classes. We hope the university will look into this issue and find ways to accommodate our needs.

5. Offer some courses in hybrid or online format. It has been approved that we can offer BAN601 and BAN602 in hybrid/online format. We hope that more courses can be offered in hybrid format.

6. Strengthen and expand the collaboration with industry, in hopes that we can create more projects, internships and job opportunities for the students.

II. SUMMARY OF ASSESSMENT RESULTS

A. Which student learning outcome was assessed

The student learning outcomes 1 and 2 were assessed this year.

SLO1: Develop advanced knowledge and skills in using business analytics technology and applications.

SLO2: Build expertise in quantitative methods and tools for business analytics.

B. What assessment instrument(s) were used to measure these SLOs

These two SLOs were both measured by faculty developed rubrics.

C. What participants were sampled to assess these SLOs

The participants were mainly graduate students majored in MS Business Analytics.

D. What assessment results were obtained, highlighting important findings from the data collected

For SLO1, the assessment results show that all of the students being measured have met the expectations to understand technical basics of advanced business analytics technology. In addition, more than 93% of the students being measured have also met or even exceeded the expectations to exhibit medium levels of skills in using the technology and to demonstrate a strong ability to develop relevant applications.

In the assessment of LG2, it is found that the majority of students are capable of building solid quantitative, mathematical and Excel models for business problems and using tools such as Solver to find optimal or heuristically sound solution(s) to these business problems. They are also capable of interpreting and communicating the results clearly. For about 15% of students who do not meet the expectation, it is mainly because they lack a sound grasp of algebra and statistics.

E. How the assessment results were (or will be) used, e.g. changes in course content, course sequence, student advising, etc., as well as any revisions to the assessment process the results suggests are needed

For SLO1, the assessment results are very useful and indicate some actions or changes are necessary. The first is to spend more lecture hours to discuss programming languages and logics so that the students can better understand what exactly a code does and why it does it. The second is to assign more programming problems and tasks to students so that they can have more opportunities to practice and be more confident in developing advanced applications.

To address the issues raised in assessment of SLO2, (1) we have raised the quantitative requirements in admitting students by weighing quantitative portion of GRE/GMAT heavier; (2) more students are asked to take fundamental course in MGMT6015; (3) after conversion, all students will be required to take the pre-requisite course Quantitative Fundamentals for Business Analytics.

III. DISCUSSION OF PROGRAM DATA & RESOURCE REQUESTS

Table 1: Student Demographics of Majors for 2016-17

	Headcount	Percentage
Gender		
Female	45	47.9%
Male	49	52.1%
Median Age	32.3	
Ethnicity		
Asian	32	34%
Hispanic/Latino	4	4.3%
White	14	14.9%
Two or More Races	1	1.1%
Unknown	4	4.3%
Non-Resident Alien	39	41.5%

First Generation College Student		
Yes	43	45.7%
No/NA	51	54.3%

Table 2: Student Level of Majors for 2016-17

	Headcount	Percentage
Class Level		
Freshman		0%
Sophomore		0%
Junior		0%
Senior		0%
Graduate	94	100%

Table 3: Faculty and Course Data for 2016-17

Faculty Data for 2016-17		
	Headcount	Percentage
Full-time tenure/track faculty	5	100%
Course Data for 2016-17		
Number of sections offered	14	
Average section size	32	

A. Discussion of Trends & Reflections

Notable Trends:

Our graduate program is new within the last few years and does not have much enrollment history but it has grown significantly. Many of our students are non-resident aliens (international students) with a roughly equal share of males and females. The next largest share of students are of Asian ethnicity followed by White ethnicity.

Reflections on Trends and Program Statistics:

We should explore ways to increase enrollments of URM students especially Black/African American and Hispanic.

B. Request for Resources

1. Request for Tenure-Track Hires

CBE will request two to four new hires depending on potential retirement announcements. These requests break out as follows:

The accounting and finance department will likely request one to two new hires in the area of finance. The finance group has one faculty member that will likely announce retirement and will need to be replaced. The finance group has another faculty member that has been on full-time temporary assignment in the Dean's office since March 2017. Together, these faculty members have accounted for between eighteen to twenty sections per year. Depending on the outcomes of these situations. it is likely the finance department will need one to two new hires. Separately, the accounting group will carryover of two approved faculty hires from the previous year.

The economics department does not anticipate any hiring requests next year.

The management department will likely request one to two tenure-track hires due to retirement of a faculty member who has normally taught eleven sections per year and the likely retirement of another faculty member who has normally taught nine sections per year.

The marketing department does not anticipate any hiring requests next year.

2. Request for Other Resources

CBE is in process of requesting resources to upgrade the VBT 221 and 222 computer labs. These labs are key to course offerings not only in the BSBA program but also in other CBE programs that rely on the use of technology to learn the theory and practice of business and economics. The request is driven by the need to make the rooms more lecture friendly so students are all facing the professor and to increase the capacity of the rooms to match our normal class sizes.

Office space has become an issue with new tenure-track faculty having to share office space. Going forward we need to explore opportunities for additional office space.