

Business Analytics Course & Curriculum Questions:

Q: Do the online Masters-Degree programs of the various panelists have any synchronous components or is it completely hands off?

A: Janet Fraser WVU: All of the courses in our 30-credit Master of Science in Business Data Analytics can be completed asynchronously, but several classes have weekly lectures that students may attend synchronously or watch later recordings and the final capstone project presentations are conducted live with the project's corporate sponsor.

Q: How much do you all of you integrate programming classes into your business analytics curriculum?

A: John Branner Cape Fear CC: We originally started with SAS and taught that type of programming concurrent to core BA concepts using Excel. We have since moved to training with R and will use that throughout the AAS program starting this fall.

A: Janet Fraser WVU: We don't require external programming classes. We integrate SQL and R into the data analytics courses both at the undergraduate and graduate level.

Q: How big are your programs in terms of students? (Undergrad and grad)

A: John Branner Cape Fear CC: My (AAS) program is quite small (8-12 students). Nearly all of them already have degrees and simply want to enhance their skill set in the workplace.

A: Janet Fraser WVU: Our undergraduate minor has about 60 students, our MS program has about 45 students, and we're seeing a lot of growth in students pursuing graduate certificates or areas of emphasis in Business Data Analytics as components of other graduate programs, especially MBA and MS Accountancy. The undergraduate course has about 100 students per term.

Q: Could you please share your experience related to industry involvement in the curriculum design and as well as after employment feedback on student's performance.

A: John Branner Cape Fear CC: I have an advisory committee that meets annually to review the curriculum, make recommendations, and discuss industry trends and needs. The committee is composed of industry leaders and hiring managers in this area.

A: Janet Fraser WVU: Each year graduating master's students complete Capstone projects for industry partners, these tend to be larger projects that are sponsored financially. Our core undergraduate data analytics course also utilizes projects supplied from industry and are managed as though students are consultants or contractors. We have found enthusiasm from industry and governmental partners for these projects and we work with these entities to make sure we are developing skills that are in demand.

Q: What do you look for in incoming students in statistics background to start your various programs?

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A: *John Branner Cape Fear CC:* The hope is students have skills with Excel and at least MAT 152. MAT 152 is a required course in the program. They typically must have it or take it within the first year.

A: *Janet Fraser WVU:* To declare a minor in Business Data Analytics students must have completed Calculus 1 or Applied Calculus and an introductory course in statistics and probability. In MS applicants we look for these requirements, in addition to either a class or experience with coding and/or additional quantitative coursework.

Q: How do you deal with students with extremely deficient background (inability to solve word problems, solve most basic equations, etc.)?

A: *John Branner Cape Fear CC:* I've started integrating videos for key concepts. This seems to be helpful for those that struggle just a little. If the student still struggles, I might recommend free tutoring we offer at our Learning Resource Center. If the student is "extremely deficient," they may need some remedial classes.

Q: Can you speak to grading strategy / breakdown? E.g., percentage for projects, exams, homework, etc.?

A: *John Branner Cape Fear CC:* It always depends on the course. But I typically grade the (comprehensive) final exam or final project about 40%. The other exercises and projects throughout the semester are relatively weighted.

A: *Janet Fraser WVU:* The specific breakdown differs from course to course, but usually exams are worth 50%, homework is worth 20%, a team project is worth 20%, and attendance and participation are 10%.

Q: I noticed data visualization combined with several different course topics -- what is a good place to include data visualization in these types of programs?

A: *John Branner Cape Fear CC:* All of my BAS courses include some form of data visualization. But I do have one course that is simply Data Visualization. We follow the state standards for course description.

A: *Janet Fraser WVU:* At the undergraduate and MBA level it is central in the introductory class and students will complete a project in Tableau or a similar platform for the class. In the MS program there is a course specifically dedicated to data visualization.

Q: When students take basic intro to BA course, do they complain about content redundancy? They have already taken statistics, quantitative methods and Excel, which you again talk about in intro course...

A: *John Branner Cape Fear CC:* I don't get many complaints. But I try to mix it up with different types of exercises and real-life applications. I also design all of our BAS courses. So, I'm aware of what each course will offer the student. When you have the opportunity to use "live data," take advantage of that and let the students explore the use of their findings.

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A: *Janet Fraser WVU:* I have yet to have a student complain about redundancy. I try to approach the concepts that are at risk of being redundant from a different, applied perspective so instead of repeating, I'm reinforcing the value of what they already know.

Q: Do you offer the "same" course to both BBA and MBA students?

A: *Janet Fraser WVU:* We have courses that are similar at both the undergraduate and graduate level, but no courses that are cross-listed. Seniors with a GPA of at least 3.0 are able to take the graduate Business Data Analytics courses, so we commonly have a few undergrads in many of the courses.

Business Analytics Software/Technology Questions:

Q: How has R instruction been received by the general undergrad student population? In my experience, those that are selecting business analytics can adapt, but those 'non-quants' push back. Also, are you teaching Base R or tidyverse?

A: *Janet Fraser WVU:* I teach base R to undergraduate and MBA students. Some students struggle with it. Asking students to bring their laptops to class and then dedicating class time to installing R and R Studio and walking through examples step-by-step helps, especially when a student who may feel timid about asking a question to the class can lean over to the student next to them and ask for help. We use tidyverse with the MS Business Data Analytics students.

Q: I have not heard anyone saying anything about Academic Solver, but it is part of the textbook... any comments?

A: *John Branner Cape Fear CC:* Personally...I can't stand it. When I started the design and teaching of our BAS program, Solver was free to instructors and students. Then, there was a cloud-based solution, which was hit-and-miss as to whether it would work. Then, they started charging for it. I refused to make my students pay for something that wasn't reliable. That may seem stubborn but that's just my opinion. I think R can do it all. We'll see.

A: *Janet Fraser WVU:* I used to like it for MBA students, but I've had better luck with R and the students eventually all really like R because they feel like it is a distinct skill.

Q: Is teaching Excel is doing students a disservice, and I don't really think so. A lot of employers ask for it. We teach advanced Excel, including macros, power pivot, access to data from multiple data sources, access to big data (such as Hadoop), etc.

A: *Janet Fraser WVU:* Many employers are still asking for Excel skills and I think it's important to acknowledge that. I've found that demonstrating a concept in Excel is a good way to teach a concept and then having students transition to R to master the concept improves their skills with both, while also improving conceptual understanding.

For answers to additional questions, watch the recorded sessions of McGraw-Hill's Innovations in Teaching Business Analytics Online Summit, here: <http://info.mheducation.com/Business-Analytics-Summit.html>