

UNH Manchester to Launch the Region's Only On-Campus, Undergrad Analytics Degree Program

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The University of New Hampshire Manchester will become a big player in [data science](#) education this fall when it launches its new [Bachelor of Science in Analytics](#) program—the region's first on-campus, bachelor's degree program in data analytics, and one of just a handful of such programs in the country.

The UNH Manchester Analytics program will focus on both cutting-edge technical skills and essential “soft” skills—like effective communication and collaboration—that are best taught and learned in on-site programs, and not online.

“Our program is designed to prepare the next generation of data scientists and analytics professionals,” says program coordinator [Jeremiah W. Johnson](#), Ph.D., a senior lecturer in mathematics at UNH Manchester. “It will incorporate experiential education, professional development, and projects and work experience at a greater level than that typically seen in a Bachelor of Science program.”

Another important feature that sets the UNH Manchester program apart: Students will use the industry-standard software, SAS, developed by the [Statistical Analysis System Institute](#) for use in advanced analytics, business intelligence, data management, and predictive analytics. Students will have the opportunity to qualify for SAS certification, greatly enhancing their employment prospects.

The goal, Johnson says, is “to prepare students for a seamless transition to the workplace.”

Intense Demand for Data Analysts

The demand for qualified analytics professionals is growing rapidly, says Johnson, at the local, regional, and national levels, and across all sectors of the economy.

With data the chief product of the digital era, industries from finance to engineering to health care are wrestling with how to distill and analyze the vast quantities of it available, and hiring analytics professionals to help them do it.

Johnson points to research from the [McKinsey Global Institute](#) indicating that by 2018, the U.S. will face a shortage of between 140,000 to 190,000 people with the technical skills necessary to work effectively with data. That need is especially critical at the bachelor’s degree level, according to the [Education Advisory Board](#), which documented a 32 percent increase in demand for college graduates with data analytics skills from 2010 to 2013.

While an estimated 70 graduate-level analytics programs have been developed around the U.S. in recent years, Johnson says there are fewer than 20 bachelor’s degree programs, “even though the skill set required for many data positions is not actually at the graduate-degree level. This is a rapidly evolving field. While there are senior positions where the ideal candidate will have a Ph.D. in computer science, there are many other positions where what’s needed is some knowledge of both statistics and computer science, and the know-how to put them together. People with a bachelor’s level degree will be very well positioned.”

The need for analytics professionals with various levels of education was confirmed by a series of focus groups that UNH faculty conducted with executives from across New England, as well as business leaders in Manchester. Executives also cited the need for professional skills such as critical thinking, the ability to present information effectively, and to work well in groups.

Some of those same executives have agreed to serve on the new Analytics program's Advisory Board. "The more dialogue we have between industry and academia, the better," says Johnson. "Our needs are aligned. We want to produce the kinds of graduates who can go on to work for their companies, so we want their feedback on the program."

How the Program Was Developed

UNH first began exploring the feasibility of an Analytics degree program in 2013. After careful study, proposals were made to launch a Bachelor of Science program at the Manchester campus, and a Master of Science program in Durham.

To research best practices, UNH program planners visited one of the country's top data science programs, North Carolina State University's Institute for Advanced Analytics, whose graduates boast a 100 percent employment rate within three months of graduation, and average starting salaries of \$96,600.

What makes the NC State grads so sought-after, says Johnson, is that the institute emphasizes both "a strong technical skill set and also a high level of professionalism. In industry, data scientists and analysts work as teams to solve problems, so interpersonal skills can be as crucial as technical skills. We realized we wanted to emphasize both skill sets with our students."

To road test this pedagogical model, UNH created a month-long pilot program, the 2014 Summer Analytics Institute. Held on the Durham campus, the Summer Analytics Institute immersed students in both data analytics and team projects. "It was very well received, both by students and faculty," says Johnson. It also helped refine curriculum plans for the full-time undergrad program.

What Students Will Learn

Johnson emphasizes that the new UNH Manchester Analytics program is *not* just for hard-core computer jocks. "It's designed to start at the level of calculus and with an introductory programming course," he explains. Nor, he adds, is the program targeted to a single industry. "It provides a flexible, practical skill set that can be applied widely. If you like problem solving and thinking quantitatively, you can use data analytics in broad range of fields."

Following foundational courses in computer science, mathematics, and business, Analytics majors will take a sequence of five data analytics courses, all of which will incorporate the kind of team-based projects found in business settings—particularly the capstone course, where students will team up to solve a real-world analytics problem. They will also complete a professional internship, and take a series of specialization courses (for example, in economics or biological sciences) to give them discipline-specific expertise.

Students will learn:

- How data is used in guiding decision-making in industry;
- How data is generated, stored, and accessed, and data security maintained;

- How to use statistical methods to derive actionable information from data;
- How to use multiple programming languages, including Python and R;
- How to use multiple statistical and data analysis software programs, including SAS;
- How to communicate detailed, technical information to a variety of audiences clearly and concisely, without the use of jargon;
- How to work effectively, both as an individual or as a member of a team;
- How to successfully lead a team; and
- How to adapt to a dynamic, rapidly changing work environment.

However workplaces evolve, says Johnson, “there’s only going to be more and more demand for people who can work with computers and data at a high level. This is a cutting-edge field, and our graduates are going to be right there at the forefront.”

[Find out more about UNH Manchester's Analytics program.](#)

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