**The Robert A. Foisie School of Business at WPI** is rooted in WPI's strengths in technology, engineering, and science, and is known for developing innovative and entrepreneurial leaders for a global technological world. Whether part of an engineering degree or centered in the School of Business, graduate programs are designed to meet the needs of professionals in technology-focused careers.

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**All Engineers Need Business Knowledge**

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Aucoin points out that six of the 11 competencies that the Accreditation Board for Engineering and Technology, Inc. (ABET) says should be required of anyone who graduates with an engineering degree are soft-business skills. They include:

- An ability to function on multidisciplinary teams.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively.
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- Recognition of the need for, and a willingness to engage in, life-long learning, and
- Knowledge of contemporary issues.

“**When you’re an engineer, technical prowess is the focus,”** Aucoin says. “It’s a rude awakening when you discover that real work in an organization is very different. It’s more about how well you can navigate the idiosyncrasies of people.”

Fasano adds that business skills are...
required of engineers, because engineering is a very people-intensive, management-heavy field. 

"In engineering firms, you work on projects," Fasano says. "There are a lot of moving parts. You’re part of a team, and you’re typically working with consultants and customers." 

Fasano speaks from personal experience. 

"There’s a real possibility that you will have to use business skills very early in your career," he says. "I started at a very small company with a handful of people and I was doing everything."

The Role of Education

Fasano says it would be difficult to add business courses to an undergraduate education, given the extensive technical knowledge required to learn engineering, but Aucoin adds that with a project-based, education-based, such as is provided at WPI, engineers can learn valuable business skills, such as working in teams.

"Engineering focuses too much on the technical side," according to Aucoin. "The engineering undergraduate curriculum is very intense; there’s complicated math and it’s jammed into the schedule. Where do we learn to practice being part of teams? For most people, it’s trial and error."

In addition to being project-based, WPI is integrating entrepreneurial mindset learning (EMU) into its engineering curriculum, with the help of a grant from The Kern Family Foundation. Still, an MBA, in combination with personal experience, may be the best training for becoming a manager.

"In my coaching of hundreds of engineers, I’ve recognized that there’s a lack of business knowledge, and often a lack of the interpersonal and presentations skills you can get from an MBA," Fasano says. "Those who have MBAs have more career opportunities because they have the interpersonal and presentations skills you can get from an MBA, "

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"I’m very surprised to hear myself say that.

While not every engineer has the aptitude for management, Fasano says. For example, as manager, a former chemical engineer who is now managing a civil engineering company, Albani had already run 15 years of management experience when he decided to enroll in The Innovator’s MBA at the Foisie School of Business. 

"I was a manager based on trial by fire, seminars, and learning on the job," he says. "I needed to substantiate that with expertise, with people’s findings and best practices."

When one of his professors required Albani to keep a journal, the thought was "quit" and not very useful. In one entry, though, he observed that his company had expertise it was either not selling or not being compensated for; his professor encouraged him to discuss his observation with his CEO.

"A year later," he says, "that concept became the cornerstone of our value statement and marketing strategy."

Based on its new marketing strategy, his company not only became far more profitable, it also increased its productivity by 12% and revenues by 45%.

Consultant Michael Aucoin encourages engineers who are seeking to make the transition from engineering to management to view it as just another engineering project.

"Management is part of a circle," according to Aucoin. "The engineering part has to do with things, management has to do with tasks, and leadership is about the heart. It’s about motivation and vision. It’s helpful for engineers to understand that and to see all of this as a system. Once they figure out an organization is a system, they make the connection and then get it. Engineers know a lot about systems."

Within this system, new managers need to learn how to work with employees to complete tasks. "Personal goal-setting is paramount," he adds. "It’s important to see what your legacy is going to be. Do you want to be known for developing a technically elegant product? Or do you want to be known for leading your company to greater success?"

Consultant Anthony Fasano suggests seeking advice from others that have made the transition successfully.

"It’s important to know what to expect, and to develop the skills and knowledge needed," Fasano says. For example, as manager, a former engineer will need to be able to deal with human resource issues, including employees’ personal issues and emotions. The manager will need to learn to delegate and to be clever about expectations when doing so.

Know When You’re Ready

Would-be managers should not move up unless they feel ready to contribute to their organization on a larger scale, Fasano adds, and they should want to do so, rather than moving into management because it’s expected of them. Engineers who believe they are ready to move up should tell their bosses.

"There are plenty of opportunities in management," according to Fasano. "Sometimes you just have to ask for them."

When engineers make the transition to management, learning what not to do can be as important as learning what to do.

"Don’t be afraid to let go," says Alexandra Francois-Saint-Cyr, an engineering manager who is completing work on The Innovator’s MBA. "Engineers who become managers should not feel like they have to be the expert all the time. Instead, they should ask themselves what insights they can provide. That will make them more valuable to their team."

Those who choose to make the transition to management should consider pursuing an MBA, according to Hemant Albani MBA ‘15, who should ask themselves why they are doing it and what they expect to get out of it. They should research programs, find one that suits their needs, and not make excuses to delay enrolling.

"There will never be a ‘right time’, when you have enough money and enough time in your life," Alabani says. "If it makes sense, just do it."
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While not every engineer has the aptitude for management, Aucoin and Fasano agree that management can be taught—and that those who are taught will find it less difficult to make the transition from engineer to manager.

Students Credit MBA for Helping Them

Two students and a graduate of the Foisie School of Business credit The Innovator’s MBA with helping them achieve greater career success, while becoming better managers.

A Profitable Experience

Profits at DiPrete Engineering in Cranston, R.I., have increased by more than 400 percent since Hemant Ajbani MBA ’15 joined the company as its COO three years ago. And he gives much of the credit to what he learned from The Innovator’s MBA—and especially to a school assignment he first thought was a waste of time.

A former chemical engineer who is now managing a civil engineering company, Ajbani already had 13 years of management experience when he decided to enroll in The Innovator’s MBA at the WPI School of Business. “I was a manager based on trial by fire, seminars, and learning on the job,” he says. “I needed to substantiate that with experts’ findings and best practices.”

When one of his professors required Ajbani to keep a journal, he thought the idea was “quaint” and not very useful. In one entry, though, he observed that his company had expertise it was either not selling or not being compensated for; his professor encouraged him to discuss his observation with his CEO.

“A year later,” he says, “that concept became the cornerstone of our value statement and marketing strategy.”

Based on its new marketing strategy, his company not only became far more profitable, it also increased its productivity by 12% and revenues by 45%.

“When I came here, I was trying to deconstruct and reconstruct how we do business,” he says. “I didn’t know how I would do it or if I would succeed. With my team, we have succeeded beyond our imagination.”

Ajbani studied chemical engineering as an undergraduate at Bombay University and earned his master’s degree at the University of Massachusetts. He advanced from manager to director to chief operating officer while working in management positions at three companies before beginning his MBA. Living in Worcester, he enrolled in the Foisie School of Business because of its reputation, ranking, and location.

“Eight months in, one of my fellow students asked me what I think about the MBA program. I said, ‘It’s changing me. Before I change everybody else, do you want to be known for leading your company to greater success?’”

Ajbani believes his MBA is not only helping him to reach his full potential, but is also helping him to help others reach their full potential.

“My key learning is about management, but I also learned more about myself and became a better person.”

Consultant Anthony Fasano suggests seeking advice from others that have made the transition successfully.

“It’s important to know what to expect, and to develop the skills and knowledge needed,” Fasano says. For example, as a manager, a former engineer needs to be able to deal with human resource issues, including employers’ personal issues and emotions. The manager will need to learn to delegate and to be clear about expectations when doing so.

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They should research programs, find one that suits their needs, and not make excuses to delay enrolling.

“There will never be a ‘right’ time, when you have enough money and enough time in your life,” Ajbani says. “If it makes sense, just go do it.”

Learning to Let Go

One of the biggest challenges of management for Alexandra Francois-Saint-Cyr, an application engineering manager at Mentor Graphics in Marlborough, Mass., has been to let go of her technical work and focus on management.

“I definitely was hoping for a more managerial position,” she says, “but it was a struggle. I’ve always seen myself as more hands-on. Now it’s more challenging to be sharp on the technical side.”

Classes in leadership and organizational behavior at the Foisie School of Business helped her adjust and now she feels comfortable serving as a mentor without playing a technical role.

“The way I see it, you’re not helping the engineers if you’re doing their work,” she says. “It’s more a matter of traveling with them, giving them feedback, and adding a few points if needed.”

Francois-Saint-Cyr came to the United States in 1999 to obtain her master’s degree in mechanical engineering from the University of Central Florida and in 2001 she became an application engineer for Flomerics in Southborough, Mass., a world leader in simulation and computer-aided engineering (CAE) for analysis of fluid flow, heat transfer, and electromagnetic radiation.

She became a supervisor in 2006, then progressed to application engineering manager in the Mechanical Analysis Division in 2008, when Flomerics was acquired by Mentor Graphics. Over that time, even when I was managing three people, that I needed a better understanding of the business aspects,” she says, “I felt I needed the MBA to help me become a better manager.”

The Innovator’s MBA enables her to fit her classes into her schedule, since much of the work is done online, but she especially looks forward to the on-campus meetings with her cohort group, because everyone has a different perspective. (continued on page 4)
To succeed in today’s technology-oriented business world, it’s not enough to be a left-brain technician or a right-brain people person. Today, you need to use your whole brain.

Experts say that even entry-level engineers need to combine the hard knowledge of engineering with the soft skills of business. And, as their careers advance, the soft skills become more important.

Whether you want to focus your entire engineering career on the technical side of the business or, like most, you want your career to advance into management, experts say there are plenty of reasons to also pursue a business education. Among them:

• Most engineers eventually advance into management. Earning a business degree will prepare you for the position and provide you with a competitive advantage over your peers.

• By taking business courses, you will find out whether you want to move into management and whether you have the aptitude for it.

• Engineers at all levels need to have an understanding of business to work effectively, as engineers typically work in teams and directly with customers.

• Engineers advance into management with having taken a single business course. In an informal survey, David Loftness, Twitter’s former director of engineering, found that only one out of every 15 engineering managers had received formal management training before becoming a manager.

• Most engineers—and many employers—assume that if they can work successfully as engineers, they can also succeed in management positions, that’s not always the case.

• The assumption that because you’re a good engineer, you will be a good manager does not always hold true,” says Anthony Fasano, CEO of The Engineering Career Coach in Ridgewood, N.J. “They’re two different things. You can be a good manager and not the best technical engineer in the world, but you need to have enough understanding of the technical side. You may also be a great engineer and not a good manager.”

Management requires different skills than engineering. Just as a manager doesn’t have to design bridges or electrical systems, an engineer doesn’t have to manage employees or a budget. Engineers don’t make strategic decisions about which markets to enter, how to price a new product, who to hire, or whether to pursue an acquisition. People skills, financial savvy, and the ability to communicate and negotiate effectively are all invaluable management skills.

Those who aspire to lead need to do even more. Michael Auscoin, president of Leading Edge Management, LLC in College Station, Texas, makes a distinction between managing and leading, explaining that managers manage tasks, while leaders seek change for the better. Leaders need to motivate their staff, and overcome bureaucratic and political obstacles. They need to get the employees to work together toward common goals. "Understand what the major factors are that drive people—how do you have a leader taps into,” Auscoin says. “Those factors usually involve the desire for meaningful work. Your role is to seek greatness for yourself, and greatness is within anyone’s reach.”

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