

Graduate Certificate in Engineering Management

The competitive Engineering Management program bridges the gap between technology and business by providing students with the technical expertise and leadership skills needed to advance their careers. The 15-unit Graduate Certificate in Engineering Management is available for part-time, working professional students.

This program brings together Washington University faculty and industry-leading experts to help students learn to strategize, lead, make informed decisions, manage financials, and leverage both existing and emerging technology. The courses prepare individuals to utilize common management tactics across all of the engineering disciplines.

Graduate Certificate: 15 units, 10-15 months to complete

Email: sever@wustl.edu
 Website: <https://sever.wustl.edu/degree-programs/engineering/index.html>

Faculty

Program Director

John Bade
 Director of Graduate Studies, Engineering Management and Project Management
 PhD, Engineering, Missouri University of Science & Technology
 MBA, Saint Louis University
 ME, Missouri University of Science & Technology

For a list of our program faculty (https://sever.wustl.edu/faculty/#engineering_management), please visit our website.

Requirements

Graduate Certificate in Engineering Management

Total units required: 15

In order to earn the certificate, all courses must be passed with a C- or higher. In addition, a student must have a cumulative grade-point average of at least 2.70 over all courses applied toward the certificate.

Code	Title	Units
Required: 15 units		
ETEM 504	Engineering Management & Financial Intelligence	3
ETEM 506	Technology Strategy & Marketing	3

ETEM 510	Understanding Emerging & Disruptive Technologies	3
ETEM 582 or ETEM 581	Human Performance in the Organization Leading in a Technology-Rich World	3
ETEM 530	Project Planning Methodologies	3

Courses

Visit online course listings to view semester offerings for T55 ETEM (<https://courses.wustl.edu/CourseInfo.aspx?sch=T&dept=T55&crslvl=5:8>).

T55 ETEM 504 Engineering Management & Financial Intelligence

Discover the full picture of how business works within the organization. This course walks the student through the complete business cycle -- the roles the various functions play in a business operation as well as how information is used to make business decisions (e.g. financial data, marketing data, production data, economic data). To bring these learnings to life, this course also uses management simulation games and classroom competitions. Includes strategy, product planning and management, sales and support, research and development, manufacturing and supply chain, with particular emphasis on accounting, finance and the use of financial statements. Credit 3 units.

T55 ETEM 506 Technology Strategy & Marketing

Learn the art and science of technology-rich strategy and marketing. Every business rises and falls on the value it brings to the customer and the value it simultaneously brings to the business itself. The engineer that understands and can communicate strategy and marketing is powerful! Business, technology and research budgets are allocated based on this value proposition, whether the commercialization or operationalization of the technology is 1 year out or 10 years out. Prerequisite: T55 504. Credit 3 units.

T55 ETEM 510 Understanding Emerging & Disruptive Technologies

We live in an era of rapid technology innovation and disruption. Blockbuster was the darling of Wall Street in 2004 and filed for bankruptcy in 2010. Blockbuster CEO in 2008: "Neither Redbox nor Netflix are even on the radar screen in terms of competition." Blockbuster is not alone in their blindness. Microsoft laughed off the first i-phone, and laughed off Google. IBM laughed off the first personal computer. These should be a horrible warning to all business leaders. Numerous technologies are threatening disruption today: block chain, Internet of Things (IoT), artificial intelligence, autonomous vehicles, unmanned aerial vehicles (UAVs), 3D printing, 5G wireless networks, gene editing. Understanding what they are and how they might disrupt will make or break countless companies in the coming years. Credit 3 units.

T55 ETEM 530 Project Planning Methodologies

Build your expertise with today's critical project management methodologies in our fast-paced world. Variations of waterfall are widely used in industry, but new uses of agile are being discovered every day, both inside and outside of software-based organizations. This course exposes the student to the fundamental and emerging techniques and tools used to manage successful projects of various sizes and complexity -- managing cost, schedule, quality, risk, solution and requirements -- while adapting to today's fast-paced and uncertain business environment. The primary focus of this course is on agile. Credit 3 units.

T55 ETEM 581 Leading in a Technology-Rich World

Leadership has fundamentally changed from top-down, autocratic and task-focused to collaborative and people-focused in just a few generations. Great senior leaders now get their people to do the greatest things. They must constantly learn, think innovatively, move and adapt very quickly, and collaborate over short and long distances. Students will learn new leadership skills, explore their individual leadership styles, and discuss the senior leadership challenges in an evolving tech-rich world.

Credit 3 units.

T55 ETEM 582 Human Performance in the Organization

Have you ever wondered why some careers soar and others stall? Why you find it easy to build relationships with some people - but not others? Why some teams function well and consistently outperform others? Are you curious about what kind of manager you are, or will be? Do you want to know more about how organizations decide who to hire and who to promote? Human Performance in the Organization is designed to help you answer these questions. The content is a mix of relevant theory, personal reflection, and practical application. Our goal is to understand human performance at all levels of the organization. Topics include performance and career management; negotiation and influence; power and politics; mentoring and coaching; high-performance teams; conflict management; talent development and succession planning; and change management.

Credit 3 units.
