MASTER OF ENGINEERING
MANAGEMENT (MEM)

Dept. of Civil Engineering, School of Engineering and Graduate School of Business, Nazarbayev University
MEM Program

• The Master of Engineering Management (MEM) degree program is a specialized degree program offered by the School of Engineering in partnership with the Graduate School of Business (GSB) at Nazarbayev University.
OUTLINE (1/2)

• PROGRAM AIM
• EDUCATIONAL OBJECTIVES
• WHAT YOU CAN DO WITH A DEGREE IN ENGINEERING MANAGEMENT
OUTLINE (2/2)

- CURRICULUM
- FACULTY
- MEM vs. MBA
The aim of the program is to prepare students with the technical skills and business knowledge for leadership of engineering-related units of enterprises with innovative solutions for complex business problems.
Educational Objectives (1/2)

• Effectively function on and lead multidisciplinary teams.
• Apply the elements of leadership within an organization.
• Analyze and use company data and resources to make effective decisions.
• Identify and manage enterprise risk.
• Use your intellectual, analytical and critical abilities, and to employ these abilities in general and in the management of an enterprise.
Educational Objectives (2/2)

- Effectively manage operations and projects, in terms of costs, planning and technical performance.
- Uphold the highest professional and ethical standards and implement principles of sustainability, safety and social responsibility in the management of an enterprise.
Emphasis on

- The program emphasizes adapting and applying analytical skills and scientific knowledge into business practice.
- Students learn about project management, operations management, supply chain management, engineering management, engineering economy, quality and lean management, marketing, R&D management, new product development, entrepreneurship, business ethics, business strategy, business communication, leading change and innovation, and many other aspects of managing a successful business.
WHAT YOU CAN DO WITH A DEGREE IN ENGINEERING MANAGEMENT (1/3)

An engineering management degree qualifies professionals for a diverse array of jobs, including:

• **Engineering Project Manager.** This professional has direct authority over the actions of everyone on the work site. A combination of engineering knowledge and business acumen is essential.

• **Senior Lead Analyst.** This specialist ensures that engineering teams reach the most efficient outcomes on their assigned tasks.
WHAT YOU CAN DO WITH A DEGREE IN ENGINEERING MANAGEMENT (2/3)

• **Cost Systems Analyst.** A combination of financial management knowledge and engineering skills is necessary for this position. These individuals have a direct impact on the bottom line of large-scale projects.

• **Construction Management Engineer.** A construction management engineer has authority over the planning and building of a wide variety of structures in the construction industry.
WHAT YOU CAN DO WITH A DEGREE IN ENGINEERING MANAGEMENT (3/3)

- **Industrial Management Engineer.** This specialist ensures that industrial emissions are moving safely through the production system.
- **Supply Chain Manager**
- **Quality Manager**
- **Operations Manager**
MEM PROGRAM OVERVIEW

• Established in 2014
• Enrollment: 25 students per year (on the average)
• Faculty: 15 professors from SEng and GSB
• Location: NU Astana Main Campus, Block 3/6, Block C3
• More on Recruitment and Admissions and Financial assistance at the MEM Web site:
  
  https://seng.nu.edu.kz/programs/graduate-programs/master-of-engineering-management/
STUDENT FINANCIAL ASSISTANCE

• All students admitted to the Engineering Management program are eligible for tuition and a stipend funded by the government.

• For both 2014-2015 and 2015-2016 and 2016-2017 and 2017-2018 academic years, the Ministry of Education and Science approved funding for 25, 25, 29 and 22 students, respectively, in the SEng enrollment plan.
• The primary source for recruitment of students is **industry**. Candidates would typically have an engineering or science degree with 3 to 5 years of work experience at companies with engineering-related activities.

• Applicants to the program must have an **undergraduate degree from one of the following disciplines including, but not limited to: engineering, construction, architecture and various science and technology degrees.**

• Deficiencies in subject areas will be made up through appropriate prerequisite course work.
• Total Number of ECTS = 120
• All 8 GSB Courses of the 2^{nd} Semester are block-based delivered in 3 weeks (4 ECTS each).
• All SEng courses are long Semester courses delivered in 15 weeks (6 ECTS each).
• The Capstone Project is done at the 4^{th} Semester (16 ECTS).
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<thead>
<tr>
<th>SEMESTER 1</th>
<th>FALL: August – November</th>
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<tbody>
<tr>
<td>Engineering Core</td>
<td>Advanced Statistics and Probability</td>
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<tr>
<td>Engineering Core</td>
<td>Research Methods</td>
<td>6 ECTS</td>
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<tr>
<td>SEng MEM Core</td>
<td>Engineering Management and Engineering Economy</td>
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<td>SEng MEM Core</td>
<td>Project Management</td>
<td>6 ECTS</td>
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<td>Elective MEM Course I</td>
<td>Globalization and Engineering/Systems Engineering</td>
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<td>SEMESTER 2</td>
<td>SPRING: January – April</td>
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<tr>
<td>GSB Core</td>
<td>Accounting</td>
<td>4 ECTS</td>
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<td>GSB Core</td>
<td>Management of Organizations</td>
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<td>GSB Core</td>
<td>Finance</td>
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<td>GSB Core</td>
<td>Marketing</td>
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<tr>
<td>GSB Core</td>
<td>Business Strategy</td>
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<td>GSB Core</td>
<td>Entrepreneurship</td>
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<td>GSB Core</td>
<td>Leading Change</td>
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<td>GSB Core</td>
<td>Business Communication</td>
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<td>SEMESTER 3</td>
<td>FALL: August – November</td>
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<td><strong>SEEng MEM Core</strong></td>
<td>Production and Service Operations Management</td>
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<td><strong>SEEng MEM Core</strong></td>
<td>Engineering Decision Tools</td>
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<td><strong>SEEng MEM Core</strong></td>
<td>Supply Chain Management</td>
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<td>Elective MEM Course II</td>
<td>Systems Engineering/Globalization and Engineering</td>
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<td>Elective MEM Course III</td>
<td>Big Data and Information Management</td>
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<td>SEMESTER 4</td>
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<td>Elective MEM Course</td>
<td>Quality and Lean Management</td>
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<td>SEng MEM Core</td>
<td>Managing Product and Service Development</td>
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<td>SEng MEM Core</td>
<td>Capstone Project</td>
<td>16 ECTS</td>
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## SEng Elective Courses

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<thead>
<tr>
<th>SEng Elective</th>
<th>ELECTIVE MEM COURSES</th>
<th>ECTS</th>
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<tbody>
<tr>
<td>SEng Elective I</td>
<td>Knowledge and Innovation Management</td>
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<tr>
<td>SEng Elective II</td>
<td>Globalization and Engineering</td>
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<tr>
<td>SEng Elective III</td>
<td>Big Data and Information Management</td>
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<td>SEng Elective IV</td>
<td>Quality and Lean Management</td>
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<td>SEng Elective V</td>
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<tr>
<td>SEng Elective VI</td>
<td>Operations Research Methods</td>
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FACULTY

Seng

• Michael Yong Zhao (Professor);
• Mohammad S. Obaidat (Professor);
• Christos Spitas/Soo Lee Teh (Professor);
• Chrysoleon Papadopoulos (Professor);
• Ali Turkyilmaz (Associate Professor);
• Mariza Tsakalerou (Assistant Professor);
• Yerkin Abdildin (Assistant Professor);
• Konstantinos Kostas (Assistant Professor);
• Prashant Jamwal (Assistant Professor);
• Abid Nadeem (Assistant Professor);
• Dimitrios Emiris (Visiting Professor)

GSB

• Bharat Sarath (Visiting Professor in Accounting);
• Marek Jochec (Associate Professor in Finance);
• Ralitza Nikolaeva (Associate Professor in Marketing);
• Chet Borucki (Professor in Business Strategy);
• Dmitry Khanin (Associate Professor in Entrepreneurship and Management);
• Cinzia Colapinto (Assistant Professor in Innovation and Change);
• Jenifer Lewis (Associate Professor in Business Communication)
Students frequently ask about the difference between the MEM and an MBA. In choosing between these two degrees, students should ask, “What are my career goals?”

If you are currently working as an engineer or in a technology-intensive field and your goal is to move into a supervisory, managerial, or executive role, then the Master in Engineering Management (MEM) is likely your best choice.

This will lead to high level positions such as Chief Engineer, Chief Technology Officer, Director of Research and Development, Supply Chain Manager, Operations Manager, Quality Manager.
• If, on the other hand, you desire to move from your current role or company, perhaps into a new venture or startup business, then an MBA is probably the better direction.

• In other words, if you envision yourself striving to provide the best product or service your company can offer its customers, then the Master in Engineering Management degree is optimal. If you envision yourself concerned about delivering the best possible financial performance or highest return on investment for your company and shareholders, then an MBA is probably a more suitable path.
Contact

For more information about MEM program, please visit the following website:

https://seng.nu.edu.kz/programs/graduate-programs/master-of-engineering-management/

or send an email directly to the Program Coordinator, Prof. Chrysoleon T. Papadopoulos:

chrysoleon.papadopoulos@nu.edu.kz
WELCOME TO MEM!