



MITsdm

system design and management

System Design and Management Program
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MIT System Design and Management Program

Leadership, innovation,
systems thinking



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The System Design and Management Program reserves the right to modify the information described in this brochure at any time. We continually work to improve our program options and curriculum, and the inclusion or exclusion of any information in this publication does not imply any commitment on the part of MIT or the SDM program.

MIT's System Design and Management Program is operated jointly by MIT Sloan School of Management and MIT School of Engineering and resides within MIT's Engineering Systems Division.

For the latest information about SDM, please visit sdm.mit.edu.

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about MIT

MIT's mission is to advance knowledge and educate students in science, technology and other areas of scholarship that will best serve the nation and the world in the 21st century.

The Institute is committed to generating, disseminating and preserving knowledge and to working with others to bring this knowledge to bear on the world's great challenges. MIT is dedicated to providing its students with an education that combines rigorous academic study and the excitement of discovery with the support and intellectual stimulation of a diverse campus community. We seek to develop in each member of the MIT community the ability and passion to work wisely, creatively and effectively for the betterment of humankind.

Currently 64 faculty and staff members belong to the National Academy of Engineering, 61 to the National Academy of Sciences, 22 to the Institute of Medicine and 119 to the American Academy of Arts and Sciences. The Nobel Prize has been awarded to 62 present and former members of the MIT community.

new horizons in leadership

Created in 1996 in response to industry's need to develop the next generation of leaders, MIT's System Design and Management Program (SDM) incorporates a systems approach to leadership and innovation.

SDM educates technically grounded professionals in using systems thinking to tackle the complexities of competing in global markets while leading their organizations to success.

SDM combines cutting-edge courses from the MIT Sloan School of Management and MIT's School of Engineering. Innovative distance learning, flexible matriculation options and an interdisciplinary perspective enrich the experience. SDM fellows do not earn an MBA—they go beyond the MBA to receive a master of science degree in management and engineering granted jointly by both schools.

SDM fellows are among the best and brightest of their generation, carefully selected for the ability to think holistically and to succeed in SDM's demanding, interdisciplinary curriculum. Upon graduation, SDM alumni capitalize on their state-of-the-art skills in systems thinking and innovation to take on leadership roles in a wide range of organizations.

All SDMs participate in a vibrant lifelong learning community: students, alumni, faculty and industry partners share knowledge, work together to improve the SDM program and support each other in creating new strategies for success.

SDM is for those who want to think beyond traditional frameworks, lead across organizational boundaries and inspire others to collaborate and innovate in technical and nontechnical arenas.

New engineering leaders

The System Design and Management Program resides within MIT's Engineering Systems Division, an interdisciplinary unit dedicated to transforming engineering education, research and practice to address whole systems. ESD's graduate programs, including SDM, prepare engineers to apply systems thinking across boundaries, enabling them to provide strategic leadership in addressing the complex challenges facing the world today.

To learn more about ESD, visit esd.mit.edu

After conducting extensive research on programs at other universities, I felt that MIT's SDM was the program that best integrated management and technical innovation into a systems approach that would best serve me in my current job and in any position I hold in the future.

Letitia Soto
SDM fellow and a lieutenant in the US Navy



career-compatible graduate education

The centerpiece of SDM's portfolio is its rigorous 13- to 24-month graduate program. Built on a foundation of core courses in system architecture, systems engineering, and system and project management—and integrated with classes in engineering and specially designed courses in management—this program leads to a master of science degree granted jointly by MIT Sloan and the School of Engineering. Accepted applicants can enroll as full-time on-campus students or as part-time commuters/distance learners.

No matter which option they choose, all SDM fellows are required to attend SDM's January session, which entails a full month on campus at the beginning of the program, and one-week seminars held each semester on campus around the middle of each term. In addition, all SDMs work together in global teams on class assignments throughout the program.

SDM Master's Program Options

On campus (full time)

Students in SDM's on-campus program complete their degree requirements in 13 to 18 months. Many opt for the four-semester option to make the most of MIT and its resources.

Commuter (24 months)

SDM's commuter option is a 24-month (six-semester) program for local students that combines a comprehensive, career-and-family-compatible graduate program with the benefits of being on campus at MIT.

SDM commuters, like their on-campus and distance counterparts, must attend SDM's monthlong full-time January session plus three to six one-week seminars held on campus around the middle of each term.

SDM commuter students may take distance classes once the site they wish to use for videoconferencing has been certified by MIT. Distance rates for the semester will apply.

Please visit the SDM website at sdm.mit.edu for more information.



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Distance (24 months)

The SDM distance-learning option is a 24-month program—MIT's first graduate-degree program offered primarily at a distance. It maintains the integrity, high academic standards and individual engagement of MIT's traditional in-residence programs.

SDM's distance-learning approach enables professionals to pursue a graduate-level education that is compatible with career and family obligations by obtaining most instruction at their worksites. Distance students can immediately apply material learned in class to the challenges facing their organizations. Moreover, working in globally dispersed teams, using state-of-the-art distance education technologies and learning from classmates in a wide range of industries provides SDM fellows with hands-on training in maximizing new technologies and transferring knowledge throughout an organization.

On-campus components for all SDM distance students include:

- One semester in residence at MIT (an Institute requirement)
- One month on campus for the January session (required of all incoming SDM students)
- Six one-week seminars held on campus around the middle of each term
- Participation in live, interactive classes via videoconferencing with on-campus counterparts

Please visit the SDM website at sdm.mit.edu for more information.

The US Army—and the world at large—needs people who understand systems thinking and can manage and lead in complex situations. Deepening my understanding of complex systems will help me better serve my troops and my country.

Nathan Minami
SDM fellow and a major in the US Army

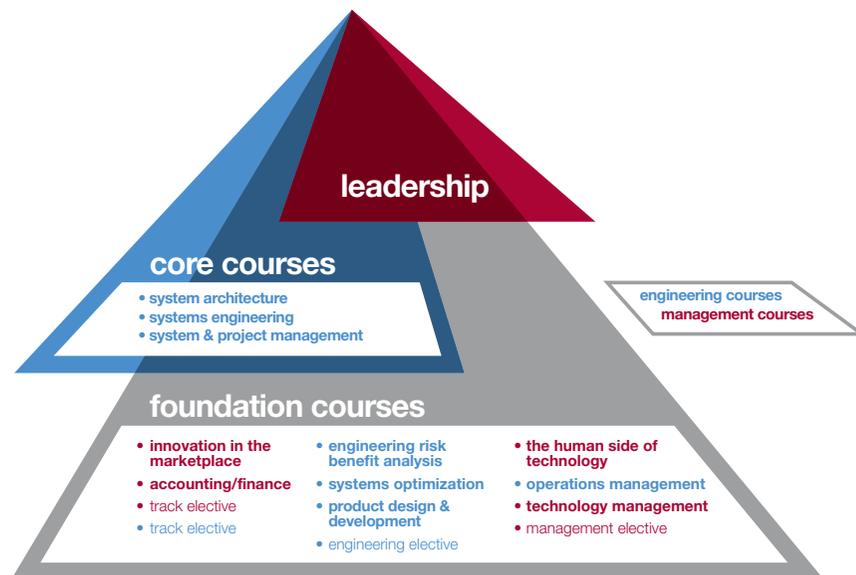


beyond the MBA

SDM's three-tiered curriculum gives all students a common understanding of what it means to take a systems approach to the world while allowing them the flexibility to customize the program to support individual professional goals. SDM fellows describe the curriculum as rigorous, demanding, eye-opening, life-changing and rewarding.

Required and elective courses in management and engineering—plus workshops, seminars, speakers and exercises in leadership—are interwoven with classes in system architecture, systems engineering, and system and project management. These integrative courses teach students the art and science of big-picture thinking, while design challenges and hands-on class projects provide opportunities to put theory into action and get real-time feedback from MIT faculty and classmates on how to grow and improve.

To obtain the SDM master's degree, fellows must complete 11 required courses, 4 electives, a thesis seminar course and a project-oriented thesis. The 11 courses include a range of engineering and management subjects designed especially for SDM. Leadership and teamwork modules are interwoven in the curriculum.



collaborate, innovate, lead

The SDM experience is unlike any other.

From the moment they're admitted, SDM fellows are encouraged to take an active part in SDM's vibrant, lifelong learning community. SDM fellows aren't just passive students. They actively apply what they learn about systems thinking to improve the SDM program. Working closely with alumni, faculty, industry partners and staff, SDM fellows have tackled a variety of challenges for SDM, from operations and marketing to recruiting and industry relations.

SDM fellows hit the ground running when they arrive at MIT for the January session, known affectionately as SDM boot camp. Demanding coursework and rigorous interdisciplinary research constantly challenge fellows to expand their knowledge base and to adapt to new ways of thinking, working and leading.

SDM builds a strong cohort from students representing a wide range of cultural, professional and academic backgrounds. The program emphasizes teamwork, so fellows learn to maximize and leverage each other's strengths as well as to help each other grow intellectually and professionally. Relationships forged in SDM can enrich your life and your career for years to come.

Whether in academic or social activities, SDM fellows enjoy spending time with other systems thinkers who know how to innovate, collaborate and lead. Site tours, such as a recent behind-the-scenes trip to the Kennedy Space Center, offer a refreshing change from time spent in the office or classroom.

Social activities include opportunities to network with SDM alumni, faculty and top industry leaders. A special reception at commencement ends the program on a high note, as new SDM grads officially join the SDM and MIT alumni communities. From the January session through commencement and beyond, there is a lot of free food and plenty of opportunities for fun!

I learned how to transcend my own viewpoint, synthesize various perspectives and determine the right way to approach a problem. This enables me to differentiate whether a challenge is technical or organizational; if customer expectations have not been set correctly or are simply not being met; or if a problem is due to hardware or software failure.

Steve Klosterman
SDM alumnus and director of operations engineering, Volume Systems Product Group, Sun Microsystems



career path

SDM graduates are highly successful in securing top technical and managerial positions. Employers recognize that the rigor of SDM's academic program, together with the diversity of thought and professional experience shared among SDM fellows, faculty and staff, equip SDM graduates to lead across disciplines and to solve complex problems throughout organizations.

SDM graduates are hired into a wide range of functions, including product development, R&D, engineering management, general management, operations, project management, IT, software development, marketing and sales. Industries that have hired SDM grads include aerospace, defense, government, information systems, telecommunications, energy, banking and consulting.

Titles held by SDM graduates include senior product manager, systems architect, director of hardware engineering, and vice president of engineering and technology. Recently, SDM fellows have chosen to enter nonprofit, financial and consulting industries. They hold such titles as senior consultant, manager of corporate strategic planning, vice president of wealth and investment, and director of business strategy. A growing number of SDM graduates have become successful entrepreneurs, combining technology and innovation to deliver new products and services.

To view the SDM Employment Report, visit sdm.mit.edu.

career services

SDM is dedicated to providing its students with the tools they need to advance within their companies or to search for a new job. Although many students come to SDM through company sponsorship, for those who are self-funded SDM offers a variety of career development sessions and on-campus recruitment activities.

Throughout the year, outstanding career development professionals are brought to campus to help students build the skills they need for success. Topics range from resume writing to networking to how to make a stellar presentation.

SDM's expert-run workshops typically include individual coaching, so each student can receive tailor-made career assistance.

The MIT Careers Office also offers services and sponsors events that are open to SDM fellows.

alumni

Membership in SDM's learning community lasts a lifetime. SDM alumni can participate in a wide range of activities, including:

- Bimonthly web seminars presented by Engineering Systems Division faculty, graduate students and alumni (recent topics include developing product and platform strategy, coordinating the supply chain, RFID history, Dell's demand/supply balancing act, and how outsiders on the inside of a corporation can facilitate change)
- An annual two-day conference focused on leadership, innovation and systems thinking, planned and hosted by SDM alumni
- Monthly e-mail of upcoming events and the latest SDM/ESD news
- Access, through SDM's Virtual Community web portal, to contact information for SDM alumni, faculty, students and staff, as well as to all SDM theses

SDM alumni can also participate in MIT's Institute-wide alumni activities, as well as those of MIT Sloan School of Management.

As someone who loves engineering, science and management, having the opportunity to come to MIT was a privilege, an honor and an invaluable experience. In the SDM program I learned things that opened my mind and eyes—things that unexpectedly changed me in irreversible ways.

Massimo Usan
SDM alumnus and program manager, ArvinMeritor, Italy

SDM graduates are highly successful in securing top technical and managerial positions.





industry involvement in SDM

From SDM's genesis in 1996 to today, industry involvement has been a driving force behind the program. Companies report that SDM affiliation helps address the ever-increasing need for systems thinking in engineering and product development. SDM graduates carry fresh perspectives back to their companies, offering new strategic approaches to business through innovation in technology, product development, supply chain and global operations. Many companies also participate in SDM's multidisciplinary research to achieve or solidify a competitive advantage.

Companies receive many benefits from affiliating with SDM, including the opportunity to leverage new capabilities through sponsoring employees in SDM's master's and one-year certificate programs; sponsoring the thesis projects of self-funded SDM students; and hiring self-funded SDM graduates.

Each of these opportunities provides companies with broad access to an MIT research network that actively investigates the design, development and management of complex systems.

SDM offers a flexible partnership approach that allows companies to engage SDM and MIT at levels suited to their needs.

For further information contact SDM at 617.253.1055, sdm@mit.edu.

carpe diem!

Each year, the MIT System Design and Management Program enrolls an elite group of 50 to 65 high-potential, early to mid-career professionals. While they hail from diverse academic and professional backgrounds, all share common goals—they want to be systems thinkers and effective leaders.

Successful SDM applicants demonstrate strong leadership potential, systems thinking capability and the propensity to excel in integrating engineering and management. Many SDM fellows already hold one or more advanced degrees. Most have held responsible positions in organizations that span a wide range of industries, from software, networking and transportation to aerospace, financial services and government. They have worked as product development managers, systems engineers, analysts—even vice presidents and CEOs.

The typical SDM student is an engineering professional in his/her mid-30s (range 25-50+) with 10 or more years of work experience (range 3-20+). SDM's 2007 cohort comprises students from 12 countries.

For details on applying to SDM, visit sdm.mit.edu.

Nondiscrimination Policy

The Massachusetts Institute of Technology is committed to the principle of equal opportunity in education and employment. The Institute does not discriminate against individuals on the basis of race, color, sex, sexual orientation, gender identity, religion, disability, age, veteran status, ancestry, or national or ethnic origin in the administration of its educational policies, admissions policies, employment policies, scholarship and loan programs, and other Institute administered programs and activities, but may favor US citizens or residents in admissions and financial aid.*

The Vice President for Human Resources is designated as the Institute's Equal Opportunity Officer and Title IX Coordinator. Inquiries concerning the Institute's policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to the Vice President for Human Resources, Room E19-215, 617-253-6512, or to the Coordinator of Staff Diversity Initiatives/Affirmative Action, Room E19-215, 617-253-1594. In the absence of the Vice President for Human Resources or the Coordinator of Staff Diversity Initiatives/Affirmative Action, inquiries or complaints may be directed to the Executive Vice President, Room 3-211, 617-253-3928, or to the Director of Labor and Employee Relations, Room E19-235N, 617-253-4264, respectively. Inquiries about the laws and about compliance may also be directed to the Assistant Secretary for Civil Rights, US Department of Education.

*The ROTC programs at MIT are operated under Department of Defense (DOD) policies and regulations, and do not comply fully with MIT's policy of nondiscrimination with regard to sexual orientation. MIT continues to advocate for a change in DOD policies and regulations concerning sexual orientation, and will replace scholarships of students who lose ROTC financial aid because of these DOD policies and regulations.

