Strategic Plan
School of Industrial Engineering and Management
Preamble
The School of Industrial Engineering and Management (IEM) at Oklahoma State University (OSU) has a rich history and legacy. IEM at OSU granted its first IE degree in 1926, MS degree in 1948, and the first PhD degree in 1960.

IEM, one of six Schools in the College of Engineering, Architecture and Technology (CEAT), has been represented and led by giants in Industrial Engineering: winners of the Frank and Lillian Gilbreth award, the highest award given by the Institute of Industrial and Systems Engineers (IISE); members of the National Academy of Engineering; IISE presidents; American Society for Quality (ASQ) presidents; Association of Energy Engineers (AEE) presidents; senior examiner for the Malcolm Baldrige National Quality award; and Fellows of IISE, AEE, American Production and Inventory Control Society (APICS) and ASQ.

One of the School Heads, H.G. Thuesen, co-invented the parking meter, the first of which was installed in Oklahoma City in 1935.

Today, IEM typically graduates about 25 B.S., 100 Masters (including the online M.S. program in Engineering Technology Management) and 2 PhDs per year. The School has active faculty who are well known by their peers for their engagement in the teaching, research, and service missions of the School.
The School of Industrial Engineering and Management includes educators, researchers and citizens whose work has global reach and global impact. IEM excels in preparing the next generation of leaders and professionals whose daily focus is on improving the efficiency and effectiveness of systems – manufacturing and service, for-profit and non-profit, public and private, national and international. IEM scholars excel at conducting cutting edge research that improves the performance of organizations and impacts the lives of people served by these organizations.

VISION

“IEM’s vision is to place industrial engineers in a wide variety of industries including manufacturing, service, energy, healthcare, humanitarian, and others, so that our society at large can benefit from systems that effectively use an optimal set of resources, efficiently produce goods or provide services, and enrich the quality of life for all.”

MISSION

“IEM’s mission is to develop a diverse group of professionals and leaders in industrial engineering and management by being a leader in education, research, and outreach.”
The School recognizes the vital role it plays in developing and providing opportunities today for individuals with diverse backgrounds. IEM helps individuals who have a keen interest in science, engineering, and management to become successful leaders, entrepreneurs, or professionals of tomorrow’s organizations. To provide each graduate with the exciting and endless opportunities the industrial engineering discipline has to offer, IEM will develop ethical and professional engineers who:

- Use mathematics, science, and engineering principles,
- Have the ability to lead multi-disciplinary teams,
- Can model and solve complex problems to design environmentally friendly and sustainable systems that have an economic impact and touch the lives of citizens throughout the world.

This strategic plan is a roadmap that will guide the School of Industrial Engineering and Management as it embarks on an ambitious goal to be a named, endowed department ranked among the top twenty programs in the country.
Goals and Objectives

The goals of the School of Industrial Engineering and Management at Oklahoma State University are developed to help the faculty, staff and administration achieve the School’s mission. Each is a specific, measurable, achievable, realistic, and time-oriented (SMART) goal. The goals have measurable benchmarks as well as strategies that will help the School achieve its objectives.

There are three major goals for IEM in this strategic plan.

I. Educational Goals
II. Research Goals
III. Outreach Goals

“The biggest risk is not taking any risk… In a world that is changing really quickly, the only strategy that is guaranteed to fail is not taking any risks.

MARK ZUCKERBERG
In order to sustain a growth in the faculty, which itself helps increase our research activities and therefore our ranking, IEM must graduate an average of 50-60 BS students per year. An increase in enrollment and the number of undergraduate degrees granted, will allow us to:

- Offer an enriching curriculum that includes more technical electives,
- Provide opportunities to pursue co-op, internship, or study abroad opportunities,
- Broaden the scope of education for our students,
- Place more of our graduates in for-profit and non-profit industries, and
- Develop next generation professionals, managers, and leaders who will be at the forefront of solving societal problems in

**Educational Goals:** IEM’s educational goals are to educate and produce a new generation of diverse students who are proficient in theoretical, applied, and technology relevant concepts and practices that will have a global reach and global impact. IEM will continue to improve, monitor and enhance the student learning, recruiting, retention, advising, mentoring, internship, and placement processes.
manufacturing, service, energy, environment, entrepreneurship, new product or service development, logistics, and the management of natural resources.

**Strategies for Educational Goals**

- Review and revise IEM curriculum at the B.S., M.S., and Ph.D., levels – on-campus and online to make them current, relevant, engaging, and challenging.
- Recruit a diverse group of students into the IEM program.
- Provide scholarships to allow students to pursue study-abroad opportunities, engage in co-op and internship activities (within or outside the US), and offer courses at sufficient frequency and breadth so that a vast majority of our students can graduate in 5 years or less.
- Produce industrial engineers well versed in the ability to collect, process, and utilize big data for real-time decision support.
- Produce industrial engineers who can develop or utilize new technologies, apply them in new areas, possess entrepreneurship skills, and have a sharp business acumen.
- Establish a one-stop shop for students to help them navigate through student services and avail campus resources for study-abroad, co-op, internship or career placement opportunities. Closely monitor students for superior performance.
Metrics for Educational Goals

• Graduate 40 IEM undergraduates per year by 2016 and 60 by 2020.
• Place IEM graduates in a wide variety of industries spanning from manufacturing to service, for profit and non-profit, public and private, national and international.
• Review and revise IEM curriculum at all three levels by 2015.
• Seek and secure ABET accreditation for BS and MS programs by 2016.
• Place 50 students each year in study-abroad, co-op and internship opportunities by 2020.
**Research Goals:** IEM’s research goals are to engage in cutting edge research of global importance and to produce innovators as well as next generation engineering, education and societal leaders.

Seeking and securing competitive, extramurally funded research projects is a necessary pre-requisite to recruit and retain top-notch graduate students, who in turn can produce strong theses or dissertations under superior guidance, publish archival quality work, and are placed in high-level academic and industrial positions, thus bringing national and international visibility to the IEM program and its faculty. External research resources are critical in building a robust doctoral program with advanced curricula that furthers the placement and growth of our graduates in research organizations and universities so they can be at the forefront of developing new knowledge, training other industrial engineers and having a positive impact on society through their work.

**Strategies for Research Goals**

- Develop a culture that embraces extramurally funded research activities, making this activity the norm and not the exception.
- Identify opportunities and mentor new faculty to become successful in: proposal writing, mentoring PhD students, and interacting with stakeholders.
• Invest in physical and cyber infrastructure to allow IEM faculty and graduate students to develop and expand their research capabilities.
• Be recognized by our peers as a leader in research so that our faculty and students will have a better chance of winning national awards, securing research funding, occupying leadership positions in professional societies, and in being selected as editors of journals, conference chairs, or as board members.

**Metrics for Research Goals**

• Increase research expenditures from competitive grants to $1.5 million and from all grants to $5 million by 2020.
• Increase faculty size to 20 by 2020 to undertake leading-edge research and mentor next generation educators and entrepreneurs.
• Increase the number of PhD graduates to eight per year by 2020.
• The number of PhD graduates, journal papers published, external awards won, and research expenditures must be within 25% of the top ten industrial engineering programs in the US by 2020.
Community Goals: IEM’s outreach goals are to actively engage in community projects, economic development, and service for the greater good. The outreach goals also include enhancement of IEM’s image within CEAT and OSU, and the world at large.

A typical land-grant University receives its funding from student tuition, research funding, and the state. It gives back by educating and placing students who become the next generation professionals and leaders who keep the economic engine running at peak efficiency within that state. At IEM, our goal is to give back in the short- and long-run in novel and visible ways, locally as well as internationally.

Strategies for Community Goals

• As a land-grant institution, seek to give back immediately and visibly by ensuring the broader community we serve benefits from the principles, tools, and techniques of industrial engineering and management.

• Build top-notch educational and research programs to ensure IEM is always on the radar screen of upper administration and external stakeholders and is recognized as the program with the potential to be in the national spotlight.
• Actively seek to increase the endowment to attract a diverse group of top-notch faculty by offering endowed Chairs and faculty Professorships at the Assistant, Associate and Professor levels.
• Recruit and retain a diverse group of graduate students from around the world by offering competitive assistantships, scholarships, and travel grants.
• Stake a claim in helping society use scarce resources in an economically viable and sustainable manner during normal times and help meet societal needs during emergencies.

Metrics for Community Goals

• Increase the School endowment from $2 million to $20 million by 2020.
• Be ranked among the top twenty programs in Industrial and Systems Engineering by 2020.
• Increase the total IEM female student population to 35%.
• Increase the total IEM minority student population to 25%.
• Increase minority and women faculty to 20% and 35% respectively by 2020.
• Double the involvement in community outreach by 2020.