

PROGRAM OVERVIEW

The **Capstone Project course** is an industry-university partnership that integrates business realities into the curriculum of seniors in the **Industrial and Systems Engineering Program at Ohio State**. This project is an integral part of their academic program in which they have the opportunity to apply their knowledge towards real-world problem. Project teams, comprised of 3 to 4 students, are supervised/ coached by our faculty mentors and may also draw upon the expertise other faculty who specialize in specific components of Industrial Engineering.



Project are completed over the course of one semester which translates to a little over **14 weeks**. Projects start in **August** (fall semester) or **January** (Spring semester) of each year.

VALUE TO SPONSORING ORGANIZATIONS

Besides providing an opportunity to partner with Ohio State to develop our next-generation of world-class engineers, the program enables corporate sponsors to obtain significant business value through:

- Fresh perspectives and high-impact solutions to their operational problems
- Low cost, low risk implementations for their “back-burner” opportunities
- Early identification of candidates for future employment
- Increased corporate exposure on campus
- Leadership and project management experience for junior employees
- Identification of follow-on (mid term and/or distant horizon) improvement opportunities for follow on projects
- Networking opportunities with local businesses and Ohio State faculty

Prior projects have addressed actual operational problems across the value chain, including:

- Improve capacity, eliminate bottlenecks
- Reduce Working Capital, Inventory Management Improvement
- Improve throughput yield
- Reduce cycle and/or lead times
- Improving forecast accuracy
- Improving Measurement Systems and enabling improved PDSA cycles

- Improving resource scheduling
- Ergonomics and Safety Issues
- Increasing packing accuracy for outbound orders
- Improving on-time shipments
- Improving billing accuracy and reducing delays in receivables
- Understand and reduce process variation and process defects
- Improve Routing efficiency (balanced scorecard approach)
- Reduce Set-up times
- Reduce patient wait times and increase patient/customer satisfaction
- Eliminate waste from transactional processes

SPONSORING OUR PROJECTS

The level of commitment and the quality of communication are key determinants of project success. The program has more impact when a **project champion** is assigned to oversee the project and act as the first point of contact for students and faculty mentors.

Project champions are engaged in:

- Defining project scope with faculty coach
- Facilitating on-site visits for students, when appropriate
- Interacting regularly with students (Email communication is preferred and found to be effective in most cases)
- Navigating students through the organization or systems during fact-finding or data collection phase
- Reviewing reports and providing feedback on deliverables (e.g. progress reports, data analysis, final report).

Sponsor Financial Support

Sponsors are asked to reimburse candidates for appropriate costs incurred during the course of the project. Additionally, those sponsors that are not local to Columbus are asked to reimburse fuel expenses and possibly other travel expenses if required.

Confidentiality Issues

All students and faculty mentors agree to abide by the terms and conditions of the non-disclosure agreement entered with the sponsor at the start of the project.

Project information is discussed in class as part of the learning and development process but business sensitive or confidential information is protected in all cases. In some cases, projects may be submitted for publication in relevant academic or trade journals. In such cases, all company-confidential information will be removed and explicit permission will be requested from the sponsor.

ABOUT INTEGRATED SYSTEMS ENGINEERING (ISE)

The Integrated Systems Engineering (ISE) department is the home of the Industrial and Systems Engineering degree programs at Ohio State. ISE is comprised of 15 full-time faculty members who serve an enrollment of over 300 undergraduate and 185 graduate students. ISE has established several areas of academic excellence, including manufacturing processes, human factors and ergonomics, and operations research.

The department's annual research expenditures are in excess of \$6 million. Approximately 60% of the research funding is from federal sources (including the Department of Energy, the Department of Defense and the National Science Foundation, National Institute for Occupational Safety and Health) and the remaining is from industry.

Find out more at <http://ise.osu.edu/>

FOR MORE INFORMATION, CONTACT:

Dr. Steve Lavender
Associate Professor
Integrated Systems Engineering Department
The Ohio State University
210 Baker Systems Bldg. 1971 Neil Ave,
Columbus, OH 43210
Lavender.1@osu.edu
614-292-9980 or 614-633-8601 (cell)