



Available Fall 2008 New Graduate Certificate

Program and Project Management

This certificate provides practical knowledge in program and project management fundamentals. Topics include planning and organizing resources so that programs and projects are completed on schedule, on budget, and produce high-quality outcomes. The certificate is ideal for professionals who want to enhance their capabilities in managing complex projects and achieving cost-effective results.
(12 credit hours)

Required Core Courses (6 credits):

IMSE 515 Fundamentals of Program Management 3 credits

An overview of the project/program management framework and knowledge areas including plan development and execution, scope management, time management, cost management, quality management, human resource management, communications management, risk management, and procurement management. Typical program phases and life cycles observed in defense, construction, automobile, and software industries are covered along with program organizational structures, program management processes, and international project management. The role of software tools for program management and product development are discussed. Applications of Lean product development techniques are considered. Cutting waste and lead time in program management are covered. Case studies are used extensively throughout the course.
(Course offered on Campus and via Distance Learning)

IMSE 516 Project Management and Control 3 credits

Project planning, scheduling, and controlling functions are discussed in detail including work breakdown structure; CPM and PERT methods; resource allocation and leveling techniques; cost control and minimization; trade-off analysis; learning curves overlapping

relationships and concurrent engineering; multiple project execution and optimization. Applications of Lean techniques in program management are discussed as well as the role of information technology in accelerating product development and reducing the program time. The importance of integrating supply chain in product development is also considered. Case studies and project management software are used throughout the course.

Complete 2 courses from the following (6 credits):

IMSE 517 Managing Global Programs

3 credits

This course focuses on some of the central strategic and organizational problems that arise in managing global programs including; cultural conflicts, developing and managing international managers, global and local brands, and organizing to resolve global-local conflicts. The course uses a combination of case studies, problems solving, lectures and discussions over a wide variety of companies and countries.

IMSE 5215 Program Budget, Cost Estimation and Control

3 credits

This course focuses on cost estimation and control for program managers and engineers. The course introduces a systematic approach for applying engineering economy techniques in cost estimating, resource planning, cost planning, cost management and control. The study of life cycle cost elements is also discussed. An introduction to decisions under risk and uncertainty, as well as an introduction to project crashing are presented.

IMSE 5205 Engineering Risk-Benefit Analysis

3 credits

This course will consider risk analysis assessment, decision and cost-benefit analysis, fault-free methods for describing and making decisions about societal risks associated with large engineering projects. In addition, balancing risks and benefits in situations involving human safety, environmental risks, and financial uncertainties will be discussed. Presentations of major risk assessment and the public decision processes associated with them will also be covered.

Admission Requirements

Students who apply to this certificate program should have completed an undergraduate B.S. degree in Engineering, Business, Economics, Math, Computer Science or another physical science from an accredited institution and have at least two years of practical work experience. A probability & statistics course is a prerequisite for this certification program.