The Lockheed Martin Engineering Management Program (EMP) (http://www.colorado.edu/emp) is a technically based management and leadership program for the engineering and technical fields that prepares students for early to mid-career positions in a variety of industries. It is designed for students who are looking to advance in management, successfully contribute to the overall business or venture, and develop their leadership skills.

The program offers an engineering management minor, a certificate and courses for undergraduate students in the College of Engineering and Applied Science. The minor and certificate are designed for junior- and senior-level engineering students who seek to develop business and industry acumen to complement their engineering majors. Courses are offered on campus with many virtual distance sections.

Course code for this program is EMEN.

**Minors**

- Engineering Entrepreneurship - Minor (catalog.colorado.edu/undergraduate/colleges-schools/engineering-applied-science/programs-study/engineering-management/engineering-entrepreneurship-minor)
- Engineering Management - Minor (catalog.colorado.edu/undergraduate/colleges-schools/engineering-applied-science/programs-study/engineering-management/engineering-management-minor)

**Certificate**


**Faculty**

While many faculty teach both undergraduate and graduate students, some instruct students at the undergraduate level only. For more information, contact the faculty member’s home department.

Angel, George  
Instructor

Bozic, Christy L. (https://experts.colorado.edu/display/fisid_155482)  
Scholar in Residence, Endowed/Named Professor, Faculty Director; PhD, Purdue University

Buzzard, Frank  
Instructor; MS, University of Houston

DeAndrea, Jay  
Instructor; MBA, University of Colorado Boulder

Duren, Ron G. Jr. (https://experts.colorado.edu/display/fisid_157263)  
Instructor; MS, University of Colorado

Judah, Kyle  
Instructor; MBA, Babson College

Kirschling, Wayne (https://experts.colorado.edu/display/fisid_123149)  
Professor Emeritus; DBA, University of Colorado Boulder

Leopold, Christie-Anne  
Instructor; PhD, University of Colorado

Littlejohn, Ray Lynn (https://experts.colorado.edu/display/fisid_151752)  
Scholar in Residence; PhD, University of Oklahoma

Martin, Wendy Lynn (https://experts.colorado.edu/display/fisid_154942)  
Instructor; ME, University of Colorado Boulder

 McCluskey, Alyssa  
Instructor; PhD, University of Colorado

McDonald, Patricia  
Instructor; MBA, Southern Illinois University Edwardsville

Mihelich, Daniel  
Instructor; DM, Colorado Technical University

Moorer, Daniel F. Jr. (https://experts.colorado.edu/display/fisid_151590)  
Scholar in Residence; PhD, University of Colorado Boulder

Murray, Seth (https://experts.colorado.edu/display/fisid_148038)  
Instructor; ME, University of Colorado Boulder

Phillips, Brent  
Instructor; MS, Regis University

Ravishankar, G. Ravi (https://experts.colorado.edu/display/fisid_144567)  
Instructor; MBA, Massachusetts Institute of Technology

Readey, Michael J. (https://experts.colorado.edu/display/fisid_157363)  
Scholar in Residence, Endowed/Named Professor, Associate Faculty Director; PhD, Case Western Reserve University

Roza, Eric  
Instructor; MBA, Stanford University

Sherwinter, Daniel J.  
Professor Adjunct

Svoboda, John D. (https://experts.colorado.edu/display/fisid_154884)  
Instructor; MS, University of California, Los Angeles

Tobey, Kathryn  
Scholar in Residence; ME, University of Colorado Boulder

Van Atten, Bill  
Instructor; MS, Johns Hopkins University

Wrobetz, Anne  
Instructor; MS, University of Colorado Boulder

**Courses**

**EMEN 3100 (3) Introduction to Engineering Management**  
Examines topics important to the management of engineering activities within organizations. Topics include the relationship of engineering to business and management disciplines, the functions of an engineering manager, principles and techniques for managing financial resource and business ownership. Explores best practices in global engineering management, process management, legal issues, ethics, organizational behavior and communications.  
**Requisites:** Restricted to students with 27-180 credits (Sophomores, Juniors or Seniors) College of Engineering students only.
EMEN 4030 (3) Project Management Systems
Gain skills in project management best practices that fit any industry, sector or geography. This interactive class provides students with the tools necessary to effectively initiate, plan, execute, control and close any type of project. Students apply knowledge as they plan an actual project, build and execute it, and ensure it meets stakeholder expectations and other project goals.
Requisites: Restricted to students with 57-180 credits (Junior or Senior) College of Engineering students only.

EMEN 4050 (3) Leadership and Professional Skills
Accelerate your personal and professional growth with the essential skills required to become an effective leader/manager. Conduct personal development through exercises in communication and leadership effectiveness. Explore leadership styles, managing commitments, change management, negotiation, conflict resolution, organizational culture, emotional intelligence, team dynamics and business ethics.
Requisites: Restricted to students with 57-180 credits (Junior or Senior) College of Engineering students only.

EMEN 4100 (3) Engineering Economics
Introduces engineering cost concepts, financial statements and the corporate economic environment. Includes concepts and methods of analysis of the time value of money, comparison of project alternatives before and after taxes, cash flow, replacement analysis, risk management and financial case statements.
Requisites: Restricted to students with 57-180 credits (Junior or Senior) College of Engineering students only.

EMEN 4110 (3) Supply Chain Management
Explores the key issues related to the design and management of supply chains. Covers the efficient integration of suppliers, production facilities, warehouses, and stores so that the right products in the right quantity reach customers at the right time. Focuses on the minimization of the total supply chain cost subject to service requirements imposed by a variety of industries.
Equivalent - Duplicate Degree Credit Not Granted: MGMT 4110

EMEN 4120 (3) Managing Business Processes
Covers the concepts and tools to design and manage business processes. Emphasizes modeling an analysis, information technology support for process activities, and management of process flows. Graphical simulation software is used to create dynamic models of business processes and predict the effect of changes. Prepares students for a strong management or consulting career path in business processes.
Equivalent - Duplicate Degree Credit Not Granted: MGMT 4120 & MGMT 5120

EMEN 4200 (3) Engineering and Entrepreneurship for the Developing World
Use your engineering and problem solving skills, combined with market/industry research, customer interviews, design for manufacturability, stakeholder management and financial modeling to promote entrepreneurship and sustainable change in the developing world. Explore alternative energy, medical devices, phones, internet, recycling, cook stoves, clean water, sanitation and infrastructure.
Requisites: Restricted to students with 57-180 credits (Junior or Senior) College of Engineering students only.

EMEN 4400 (3) Quality Management
Introduces the concepts, tools and techniques used in the management and measurement of quality and productivity in a business environment. Associated topics include: statistics methods, design quality, measurement, control and process improvement. Discover the basics of performance excellence management including Baldridge Award criteria, strategic planning, leadership and daily quality management.
Equivalent - Duplicate Degree Credit Not Granted: MGMT 4400
Requisites: Restricted to students with 57-180 credits (Junior or Senior) College of Engineering students only.

EMEN 4405 (3) Systems Engineering
Introduces students to system engineering in terms of defining objectives, applications and the major steps in the systems engineering process. Learn to work effectively with diverse project teams. Industry standards are covered that lay out the steps of the classic Systems Engineering lifecycle. Real world engineering examples from concept exploration to hardware retirement are used.
Requisites: Restricted to students with 57-180 credits (Junior or Senior) College of Engineering students only.

EMEN 4800 (3) Technology Ventures and Marketing
Learn marketing concepts, skills and tools to launch new products and ventures. Engage with faculty, classmates, guest speakers, industry professionals, potential customers and one's leadership team to help you launch your venture. Develop the necessary skills and tools to be successful colleagues, managers and leaders in industry. Gain valuable business acumen using a hands-on learning environment.
Requisites: Restricted to students with 57-180 credits (Junior or Senior) College of Engineering students only.

EMEN 4820 (3) Entrepreneurial Product Development
A practical, hands-on course that introduces engineers and business students to the exciting world of product development. Each student will create a concept for an innovative product, assess its commercial potential, construct simple digital and physical prototypes, and evaluate its impact on the environment. The course culminates in a trade-show like event where everyone showcases their world-changing product to their peers.
Requisites: Restricted to students with 57-180 credits (Junior or Senior) College of Engineering students only.

EMEN 4825 (3) New Venture Creation
Relevant to students seeking to acquire an entrepreneurial toolkit of knowledge and skills for working in the startup world or launching a new venture. Covers the techniques for evaluating the probability of success for a new venture and develops a methodology for entrepreneurial thinking that provides benefits for big and small ventures. The final deliverable is a professional pitch to a group of seasoned investors and the submission of a complete business plan.
Equivalent - Duplicate Degree Credit Not Granted: ESBM 4830
Requisites: Restricted to students with 57-180 credits (Junior or Senior) College of Engineering students only.

EMEN 4830 (3) Special Topics
Repeatable: Repeatable for up to 9.00 total credit hours. Allows multiple enrollment in term.
Requisites: Restricted to students with 57-180 credits (Junior or Senior) College of Engineering students only.

EMEN 4840 (1-3) Independent Study Project
Available only through approval of Engineering Management Program. Subjects arranged to fit the needs of the particular student.
Repeatable: Repeatable for up to 6.00 total credit hours. Allows multiple enrollment in term.

College of Engineering students only.

Requisites: Explore alternative energy, medical devices, phones, internet, recycling, stakeholder management and financial modeling to promote industry research, customer interviews, design for manufacturability, Use your engineering and problem solving skills, combined with market/