

# The Master of Science in Product Development Engineering



## Why USC School of Engineering?

1. U.S. News and World Report ranks USC #8 in the nation for best overall graduate programs in its 2003 and 2004 rankings of the top schools of engineering.
2. With over \$100 million in external funding support, USC School of Engineering is ranked #1 in research activity per faculty member by U.S. News and World Report.
3. The USC School of Engineering is home to the distinguished Information Sciences Institute (ISI), one of the world's leading research centers in the fields of computer science and information technology.
4. The USC School of Engineering's Distance Education Network (DEN) has been named one of the top e-learning graduate programs of engineering by U.S. News & World Report.
5. The USC School of Engineering is home to the Integrated Media Systems Center (IMSC), the only National Science Foundation-funded Engineering research center for multimedia and internet technology.

## About DEN

Established in 1972, USC School of Engineering's Distance Education Network (DEN) was a pioneer in the distance learning arena. Now thirty years later, DEN is still a pioneer. Recently ranked as one of the top e-learning engineering graduate programs in the nation, DEN utilizes the most cutting-edge distance education technology to provide a seamless experience for its students who are located throughout the United States and the world.

## Benefits

By removing geographic and scheduling barriers that prevent working engineers from pursuing advanced degrees, DEN provides professionals with the convenience of taking classes from their worksite or from home. As an extra benefit, they can directly apply course content to enhance their daily jobs. Corporate participation in DEN provides companies with a powerful recruitment and retention tool, while giving them a competitive advantage as employees increase their knowledge and competencies by obtaining advanced degrees or professional development skills specific to their industry's needs.

## How It Works

Regular campus classes and non-credit continuing education courses are transmitted from the USC campus via an extensive broadcast and webcast system that enables students to access their classes anytime, from anywhere. Live distance instruction is highly interactive; students can ask questions and carry on discussions with the instructor by telephone or threaded online chat discussions. Videoconferencing during live instruction is also available upon request. E-mail allows students to obtain assistance from the instructor or teaching assistant outside of class hours. Class materials are available online.

## Technical Set-up

All a student needs is high-speed Internet access (cable modem, DSL, T1/T3 line, etc.) and the free Microsoft Windows Media Player (6.4 or higher) to view high-speed video.\*

\*A limited number of courses are available for 56K dial-up speed.

## How to Enroll

Go to <http://den.usc.edu> and click on "Prospective Students" to begin the enrollment process.

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DESIGN: WARREN GROUP, LOS ANGELES

## USC School of Engineering Distance Education Network (DEN)

Advanced Education Tailored for the Professional Engineer...

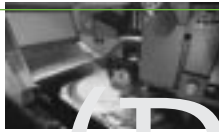
# (MSPDE)

## Program Goals

The ever increasing demands of function, cost, quality, and lead-time, coupled with rapid technological changes and stringent environmental concerns, have made product development a very complex activity that ranges from art to science, business to technology, and organization to society. The USC M.S. Product Development Engineering degree prepares students with the interdisciplinary knowledge and experience to excel in the complex field of product development. This innovative degree program has two tracks — one that prepares students for a professional career as a new product development engineer (Product Development Technology — PDT) and another that prepares them to become a product development manager (Product Development Systems — PDS) in technology companies. All courses required to earn the Master of Science in Product Development Engineering are available via the Distance Education Network.



<http://den.usc.edu>



# (DEN)

## Advanced Education for the Professional Engineer

Investing time and energy into an advanced degree or certificate is not a “nice to have”, but a “must have” in this age of rapidly changing technology and dynamic industry transformations. At USC School of Engineering Distance Education Network (DEN), we realize that time is a student’s most precious commodity and recognize the importance of maintaining a positive work/life balance. Our distance education network is designed especially for engineering professionals who work full time. We also accommodate those who travel frequently. Here are some ways a student can benefit from our services:

**Take Classes Anytime, Anywhere:** Our e-learning capabilities allow students to take classes from anywhere — no matter where they travel for business — as long as they have high-speed Internet access. Classes are available for the entire semester, allowing DEN students a chance to review complex lessons or prepare for exams.

**Top Notch Faculty:** The active faculty includes 20 members of the National Academy of Engineering and numerous winners of Presidential and NSF Early Career awards — a distinguished honor for a university.

**Joining the USC Family:** The USC alumni network is reputed to be one of the largest most influential and loyal families one will ever be a part of.

**Top E-Learning Engineering Program:** DEN has recently been named one of the top e-learning engineering graduate programs in the nation by U.S. News and World Report.

## Admission Requirements

Admission to the M.S. in Product Development Engineering degree program requires a Bachelor of Science degree in an engineering, math or science discipline from a regionally-accredited institution with a cumulative GPA of at least 3.00 on a 4.00 scale. Satisfactory scores on the general GRE test are also necessary (verbal — 400; quantitative — 650). Prospective students with sufficient background and work experience who earned their bachelor’s degree in business may qualify for this program (for the Product Development Systems track). They will be evaluated on a case-by-case basis.

Go to <http://den.usc.edu/programs/mspde> for complete program details, requirements and course descriptions

## Graduation Requirements

A minimum of 27 units is required for the degree. This includes two required program core courses, two required “area of specialization” (AOS) courses, two AOS technical elective courses, and three general elective courses approved by an advisor. A minimum cumulative GPA of 3.0 is required for graduation. In addition to classroom lectures, emphases are placed on case studies and team projects. Students can choose a thesis option to develop a new technology product or service of their choice as part of the degree program requirements.

### Required Program Core Courses

AME 503	Advanced Mechanical Design
ISE 545	Technology Development and Implementation

### Required AOS Courses

For AOS in Product Development Technology (PDT):

AME 505	Engineering Information Modeling
AME 525	Engineering Analysis or AME 526 Engineering Analytical Methods

For AOS in Product Development Systems (PDS):

ISE 515	Engineering Project Management
ISE 544	Management of Engineering Teams

### AOS Technical Elective Courses (select two)

For AOS in Product Development Technology (PDT):

AME 501	Spacecraft Systems Design
AME 506	Design of Low Cost Space Missions
AME 549	Systems Architecting
AME 599	Advanced Topics in New Product Development

For AOS in Product Development Systems (PDS):

ISE 460	Engineering Economy
ISE 541	System Engineering Theory and Practice
ISE 561	Advanced Engineering Economy
ISE 585	Strategic Management of Technology

### Elective Courses

Upon advisor approval, students should take a minimum of 9 units from related upper-division 400 and 500 level engineering courses. These elective courses enable students to acquire more in-depth knowledge for the development of new products in a particular engineering domain. PDT students can take PDS required courses and technical electives as their general electives, and vice versa. Under special arrangements and approvals, students can take up to 4 graduate level units from other institutions/universities as their general electives.

Please note that the courses listed in this brochure are those available via DEN. Additional courses are available on campus. It is anticipated that more electives will become available via DEN in future semesters.

“The growth of our economy has been largely determined by the engineer’s performance and effectiveness in new product developments. The Master of Science in Product Development Engineering enables you to consistently identify and deliver new products to the market more rapidly and economically than your competitors.”

Professor Stephen Lu, Director of USC Product Development Engineering Program,  
David Packard Chair in Manufacturing Engineering