
2016

ENGINEERING LEADERSHIP
PROFESSIONAL PROGRAM
University of California, Berkeley

Information Packet



ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

UC Berkeley's Engineering Leadership Professional Program (ELPP) provides the professional development and specific skills to turn top-performing engineering managers and technical leaders into true enterprise leaders. ***The program is parallel to a technology-focused MBA, but condensed to 4 months, part-time, and offered every Monday evenings plus several Thursday evenings, in the Silicon Valley.***

ELPP uniquely combines business insight, leadership skills, and an immersion in Silicon Valley's most strategic technology trends. The program enables technical experts and senior engineering managers to be able to accomplish the following:

- Expertly manage and lead technical teams
- Influence top-level strategy as a technical leader or senior manager
- Understand the implications of today's changing technology opportunities ranging from Internet services, electronic currency, wearable computing, semiconductor advancements, Internet of Things, EVs, 3D Printing, and healthcare service topics.
- Develop judgment and skills in opportunity recognition, product management, and financial operations from the perspective of a CFO.
- Enhance the value derived from R&D and technical operations.
- Contribute more effectively and at higher levels within the firm.

Participants also exchange best practices and join a powerful engineering leadership network with colleagues from firms including Google, Yahoo!, Samsung, VMware, Lam Research, SanDisk, NetApp, Qualcomm, Cisco and Applied Materials.

If you are interested in nominating rising-star engineers, scientists or technical managers from your organization or you have questions, please feel free to contact me directly at sidhu@berkeley.edu



Best regards,
Ikhlaq Sidhu
Faculty Director, Engineering Leadership Professional Program
Chief Scientist, and Founding Director, Sutardja Center for Entrepreneurship & Technology
UC Berkeley

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

ABOUT

A critical issue for Silicon Valley firms is the competitiveness of their talented technical staff and leading innovators. As high performers are promoted within engineering and technical marketing roles, many require a rounding out of their skill sets to function as both engineers and leaders.

The symptoms of “engineering without leadership” include organizational indecision about new products and services; disagreements between product management and engineering; delayed and halted projects; reduced R&D productivity; poor technology strategies, team morale and retention issues; and overall poor competitive performance.

UC Berkeley offers two tracks for professional leadership education: business leadership (through the MBA program) and engineering leadership. **Because professionals often use the MBA to make career changes, it may not be the best option for engineers and scientists seeking to advance within a technical career or within R&D management.**

As an alternative to the MBA, UC Berkeley is offering a separate leadership track tailored specifically to engineers and scientists. We believe there is an opportunity to increase the competitiveness of Silicon Valley’s most talented technical staff and leading innovators with a shorter and more focused program in Engineering Leadership. To accommodate busy schedules, the program will be offered one evening per week over a period of approximately five months.

Since its inception in January 2011, the UC Berkeley Engineering Leadership Professional Program has increased professional opportunities for existing top technical talent in Silicon Valley. Firms that participated in our program most recently in 2016 include Google, Samsung, VMware, Applied Materials, Lam Research, Juniper Networks, NetApp, Qualcomm, SanDisk and Yahoo!.

This program is one among many several educational programs created by UC Berkeley’s Sutardja Center for Entrepreneurship & Technology headquartered in the College of Engineering in collaboration with Engineering’s Office of Executive & Professional Education. The office of Executive & Professional Education creates and delivers custom educational programs that are designed for engineers by engineers. They’re tailored to the needs and demands of your company—in content, in length and in location.

HIGHLIGHTS

Eng. Leadership I

Strategy and Opportunity Recognition

- Opportunity recognition
- Competitive advantage
- Disruption and cognitive inertia
- Value net and landscape
- New category creation
- Managing design and innovation

Product Management and Entrepreneurial Marketing

- Success and failure cases
- Business models
- Market strategies, positioning, branding
- Pricing and selling
- Channels and distribution
- Ethical issues

Project 1: Cross-Firm

Eng. Leadership II

Finance

- CFO-style interpretation of financial statements
- Funding sources for growth firms (banks, private equity, IPO, money and capital markets)
- Accounting Toolkit
- Forecasting
- Financial aspects of mergers and acquisitions

Operations & Leadership

- Organizational structure and roles
- Leadership, Teamwork
- Managing creativity
- Project management
- Production and supply chain decisions
- Benchmarking for productivity metrics

Project 2: Internal

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

F.A.Q.

How does the Engineering Leadership Professional Program differ from other executive/post-degree programs?

This program is specifically designed for rising star engineers and technical managers who aspire to develop professional skills for career advancement. The significant differences between ELPP and other leadership programs are that ELPP:

- 1) is designed by engineers specifically for senior engineering leaders, recognizing and further developing the considerable talents and abilities they have acquired as trained and experienced engineers;
- 2) draws upon these abilities of engineers to manage and make decisions within tremendously complex systems to enable them to then apply these talents to the broader business, market, and competitive environments in which their companies operate; and
- 3) fully develops the innovative, creative, and entrepreneurial qualities that engineers have developed and can now apply to other aspects of the broader business environment.

Is there a copy of the course syllabus?

You may review a sample syllabus at the end of this document. Please note that the final version for Fall 2016 is subject to some modifications from this sample.

What are your admissions requirements?

Admission to this program is highly selective and is based on individual achievement as well as the program's goal to create a balanced cohort of students representative of today's most relevant industries. All applicants are required to have at minimum an undergraduate degree in a technical area (engineering, science, etc.) from an accredited institution. Professional candidates must also provide a letter of recommendation from a leader or executive in their firm or an academic mentor. ***[For invited firms, the firm's leadership will nominate candidates directly to UC Berkeley]***

When are applications due?

Applications are due June 15th for the Fall (August to December) 2016 session. Applying as early as possible is advised due to the limited availability. ***[For invited firms, candidates will be nominated during the months of April, May and June 2016]***

When am I notified if I am accepted?

You will be notified in approximately two weeks after submission. ***[For invited firms, candidates will be notified within 2 weeks after your firm submits its nomination list]***

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

What do I receive upon completion of the Engineering Leadership Professional Program?

You will receive a certificate of satisfactory completion for the executive Engineering Leadership Professional Program. The UC Berkeley Sutardja Center for Entrepreneurship & Technology will also publish a graduation list. Transcripts for each of the two courses will be available from the registrar at UC Berkeley Extension.

How should I indicate the completion on my Resume or CV?

After completing this highly selective program, candidates may write "**2016 UC Berkeley Engineering Leadership Professional Program**" on their Resume.

Will this coursework be transferable to other institutions?

The coursework is not currently transferable to other programs.

How much does the program cost?

The program costs \$13,500 for the entire four month program, consisting of a 2-course sequence.

What is included in the program fee?

The fee covers all faculty instruction and coordination, administration by Berkeley Engineering's Executive & Professional Education Programs staff, all educational materials, classroom facilities, breaks and dinner on program days. Transportation and other incidental costs are not included.

When and how should accepted candidates pay?

Please speak with your firm's contact regarding payment. Individual applicants can make arrangements with the College of Engineering, Executive Education group.

How are the courses taught?

Courses are taught using case method, experiential learning, and lectures. Classes are taught by UC Berkeley faculty and supplemented by guest lecturers, who are highly accomplished industry experts.

How much work outside of class does the program require?

Candidates for the Engineering Leadership Professional Program should expect to spend 3 hours per week In-Class and an additional 2 to 3 hours per week outside of class on preparation and project work.

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

We bring leaders, innovators, executives and Silicon Valley know-how into the classroom. Industry Faculty complements UC Berkeley Academic Faculty. A typical list of speakers each session includes the following:

Steve Blank, Author, Berkeley and Stanford Faculty

Charles Huang, Co-Founder, Guitar Hero

Jerry Fiddler, Founder and CEO, WindRiver

Margret Schmidt, Chief Design Officer, TiVo

Charlie Giancarlo, Former Chief Product Officer, Cisco

Suneel Udpa, PhD, Accounting, Haas School of Business, UC Berkeley

Bill Ruh, VP and GM, GE Software

Vic Kulkarni, Sr VP & GM, Apache BU of ANSYS

Ram Krishnan, formerly EVP and COO, InvenSense

Holly Schroth, PhD, Social Psychology, Haas School of Business, UC Berkeley

Eshwar Belani, VP, RocketFuel

Cosmos Nicolaou, VP Engineering, Google

Michael Marks, Chairman of the Board, SanDisk Corporation, Former CEO Flextronics

Mike Olson, Co-Founder and CSO, Cloudera

Ikhlaq Sidhu, Chief Scientist & Founding Director, Sutardja Center for Entrepreneurship & Technology, College of Engineering, UC Berkeley

IN CASE YOU HAVE QUESTIONS....

Jocelyn Weber Phipps
Associate Instructor
Sutardja Center for Entrepreneurship and Technology
College of Engineering
University of California, Berkeley
Cell: +1 925-297-9132
jweberphipps@berkeley.edu

Website: <http://sutardjacenter.berkeley.edu>

Keith P. Gatto
Director, Academic Affairs
College of Engineering
University of California, Berkeley
Berkeley, CA 94720
E-Mail: kgatto@berkeley.edu
Phone: +1 510-664-4464

2016 FALL SCHEDULE

The first session for Fall 2016 will begin mid-August and end by mid-December. Classes will take place on Monday evenings and several Thursdays for a total of approximately 22 sessions over 4 months. Class hours are from 5:30pm – 8:30pm extendable to 9:00pm for sidebar discussions.

Location:

Hyatt House Silicon Valley
75 Headquarters Drive
San Jose, California, USA, 95134



ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

SAMPLE SYLLABUS

Faculty Lead - Professor Ikhlaz Sidhu

DESCRIPTION

Designed for technical professionals, this program explores key management and leadership concepts relevant to technology-dependent enterprises. Class participants undertake intensive study of actual business situations through rigorous case study analysis. There are two group projects in the program that allow class members to further explore approaches taught in the class. The program is focused in three critical leadership areas for today's engineers - Technology Strategy, Operational Innovation and Leadership / Communications, and is intended to prepare program candidates for leadership at the executive level.

Case Study analysis, group interactive exercises and industry speakers are the key teaching components over the two sections of the program - Engineering Leadership I and II. Topics in Engineering Leadership I are focused on the processes of innovation, such as opportunity recognition, strategies for effective R&D, marketing innovation, disruption, cognitive inertia, product management, market selection, standards wars, two-sided markets, attracting stakeholders, business models, and pricing strategies. Engineering Leadership II focuses on key operational, leadership, and financial concepts including CFO-style interpretation of financial statements relevant to technology-dependent enterprises. The operational and leadership topics may also include direct and indirect sales, resolving channel conflict, logistics, talent management, negotiation, managing creativity, and leadership styles.

CONTACT INFORMATION

Faculty Lead	Ikhlaz Sidhu, Faculty Director, ELPP; Chief Scientist and Founding Director, Center for Entrepreneurship & Technology (CET); IEOR Emerging Area Professor, College of Engineering	sidhu@berkeley.edu
Associate Instructor	Jocelyn Weber Phipps, ELPP Associate Instructor; Industry Fellow, Center for Entrepreneurship & Technology (CET), College of Engineering	jweberphipps@berkeley.edu

FORMAT

This course will be composed primarily of case study analysis, guest speaker presentations and two team projects, as supported by video and further information found on the <http://engineeringleadership.net> website. Students will analyze one to two case studies per week. Class discussions will focus on issues raised in case studies, including analysis, brainstorming, and recommendations. Industry guest speakers

Revised 5/4/2016

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

will provide insight based on real-world business experience. Over the course of the semester, participants will gain exposure to a wide variety of managerial approaches, technologies, business models, and personalities. The two group projects are designed for participants to analyze organizational and strategic situations for private firms or government organizations from a leadership perspective.

TEXTS AND REQUIRED SUPPLIES

- Selected case studies, available in Course Reader and online.
- Handouts In-Class
- Crucial Conversations: Tools for Talking When Stakes Are High by Kerry Patterson, Joseph Grenny, Ron McMillan and Al Switzler (Jun 18, 2002)
- Public domain documents (for internet download)
- Online surveys and/or quizzes to be completed

GRADING & ATTENDANCE

Class attendance and participation are expected and tracked.

Grading will be as follows:

Engineering Leadership I:

- 25% Class participation, quizzes & attendance
- 25% Group project #1

Engineering Leadership II:

- 25% Class participation, quizzes & attendance
- 25% Group Project #2

DATES & LOCATION (see SCHEDULE category for details)

Class is currently held in at a central location in Silicon Valley – Hyatt House Silicon Valley. Classes generally take place on Monday evenings and several Thursdays for a total of approximately 20 sessions over 4 months. Class hours are from 5:30pm – 8:30pm extendable to 9:00pm for sidebar discussions. The last class and graduation ceremony take place on the UC Berkeley campus, and are followed by a reception at the UC Berkeley Faculty Club.

OFFICE HOURS & COMMUNICATIONS

Prof. Sidhu is available before each class session to meet with teams or individuals on specific questions or for general discussion on class materials or projects.

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

SCHEDULE

Cases/Articles can be generally found in the course Reader, Principles of Engineering Leadership, and via online password as provided at the course website. Please refer to the Reader for any additional questions/highlights on the page prior to each case or article.

Engineering Leadership I

2016 Date	Topic/Guests	Reading	Questions	Project
Prior to Session 1	If you don't have one, create a LinkedIn account for yourself and join the ELPP Alumni LinkedIn group	Read emails prior to first session from Study.net and bCourse to create your accounts / sign in.	Study.net contains electronic copies of the materials needed for the course (hard copies will also be provided on the first day) and bCourse is UC Berkeley's student collaboration and communication system.	
Session #1	Overview & Introductions * Case method, * Projects I and II, * Homework and class participation,	No advance reading. Join the ELPP Alumni LinkedIn group and feel free to connect with Prof. Sidhu .	Search on LinkedIn for: "UC-Berkeley - Engineering Leadership Program (ELPP) Alumni Network" and Ikhlag Sidhu .	Class Mixer
Session #2	A. Opportunity Recognition (Pt. I) Technology-based Opportunity Recognition vs. Market-based Opportunity Recognition, Attracting Stakeholders, Technology S-Curve. B. Project – Group Project ideas are reviewed.	Read Case: E Ink 2005	Case Questions: E-Ink: What did E Ink do right? What did it do wrong?	Project ideation: Each candidate to turn in 5 project concepts. In class, 40 min to share ideas at table. Each table presents best project ideas in 3 min + 3 min discussion.

LEADERSHIP FOR ENGINEERS

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

2016 Date	Topic/Guests	Reading	Questions	Project
Session #3	A. Opportunity Recognition (Pt. II) B. Innovation - Lean Methods and Customer Development Key Concepts: Business Models vs. Business Plans with Steve Blank	Read Case & Article: Dr. John's Products, Ltd. and be prepared to answer/discuss to Case Questions in next column. Read Article: "Why the Lean Start-up Changes Everything" and be prepared to answer/discuss to Article Questions in next column.	Case Questions: Dr. John's: 1. What is the nature of the opportunity? 2. How does John Osher test the market? 3. Who is the customer? 4. How much revenue can SpinBrush generate per year in the US? Article Questions: 1. What are the main aspects of a lean start-up? 2. What other skills might be required to be successful?	
Session #4	A. Technology Strategy & Disruption Disruption, Why great firms fail, Hard disk case study, Cognitive inertia with Charles Giancarlo, Silver Lake Partners, previously Cisco EVP & CDO B. Project – Group teams formed.	Read Case: Kodak and the Digital Revolution and be prepared to answer/discuss to Case Questions in next column.	Case Questions: Kodak: 1. What are the main structural differences between digital photography and digital photography? 2. Evaluate Kodak's response to Sony Mavica, what is appropriate?	Remaining tables present best project ideas in 3 min + 3 min discussion. Team selection: Form 8-10 teams of about five to six members. Cross-firm teams are ideal.
Session #5	Engineering Leadership Special Topic & Mixer	Live Case with Vic Kulkarni, GM & SVP, Apache Design Solutions: Demystifying the IoT Opportunity Read Article: "Storytelling Tips from Salesforce's Marc Benioff"		Use time outside of class to focus on Project I reports and presentations.

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM
University of California, Berkeley

2016 Date	Topic/Guests	Reading	Questions	Project
Session #6	A. Strategy & Business Landscape, Core Competency, Operating Factors Lecture: Corporate vs. Competitive Strategy, Companies in Transition, Value Net, Experience Curve, Competitive Advantage, Dual Advantage. B. Project – In class Group Project time	Read Case: Intel Corporation, 1968-2003, only read pages 1-11, and view exhibits.	Case Questions: 1. How do you explain Intel’s success in DRAM? 2. Why did this success subsequently decline? Why has Intel been successful over a longer period with the microprocessors?	In class project work, advising and discussion time.
Session #7	A. Principles of Managing Design B. Margret Schmidt, CDO, TiVo	Case: IDEO Video and in class discussion. “Design & Innovation”		Outside of class continue to work on Group Projects.
Session #8	A. From Technology Strategy to Operations Transitions from detecting business models to operations. Use of measurements and quantitative technology. B. Eshwar Belani, VP, RocketFuel	Read Case: Adaption Part I, Netflix “Age of AI”	Case Questions: 1: Why does Blockbuster have trouble competing with Netflix. 2: What operational measures does Netflix use to refine its business model?	Outside of class continue to work on Group Projects.
Session #9	A. Presentation Skills with David Yewman, DASH Consulting Inc. B. Project Time – in class Project time	Continue to work outside of class on Group Projects.		LEADERSHIP FOR ENGINEERS

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

2016 Date	Topic/Guests	Reading	Questions	Project
Session #10	Project I Presentations (4)			Project I Presentations
Session #11	Project I Presentations (4)			Project I Presentations

Engineering Leadership II

2016 Date	Topic/Guests	Reading	Questions	Project
Session #12	Accounting Toolkit 1 Suneel Udpa of Haas, UC Berkeley	See assignments posted In bCourse	Key Concepts: Fundamentals of Accounting	All written Project I reports are due.
Session #13	A. Accounting Toolkit 2 Suneel Udpa of Haas, UC Berkeley B. Project II Kickoff	See assignments posted In bCourse	Key Concepts: Analysis and Interpretation of Financial Statements	Overview of Project II options by Prof. Sidhu.
Session #14	A. Engineering Leadership Special Topics Prof. Sidhu on Crucial Conversations Bill Ruh, VP Software, General Electric B. Ram Krishnan, formerly COO of InvenSense	Read Text: Crucial Conversations: Tools for Talking When Stakes Are High (Chapters 1 and 2)	Text Questions: What points are most relevant to you in this reading?	Outside of class continue to work on Project II.
Session #15	A. Measurement: Medtronic, Inc. & Prof. Sidhu on CC (20 min)	Read Case: Medtronic, Inc. Read Text: Crucial Conversations: Tools for Talking When Stakes Are High (Chapters 3 and 4)	Case Questions: 1. What are the problems and root causes at Medtronic? 2. What improvement were the most effective at	Outside of class continue to work on Project II LEADERSHIP FOR ENGINEERS

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

2016 Date	Topic/Guests	Reading	Questions	Project
	B. Engineering Leadership Special Topic with Cosmos Nicolaou , VP Engineering, Google (@7:15)		turning the company around	
Session #16	A. Engineering Leadership Special Topic with Etienne Defarges , former EVP, Accretive Health, Partner, Accenture			Outside of class continue to work on Project II
Session #17	Leadership – Shadow Negotiations Part I Holly Schroth , of Haas, UC Berkeley	Answer Survey in bCourse to Prep for Shadow Negotiations (contact info and planned attendance needed)		Outside of class continue to work on Project II
Session #18	Leadership – Shadow Negotiations Part II Holly Schroth , of Haas, UC Berkeley	Prepare for FastSkin Negotiation Exercise		Outside of class continue to work on Project II
Session #19	A. Crucial Conversations Discussion (15 min) B: Engineering Leadership Special Guest, Mike Olson , Founder, CSO, Cloudera	Read Text: Crucial Conversations: Tools for Talking When Stakes Are High (Chapters 5 and 6)	Text Questions: What points are most relevant to you in this reading?	In class project work, advising, and discussion time teams

LEADERSHIP FOR ENGINEERS

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley

2016 Date	Topic/Guests	Reading	Questions	Project
Session #20	A. Engineering Leadership Special Topic with Nir Merry, VP, Applied Materials	Final Reflection Assignment Due		Project II Meeting Week – Prof. Sidhu will meet with each Project II team or individual (if solo project) to review Project II results.
Session #21	Principles of Engineering Leadership Final Lecture Graduation & Reception Dinner			This final session will be held on the UC Berkeley Campus & at the Faculty Club

In addition to the above schedule, there will be at least 1 company held event and speaker on an additional Thursday evening.

ENGINEERING LEADERSHIP PROFESSIONAL PROGRAM

University of California, Berkeley



National rankings consistently place UC Berkeley's undergraduate and graduate programs among the world's best. Berkeley is home to top scholars in every discipline, accomplished writers and musicians, star athletes, and stellar scientists — all drawn to this public university by its rich opportunities for groundbreaking research, innovative thinking and creativity, and service to society.