

Discover Viterbi: Engineering Management with Professor Geza Bottlik

Viterbi School of Engineering
University of Southern California

Spring 2019

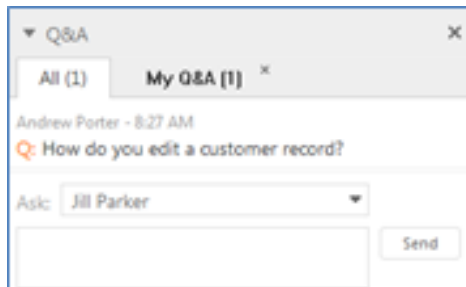
WebEx Quick Facts

Will I be able to get a copy of the slides after the presentation?

YES!

How can I ask a question during the information session?

1. Using the Q&A Panel, type a question in the box below the Ask drop-down menu.
2. Select a recipient from the Ask drop-down menu.



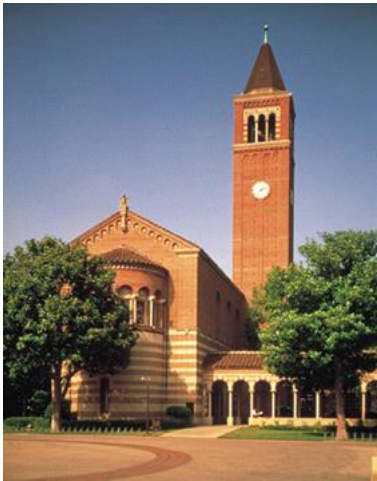
3. Click Send. We will respond as soon as we are able.

Today's Program

- University of Southern California
- USC Viterbi School of Engineering
- Master of Science in Engineering Management
 - Program Overview
 - Application Criteria
- DEN@Viterbi
- Tuition & Fees
- Q&A



UNIVERSITY OF SOUTHERN CALIFORNIA



The University of Southern California



- Oldest Private University in the western U.S.
 - Founded in 1880
- 47,500 Students
 - 20,000 Undergraduates | 27,500 Graduates
- 4,451 Full-time Faculty
- Diverse Student Population
- Located in Los Angeles

Viterbi School at a Glance



Academic Departments

- 8 Academic Departments

Faculty

- 188 tenure-track faculty
- 16 Full-time, TT NAE Members (30 Total)
- 70+ NSF CAREER, National & Presidential Young Investigator

Student Populations (Fall 2018)

- 2,767 Undergraduate
- 5,922 Graduate students

Research

- Leader in funded research
- 35+ Research Centers
- More than \$207M in research expenditures annually

U.S. News & World Report, 2019

Best Engineering Graduate Schools

- **Top 10 Ranked Graduate Engineering Program**

Best Online Graduate Engineering Programs

- **Ranked #1 Online Computer Information Technology Program (Computer Science)**
- **Ranked #2 Online Graduate Engineering Programs**

Best Online Graduate Engineering Programs for Veterans

- **Ranked #1 Online Graduate Computer Information Technology Program (Computer Science) for Veterans**
- **Ranked #2 Online Graduate Engineering Programs for Veterans**

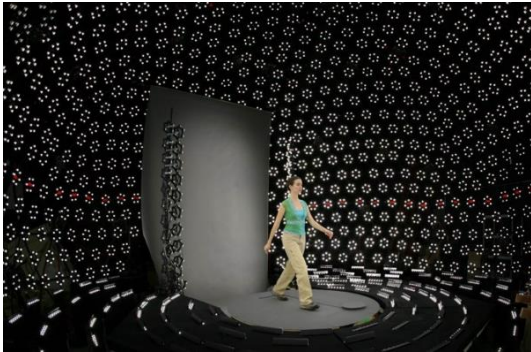
USC Engineering: Points of Distinction



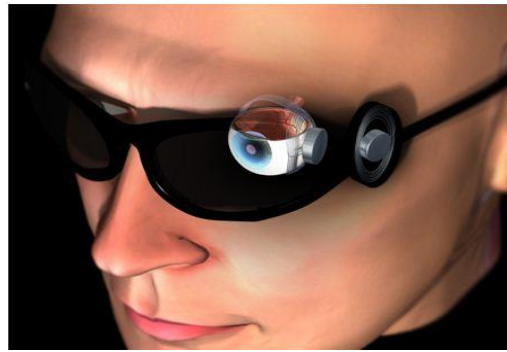
- International Reputation for Excellence
- The Trojan Family Network: 77,000+ (engineers) strong
- Unique engineering programs available:
Online, on site & on campus
- Complete range of programs
 - Doctoral, Masters and Bachelors
 - Graduate Certificates
 - Short Courses
 - Custom Programs

The Viterbi School of Engineering: A Leader in Research

Viterbi School is a consistent leader in funded research in the U.S.



Institute for Creative
Technologies



Biomimetic Microelectronic
Systems Engineering
Research Center



National Center for
Metropolitan Transportation
Research



CREATE
Homeland Security Center

- Highly interdisciplinary research environment
- Diverse research areas such as robotics, software engineering, sensor networks, vision sciences, automated construction and photonics
- Over 35 research centers
- Industrial partnerships and collaboration

Meet Professor Geza Bottlik



Professor Geza Bottlik

- Director, MS Engineering Management Program
- Degrees in Mechanical Engineering – graduate degrees from USC
- 34 years of industry experience (24 at Xerox) – Computer design, research in Physics, Industrial Engineering Management, Strategic Planning and Finance overlapping with
- 29 years at USC – Production Planning, Decision Making, Statistics, Project Management, Engineering Economy, Supply Chain Design

MS in Engineering Management

- The engineering management program is intended to prepare engineers for careers in management
- *A third of engineers become managers and are faced with problems they are unprepared for unless they have the preparation provided by this degree*
- The program is intended for both working engineers and recent graduates from bachelor programs
- Recent bachelor graduates will increase their employability and their chances of being considered for subsequent management positions, as well as becoming better engineers

Helpful Link:

<https://viterbigradadmission.usc.edu/emt>

MS in Engineering Management

- Working engineers benefit from the degree by enhancing their chances for promotion as well as becoming better engineers
- Engineers who are already managers benefit by a deeper understanding of the issues and methods involved in managing technology oriented projects
- The program averages 100 -150 students, with about 75 graduating per year
- About 20% of the students are off campus
- Classes are taught by a combination of full time professors and industry experts with substantial teaching experience
- Graduates find jobs in domestic and international positions and both in large and smaller companies

Related Organizations

- USC is a member of a consortium of top universities offering a degree in engineering management
- Current students have a very successful student organization dedicated to sharing their experience at USC and disseminating information about job opportunities (EMSA – Engineering Management Student Association)

MEMPC

Home	Students	Employers	Programs	Contact
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CORNELL UNIVERSITY



DARTMOUTH COLLEGE



DUKE UNIVERSITY



JOHNS HOPKINS UNIVERSITY



MASSACHUSETTS INSTITUTE OF TECHNOLOGY



NORTHWESTERN UNIVERSITY



PURDUE UNIVERSITY



TUFTS UNIVERSITY



UNIVERSITY OF SOUTHERN CALIFORNIA



MS in Engineering Management – Program Details

Program Requirements: Minimum of 30 units

Required Courses (12 units)

- ISE 500 | Statistics for Engineering Managers
- ISE 515 | Engineering Project Management
- ISE 544 | Management of Engineering Teams
- ISE 561 | Economic Analysis of Engineering Projects

Business and Management Area (3 units)

- Select one 500 level course with business and/or management content with adviser approval

Required Engineering Elective (3 units, choose one)

- ISE 530 | Optimization Methods for Analytics
- ISE 536 | Linear Programming and Extensions
- ISE 562 | Value and Decision Theory
- Electives
- Four courses for at least 12 units chosen to form a coherent program with the consent of the adviser.

Dual Degree Program Offerings

Viterbi also offers dual degrees of Engineering Management with:

- Electrical Engineering
 - Aerospace Engineering
 - Mechanical Engineering
 - Petroleum Engineering
- A dual degree requires a total of 48 units
 - Dual degree programs are available online via DEN@Viterbi and on-campus

Where Our Alumni Are Working

WHAT DO OUR STUDENTS DO?

WHAT DO OUR GRADUATES DO?



Application Criteria for the MS in Engineering Management

- Undergraduate degree (Bachelor of Science) in engineering, math, or hard science from a regionally-accredited university
- To be competitive, a cumulative undergraduate GPA of at least 3.0 on a 4.0 scale is recommended
- Satisfactory scores on the general portion of the Graduate Record Examination (GRE) that are less than five years old
- Resume/CV (Required)
- Supplemental Materials:
 - 3 Letters of Recommendation (Highly Recommended)
 - Statement of Purpose (Required)
- TOEFL (International Applicants)

Please visit <https://viterbigradadmission.usc.edu/emt> for complete requirements

Application Deadlines

Application Deadlines for 2019-2020

Fall 2019

- Deadline to submit all required materials: January 15, 2019*

Spring 2020

- Deadline to submit all required materials: September 15, 2019*
- Deadline for Scholarship Consideration (on-campus only): August 31, 2019

Fall 2020

- Deadline to submit all required materials: January 15, 2020
- Deadline for Scholarship Consideration (on-campus only): December 15, 2020

Helpful Links:

List of DEN@Viterbi Programs
<http://viterbi.usc.edu/DENDegrees>

USC Graduate Application:
<https://usc.liaisoncas.com>

** A deadline extension for DEN@Viterbi applicants may be available. Please email DEN@Viterbi.usc.edu for more information.*

Course Delivery Methods



Methods of Course Delivery

- On-campus, full time
3 classes per semester
1.5 – 2 years to complete
- Online delivery via DEN@Viterbi
1-2 classes per semester
2.5 – 3 years to complete degree

How DEN@Viterbi Works

The Viterbi School of Engineering uses a state-of-the-art, proprietary web-based delivery system that enables students from around the world to access classes live or on-demand.

DEN@Viterbi Students:

- View the same lectures as on-campus students, with fresh content every semester
- Participate in highly interactive discussions with professors and peers
- Submit homework electronically
- Take exams at proctored testing centers near their home or work (or at USC if in the Los Angeles area)

DEN@Viterbi Overview

	DEN@Viterbi Student	On-Campus Student
Program Admission	USC Graduate Application & required materials	USC Graduate Application & required materials
Weekly Course Lectures	Online with Interactivity	On USC's Campus
Online Course Archives (Lectures & Course Documents)	✓	✓ *
Assignments	Submit electronically according to course deadlines	Submit during lecture or lab according to course deadlines
Exams	Proctored location	USC's campus
Courses per Semester (Average)	1-2	3-4
Degree Completion Requirements	27-37 units with a 3.0 GPA or above	27-37 units with a 3.0 GPA or above
USC Diploma (No Distinction)	✓	✓

*DEN@Viterbi Sections Only

DEN@Viterbi's E-Learning System



DEN@Viterbi Classroom

DEN@Viterbi's E-Learning System

The screenshot displays the DEN@Viterbi E-Learning System interface. At the top, a breadcrumb trail shows 'Table of Contents > Week 4 > Lecture Video 09/13/2017'. Below this, the title 'Lecture Video 09/13/2017' is displayed. The main content area shows a video player with a pull-out tab on the left for easy weekly content access. The video content includes handwritten mathematical equations: $\frac{\partial u}{\partial t} = \alpha \nabla^2 u$ and $\nabla^2 u = \frac{1}{r} \frac{\partial}{\partial r} \left(r \frac{\partial u}{\partial r} \right) + \frac{1}{r^2} \frac{\partial^2 u}{\partial \theta^2} + \frac{\partial^2 u}{\partial z^2}$, along with a diagram of a cylinder in a coordinate system. The video player controls at the bottom include play/pause, forward/rewind 30 seconds, and options to play in HD (1.5MB), SD (750KB), or on a mobile device. Callouts provide additional information: 'Breadcrumbs for easy navigation' points to the top trail; 'Bookmark needed content areas' points to a bookmark icon; 'Navigate to the next item or previous' points to navigation arrows; and 'Stream in HD, SD, or on your mobile device' points to the playback options.

Table of Contents > Week 4 > Lecture Video 09/13/2017

Lecture Video 09/13/2017

Breadcrumbs for easy navigation

Pull-out tab for easy weekly content access

$\frac{\partial u}{\partial t} = \alpha \nabla^2 u$

$\nabla^2 u = \frac{1}{r} \frac{\partial}{\partial r} \left(r \frac{\partial u}{\partial r} \right) + \frac{1}{r^2} \frac{\partial^2 u}{\partial \theta^2} + \frac{\partial^2 u}{\partial z^2}$

Bookmark needed content areas

Navigate to the next item or previous

Player controls include play/pause, and forward/rewind 30 seconds

Play HD (1.5MB) Play SD (750KB) Android / IOS

Stream in HD, SD, or on your mobile device

DEN@Viterbi's E-Learning System

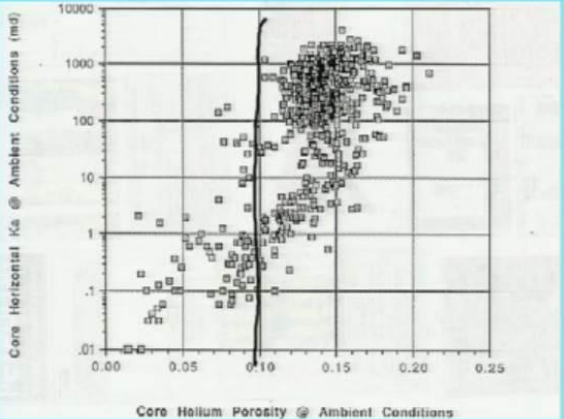
2017 USC Sec 03 Petrophysics Slides.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools 2017 USC Sec 03 P... 2017 USC Sec 03 I... 2017 Sec 03 Fm W... 2017 Section 19-A ...

23 / 74 97.6%

Helium Porosity vs. Air Permeability



Core Helium Porosity @ Ambient Conditions

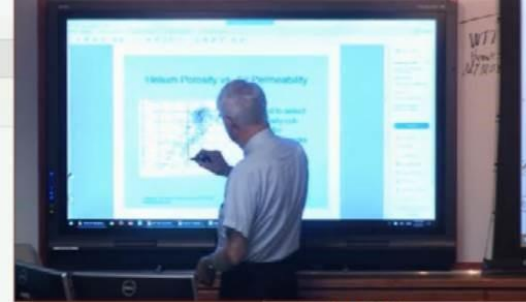
Core Horizontal K_a @ Ambient Conditions

- Used to select porosity cut-offs, for reservoir rocks.
- Based on permeability values.

Donald G. Hill, Ph.D., R.Gp, R. G., R.P.G., L.P.Gp.
dgh@hillpetro.com

PTE-461: Fall 2017 Section 3: Petrophysics

Slide No.: 23



Select PDF File

2017 USC Sec...cs Slides.pdf

Convert to

Microsoft Word (*.docx)

Document Language: English (U.S.) Change

Convert

Create PDF

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Combine Files

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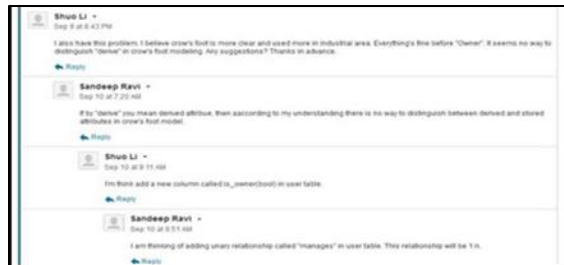
Send for Signature

Send & Track

Store and share files in the Document Cloud

USC Viterbi

Student Interactivity & Group Meetings



- All DEN@Viterbi students are provided access to their own meeting rooms which can be used for several purposes:
 - Enable video communication (web and mobile)
 - Integrate phone conferencing
 - Integrate fixed room IP video systems
 - Desktop sharing
 - Set up meetings with faculty, teaching assistants and peers
- Call in during live lectures
- Participate in live chats and threaded discussion boards

Question: Is there any difference between earning a Master's degree on campus vs. via DEN@Viterbi?

Answer: NO. DEN@Viterbi is a delivery method. Students adhere to the:

- Same Admission Criteria
- Same Curriculum
- Same Exams and Homework
- Same Academic Standards and Graduation Requirements

Therefore...

You earn the same diploma whether you earn the degree on-campus or online through DEN@Viterbi.

DEN@Viterbi Additional Info

■ Limited Status

- Allows strong candidates to begin coursework before formal admission.
- Courses (*maximum of 12 units*) can be applied toward degree program once admitted but *limited status does not guarantee admission*.
- Get Started Summer 2019: <https://viterbigradadmission.usc.edu/denviterbi/getting-started/>

■ Tuition Deferment Program

- Students supported by company can defer “up front” payment of tuition until after the semester is over.
- Company must pay 75-100% of tuition to be eligible for program.
- For additional information:
<https://viterbigrad.usc.edu/tuition-and-funding/employer-supported>

Tuition & Fees (2018-2019)

PER-COURSE FEES	Unit Cost	Tuition for 3-Unit Course	Tuition for 4-Unit Course
Tuition for 500/600 level course	\$2,005	\$6,015	\$8,020

Degree Programs are 27-36 units (9-11 courses)

For an overview of additional fees, please visit:

<https://viterbigradadmission.usc.edu/programs/masters/tuition-funding/tuition-funding-masters/>

Getting Started

For those interested in taking classes on campus:

- Visit USC campus
- Start your application:
<http://www.usc.edu/admission/graduate/apply>

For those interested in taking classes online via DEN@Viterbi:

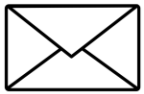
- Start as a Limited Status Student in Summer 2019 -or-
- Start your application:
<http://www.usc.edu/admission/graduate/apply>

Contact Us

USC Viterbi School of Engineering Graduate & Professional Programs



On Campus: viterbi.gradprograms@usc.edu



DEN@Viterbi: DEN@Viterbi.usc.edu



213.740.4488



<http://viterbi.usc.edu/gradprograms>