(3) enhanced career opportunities

- increased job mobility
- increased salary

(4) Personal growth & development

As you acquire new knowledge you gain better understanding of yourself & the world around you

LLL provides opportunities to explore topics of interest beyond the professional realm

per esempio,

- creative writing courses
- learn another language
- cooking classes

challenges to LLL

(1) time constraints

engrs work 50+ hrs/week

⇓

Little free time

develop time mgmt strategies
- ~~set~~ prioritize
- set dedicated time slots

(2) financial constraints

mention tuition reimbursement

(3) lack of motivation & discipline

- may have no immediate rewards
- no deadlines
- no grades

i.e., no pressure

Approaches to LLL

- in house trng/seminars
  - common at large companies
  - Done on company time

- confs/workshops — go to IEEE.org site show membership
  - join prof. societies (~~IEEE~~)
  - join local chapters attend
  - regional/intl confs
  - trade shows

- short courses
  - at local universities
  - online (MIT)
  - commercial companies

URL link on canvas

google course (play video on webpage)

click on Logistic regression module

Berkeley paid course (url on canvas)

MS OR MBA????

Depends on career goals

Author gives his opinion , so will I…

SHOW BOX PG 57 AND TEXT ABOVE

PURE BS….

SHOW INTEL MGMT SLIDE (LINK ON CANVAS)

NOTE skill set required. BS is not sufficient and you sure has hell won't learn that stuff in an MBA program

Mngr vs Engr slide

- Select google
- Select engr sftw development

So what percentage are management jobs?

———————————-

Discuss tuition reimbursement

———————————

METM or MBA??

MBA is more general; METM is focused on supervising STEM workers

Show ETM courses slide

often find themselves facing a choice: Should they pursue a master of engineering (M.Eng.) in engineering management or a master of business administration (MBA)?

Though the M.Eng. degree is slightly newer, both are established degree programs that are highly regarded — each with its own distinct path toward leadership development. But is a master's in engineering management worth it? And what's the true ROI of an MBA for engineers?

Before we answer those questions and dive into the differences, let's discuss the similarities.

Engineering Management vs. MBA: What's the Same?

Both an MBA and an M.Eng. in engineering management prepare students with advanced knowledge in the following subject areas:

- Management and leadership
- Communications
- Finance and accounting
- Economics
- Marketing
- Supply change management
- Decision-making

These programs will equip you with soft skills for engineers, plus the acumen to make confident, data-driven business decisions. However, these two degrees have important differences prospective students should take into account.

Master's in Engineering Management vs.

MBA: Exploring the Differences

Master of Engineering in Engineering Management

Earning a master of engineering in engineering management will teach you more than just how to lead an engineering team. Unlike an MBA, this program focuses on the application of management principles specific to students with a STEM background.

Typical engineering management programs take approximately two years to complete. However, Vanderbilt's online master of engineering in engineering management program **takes as few as 12-15 months**.

Request more about the online master of engineering in engineering management >>

Students

The M.Eng. in engineering management is designed for those with a background in STEM who want to transition into leadership roles. Students may come from various fields—like engineering, technology, aerospace, automotive manufacturing, or pharmaceuticals—but they all share a STEM background.

Furthermore, students in the M.Eng. in engineering management program thriveare able to collaborate with peers and professors who have similar experiences and goals precisely because the degree caters to professionals in technical fields. This empowers students to build connections with other leaders in their industry.

Engineering Management Classes and Curriculum

Upon initial observation, the courses within an M.Eng. in engineering management program may seem comparable to those in an MBA program. However, upon closer examination, it becomes evident that the M.Eng. subjects are delivered with a focus on

engineering-specific duties and responsibilities.

For example, the M.Eng. in engineering management examines how finance, staffing, and technical requirements contribute to the efficiency of an organization — and how these factors impact the final product. In Vanderbilt's online master of engineering in engineering management program in particular, students take courses that cover a wide array of topics, including:

- The design process of engineering
- Project management
- How to make software-assisted decisions
- Intellectual property law, as it applies to engineers and scientists
- Marketing for tech products

Engineering is a technical field that requires creative problem-solving, and it's built upon a desire to build and test new ideas. To hone those skills, most engineering management programs include hands-on projects as part of their curriculum. Vanderbilt goes even further, requiring students to apply what they learn to complex business systems and then develop a final capstone project which they will present.

Outcomes

Graduate with an M.Eng. in engineering management, and you'll be prepared to take on leadership roles within engineering, technology, and other scientific organizations and companies...Or even start your own company. As a multi-talented professional, you will confidently bridge technical engineering knowledge with organizational and people management skills. Some graduates even go on to lead organizations outside the tech industry, provided that they are influenced by technology and engineering.

Earning an MBA

An MBA can also help engineers advance in their organization or industry. However, MBAs prepare engineers for more general roles in the business world, as opposed to engineering or tech-specific ones. Full-time MBAs typically take two years to complete.

Students

MBA programs are ideal for individuals seeking broad business knowledge and leadership positions in a variety of fields or industries. Many students in these programs pursue more traditional business professions, like finance or marketing. Few MBA students are engineering MBA students who aim to enter the engineering field after they've earned their diploma.

MBA Classes and Curriculum

MBAs are built for generalists. These programs cover a breadth of subjects and skills needed to lead in a range of business environments, though they rarely hone in on specific industries. You can expect to see curricular topics like supply chain management, accounting, organizational behavior, project management, economics and statistics.

LINK ETM COURSES on canvas @PSU

Outcomes

MBA graduates acquire skill sets that contribute to improving company performance and show a return on investment. The comprehensive nature of an MBA education prepares graduates for leadership roles in various industries, but it may not offer the same depth of engineering-specific knowledge as an M.Eng. in engineering management degree.

Take the Next Step on Your Engineering Career Path

An advanced degree will help you acquire the engineering leadership skills you need to

A working definition...

> Once you have defined success, a mentor is simply someone who will help and guide you to achieve it.

Origins of the word "mentor"

Comes from Greek mythology.

In the Odyssey, the main character, Odysseus entrusts his friend, Mentor, to help him prepare to fight in the Trojan war*.

Mentor serves as a wise, responsible and trusted advisor who guides Odysseus's development.

*Odysseus was the King of Ithaca. The *Odyssey* chronicles his ten-year journey home after the fall of Troy.

Finding mentor not easy → author says find one in your field ~~Daddy~~ duhhh

i.e w/ HR

check to see if your company has a mentoring program

these programs help grow internal talent

Roles:

Mentors

- Senior engrs (lots of expr.)
- meet regularly with mentee
- motivates mentee to achieve their career goals
- share best practices
- identify problems
- provide timely advise

Mentees

- engrs who believe a mentor would be beneficial
- organize mtgs with mentor (and schedule)
- take mentor's advise and run with it

mentor ≠ mgr

mgr → focuses on organization and team goals.

Advice is in line with organizational vision

mentor → focuses on personal and career growth

Notes: ① don't ask your mgr/supv. = to be a mentor

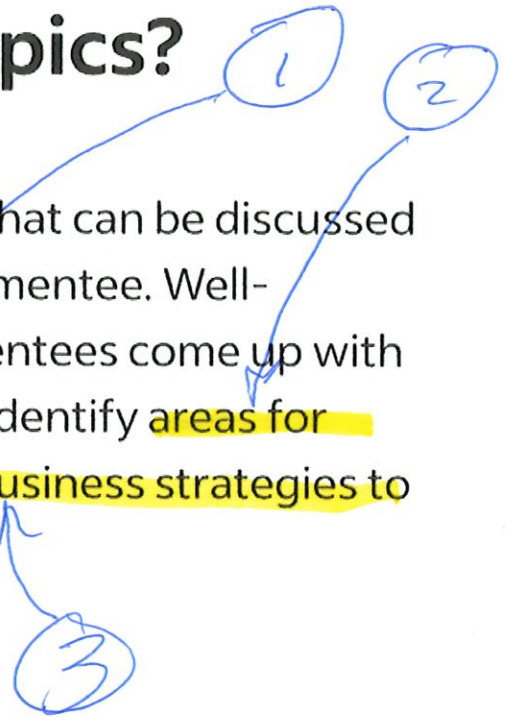
② not everyone needs a mentor

soft
- could get advice by chatting with lots of people
- some people learn best alone

③ engr does not need a mentor to grow
i.e. not a regt

What are mentoring topics?

Mentoring topics are items of importance that can be discussed during a meeting between a mentor and a mentee. Well-structured topics of discussion can help mentees come up with creative solutions to workplace problems, identify areas for personal improvement and cultivate new business strategies to reflect changes in their industry.



now do discussion grp shown on 2 next pg

Sample Goals You Might Set with Your Mentor

- Develop a study plan for taking and passing the Principles and Practice of Engineering (PE) exam.
- Create an outline with the steps I need to take to help me reach the project manager I level (or any other position you wish to obtain in your company).
- Join and get actively involved in a professional society.

4 types of ques. for your mentor

Notice specific questions

1) stories

- ask them about their career
  - How did you get to where you are today?

Discussion grps
What would you ask yr mentor?

  - Did you envision 5 yrs ago that you be where you are?
  - Which skills were difficult to acquire?
  - Did you ever get a position that you weren't really qualified for? What did you do?

2) situations

~~Which skills are the~~

- who should I align myself with to get ahead in this co?
- how do I tell my boss I don't need to be micro managed
- I have 2 possible career paths what should I consider?
- what's the best way to get assigned to an interesting Design proj?

3) Self awareness

- where do you see my strength? (weaknesses)
- how am I viewed by mgmt?
- how can I communicate my ideas more effectively?

4) Skill Building

- can you recommend a book that helps dealing with difficult people?
- what new skills do I need to advance?
- how can I do better at managing people?

Consider Being a mentor yourself

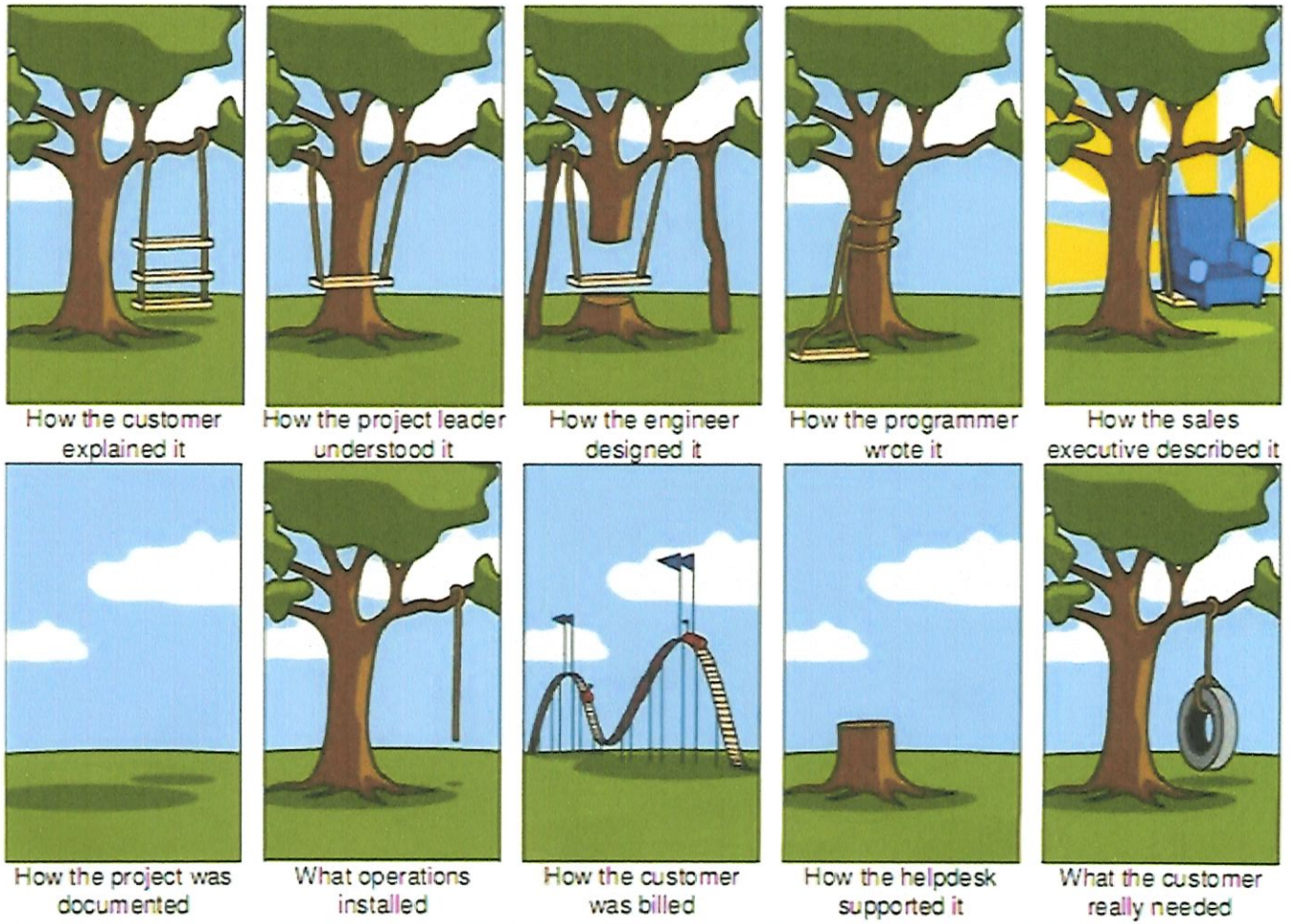
---

how to end mentorship

Say
- mentor can't provide any more useful help

Be honest
Be grateful

Perils of Poor Communication



Communications
(as important as technical skills)

when you learn to use commo skills properly you

- get the attention of others
- engage others with you
- get your point across
- persuade others

Domanda: So why are commo skills important???

(let class answer first)

Risponde:

1. Often work in teams and collaborate with others.
2. Present ideas to clients and stackholders

NOTE: this requires *presentation & public speaking* skills. (see next page)

Also the ability to *translate* complex technical concepts into terms non-technical people can understand. Success on a project often depends

- getting funding (e.g., from a venture capitalist)
- get regulatory approval
- gain public support

Engineers must also develop *active listening skills*. This means (*a*) pay attention to what others are saying and (*b*) asking questions to clarify.

Engineers must also develop *written skills*. Includes writing

- clear and concise emails
- technical reports
- technical documents (datasheets, user guides, etc.)

lab reports

Let's discuss in more detail….

Public speaking

many are intimidated by public speaking necessary to develope ability to speak in small groups (design teams, ECE 424 size groups…) as well as larger audiences (trade shows, conferences…)

***** Show awful presentation MP4 located in thevideo folder on canvas**

Preparing an Oral Presentation

Points to consider:

- ❑ Audience
  - Interaction
- ❑ Time and focus
- ❑ Organization
- ❑ Practice

Points to Consider: Audience

- Who is your target audience?
  - What do they know?
  - What is there level of expertise/sophistication?
  - What will interest them?

- Connecting with the audience:
  - Present your topic as an interesting problem or question
  - Provide some context: Why is this presentation worth listening to?
  - Try to engage the audience - e.g. ask them a question

Points to Consider: Time and Focus

- How much time do you have?

- What is the essential information that must be conveyed
  -Central point
  -How much detail is necessary/appropriate

- Biggest problem is trying to cram too much information into a presentation

Suppose you have to give a technical presentation to secure funding or at an international technical conference.

Organization

- introduction
- body
- conclusion

What you're going to tell them

❑ Introduction

- Clear& prompt interest
- Provide an overview of the talk
- Clearly express the purpose of the talk (and the project)

❑ Body of the talk:

- Follow the order established in the introduction
- Provide clear "road signs"
- Stay focused and on-message

❑ Conclusion

- Briefly summarize important points/results
- Provide a concise "take-away" message