

# “Talk To Me”: A Toolkit for Engineering Educators

Thank you for your interest in testing materials designed for use with 1<sup>st</sup> and 2<sup>nd</sup> year undergraduate students in engineering. Research shows that there are many kinds of student-faculty interactions which increase student learning, with positive effects on retention. Based on those findings, these materials are designed to be used in communicating those benefits *to students* and to provide direction and advice about how they can be more proactive in developing effective interactions with faculty.

## Introduction

A part of this work has developed from empirical studies showing the positive beneficial effects of mentoring of students by faculty. Yet many faculty members assume that the benefits of mentoring can only be found through fairly time-intensive undergraduate research, which typically can engage only a fraction of their undergraduate students. We have chosen the term “student-faculty interaction” to highlight the findings that much less time-intensive efforts also have positive benefits for student learning and success. Just as we have found that mentoring programs can be more effective when mentor *and* protégé *training* are provided, we also expect that we can enhance the likelihood of positive student-faculty interactions if we provide direction for both students *and* professors, through materials appropriate to each.

## Using “Talk To Me” materials

The “Talk To Me” materials are designed to be used by Women in Engineering Program Directors and Student Affairs administrators with 1<sup>st</sup> and 2<sup>nd</sup> year women engineering students to increase student-faculty interaction. The materials have two components:

1. The attached communications to students, consisting of 3 pages of “handouts”:
  - a. “How and Why to Talk with Your Professors”
  - b. “What to Consider *Before* You Meet with Your Professor,” and
  - c. “What to Say When You Meet with Your Professor,”
2. A PowerPoint® slide deck, with similar content designed to be used in a group setting for presentations

Each of these components is deliberately designed to be used either “as is” or, to be customized, in design and/or content, for adaptation to the specifics of the local student population on any given campus. Please feel free to add your own examples, modify graphics, content, delete sections you feel won’t resonate with your students, etc. We encourage interactivity with students in conveying this material to them.

## Evaluation

Evaluation is an important goal of the Talk To Me project, and the project directors<sup>1</sup> welcome your suggestions for improving the materials and advising other effective aspects of delivery. We would like to hear from you about how you have used these materials, and obtain copies of your modifications, if you’re willing to share them so that we can improve them, and distribute those improvements more widely for others to benefit.

**About “Talk To Me”:** *Talk to Me: Improving Interactions between Engineering Faculty and Women Engineering Students* is a project designed to enhance the abilities of 1<sup>st</sup> and 2<sup>nd</sup> year undergraduate engineering students, especially women, to initiate interactions with faculty which can increase their learning. Based on the hypothesis that if both students and faculty have greater awareness of the importance of student-faculty interaction and improved abilities, it is more likely that effective communication and higher satisfaction with engineering educational experiences will result. Directed by WEPAN, the “Talk To Me” project is complementary to a portion of another ongoing project – over five years, ENGAGE will work with 30 engineering schools to improve retention of students in engineering, particularly women during their 1<sup>st</sup> and 2<sup>nd</sup> years of study, and one of the project’s strategies is focused on building faculty knowledge and skills to improve opportunities for faculty-student interactions.

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# Why and How to Talk with Your Professors

**Congratulations!** You have chosen to explore one of the most interesting and useful majors ever. Engineers are essential to the health, happiness, and safety of everyone in the world. The problem solving used by engineers provides an approach to help solve large and small, simple and complex problems, and can be applied in many contexts. As a result, engineering is a highly creative profession. Engineers help shape the future!

As you first learn more about engineering, or even are just taking the math and science classes that are prerequisite for the major, the sheer amount of knowledge to be absorbed can be daunting. Rest assured – everyone encounters it that way to some extent. One of the paradigms of learning is that in order to learn new things, most people feel a little lost and uncertain at times. You have some amazing guides available to help you – your **professors!**

So here's the interesting thing – research shows that if you interact with faculty informally, you will **learn more, enjoy learning more, be more inspired, get better grades**, and many other benefits. That's *why* you should make the time and effort to talk with your professors.

If you've already stopped in the offices of the professors teaching your courses to say hello and talk with them, you're on your way. Have you? If so – congratulations! You'll probably find it relatively easy to let them know if you are having trouble with any assignments or have any difficulty in mastering the material.

If not, however, you're like most of us – we know it's important, but...

- You are worried they'll think you don't know enough,
- You think the professor is intimidating,
- It seems like “sucking up to the teacher,”
- You find it hard to make the time?
- You have too much homework today, tomorrow, and the rest of the week, or
- That professor seems too busy to talk, or
- Your friends are waiting for you right now, or
- It's time for dinner (or lunch, or pizza...), or
- You have another class to attend, or
- You'll be late for lab / practice / rehearsal / you name it, or
- That professor is kind of a nerd, or

*and anyway...*

- You don't know what to say...

## What to Consider *Before* You Meet with Your Professor

If you can identify something you need or might want to talk about before even approaching a professor, it can increase the likelihood that the conversation will be easy and helpful. Here are some quick ideas to help you get started, followed by some “openers” you can use if they feel right to you.

Remember that it’s easier, but not essential, to get to know a professor *before* you start having problems with a course. In any case, it will be easier if you *don’t wait for a crisis* to meet. You are more likely not to have a crisis if you do meet your professor, and professors will be more responsive to any situation where you might really need their help if they already know who you are and something about you.

Even though we are providing some ideas to help make it more comfortable to knock on your professor’s door and have a conversation, do *remember that it’s all right just to go to meet the professor – you don’t have to have an urgent reason.*

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Below are some approaches you could take and questions to consider before you go see a professor (if just one of these is helpful, that’s fine... you don’t have to prepare them all!):

- To help get your thought processes started, explain in less than 1-3 sentences why you are exploring engineering as a major, and what you hope to learn from this professor.
- If the professor has been assigned to be your advisor, do you know how your school expects you to interact?
- Are you confident about your preparation for the course this professor is teaching?
- Do you have questions about how the course content fits in with the major?
- Do you wonder how the material covered in this course is related to what engineers do in the “real world”?
- Are you concerned that you might not have the right preparation for this course?
- Do you feel as if most of the other students are understanding everything in the class but you’re not?
- Have your previous courses already covered the material that this class seems to be going over?
- Have you found other students in the class to study with?
- Do you have other questions or concerns?

### Logistics Preparation

- Does your professor have listed “office hours”? If so, plan to come to his or her office during that time. While engineering professors are incredibly busy and dedicated people, and sometimes travel the world in connection with their work, during office hours, they are prepared to meet with students, and sometimes no one shows up!
- If you can’t get to your professor’s office hours, or you can’t get information about when they are scheduled, then you probably will want to send email to the professor. If you don’t know his or her email address, you can almost always find it on your campus’ web site.
- Take a look at your professor’s web site, and/or “Google” to learn more about her or him – it’s interesting to see what you can find, and learning a little bit more about the person make your approach easier.

## What to Say When You Meet with Your Professor

Pick and choose any or a combination of items from the following “openers” that seem like something you could say. You should feel free to put them in your own words, but remember that you’re talking with a professor, not your roommate or sorority sister – it’s probably been awhile since this person was an undergraduate, and she or he might not remember how it feels. Think about how you might talk with your parents’ friends, or your aunt or uncle.

- “I ended up spending about [45 minutes / two hours / half the night] working on [problem #5 / today’s homework / my project] yesterday, and I have a feeling that’s not what most people did. I’m wondering if I could talk with you about how I’m approaching it to see if you have some suggestions that might help me be more efficient next time?”
- “Hi, my name is \_\_\_\_\_ and I’m from \_\_\_\_\_ [hometown, state or country].”
- “I’m in your [name of class] course, and I just wanted to stop in to say hello, so you could easily put a name and face together.”
- “I was wondering about the project coming up, and how you might advise our group to select a topic or focus.”
- “In class [or lab] today, there was something I didn’t quite understand – [describe what was unexpected or confusing].”
- “I was good in math and science in high school, so various people told me I should go into engineering... but I’m still trying to figure out all the different kinds of things engineers do. Would you be able to take a few minutes to tell me more about your work?”
- “I noticed on your web site that you do research in [disciplinary area, location, or topic] – can you tell me more about that?”
- “I’m trying to find a job this summer that will help me to learn more about what major I should pursue / what I might do after I graduate. Do you have any advice about what might be feasible?”
- “I’m really curious about engineering research, and wonder if your work ever has opportunities to involve undergraduates.”
- “If I wanted to learn more about research to consider whether or not I might later want to pursue graduate work in engineering, do you have any advice about how undergraduates might get involved in research?”
- “I’m really interested in [“green” technology / civil engineering / mobile computing / water / energy / environmental engineering / health-related engineering / etc.] – can you suggest which professors at our school are working in this area?”

## What Can Go Wrong

It can happen – you can take the initiative to meet a professor, but feel brushed off, rebuffed, or treated as if they’re not listening at all. Please remember that professors are also human beings – they rarely would intend to be rude, abrupt, or dismissive. Professors are busy like all of us and typically really enjoy their work and welcome students (sometimes in their own quirky ways!), but once in awhile, like all of us, they may have a bad day. Try not to take it personally, and do try again on another day. Remember that not every professor has to feel like your friend or role model for you to learn from them; and it’s natural that you’ll enjoy interactions with some more than with others. If conversations with one don’t have much longevity – try another!