TCN 101 Introduction to Engineering Technology

3 Credits (3 class hours/week)

Judy Donnelly
Room C272
Or look in the labs, B205-B213

What this course is about:

The purpose of this course is to prepare you to succeed as an ***engineering technician***. Just what is an engineering technician, exactly?

> *Technicians are problem solvers – individuals who skillfully combine their technical knowledge with a set of problem solving skills and dispositions to tackle real-world issues across diverse settings. Working side-by-side with engineers and scientists, technicians are the "hands-on" side of an engineering team, responsible for designing experiments, building and troubleshooting prototypes, analyzing and interpreting data, and presenting experimental results to peers, supervisors and customers.*
> (Adapted from Massa et al, PHOTON PBL: Problem-Based Learning in Photonics Technology Education, ETOP proceedings, SPIE, 2007.)

This course will provide a variety of activities that are designed to make you think about what you are doing when you have to solve a technical problem. You'll practice using math "in context", record and analyze observations, look for trends and draw conclusions. Although most of the activities will involve light and/or nanotechnology in some way, the underlying principles- measurement, analysis, observation, critical thinking- are important across all technologies.

So how does this work?

Each class will have an activity on some "theme" (but of course, there is always an underlying math/communication/technical skills component!). I'll let you know what the next class's topic will be the week before, and maybe even give you some preliminary reading to do before class, so you can be mentally prepared. I will give a brief (maybe a bit longer) introduction and then YOU get to WORK. Our in-class tutor and I will walk around and answer questions, but don't be surprised if we answer questions with other questions! You'll be expected to keep on task and get everything completed- and cleaned up if need be- on time. I will check off on your notebook or data sheet when I think you have enough material to complete the assignment at home.

You should expect to spend 3-4 hours to complete most of the assignments as homework, either alone or with your group. I don't

accept junk, so do your best. If you get stuck, send me an email or look for me in office hours.

Your grade for the semester will be the average of all of the homework assignment grades- simple as that. So do your best.

Text: There is no textbook, but there will be lots of handouts plus reports and homework you'll need to keep organized. ***How will you do that?*** **You will need:**

- **A binder (about 2")]**
- **A notebook, preferably one that fits in the binder! You'll use this for class notes, data and observations**
- **Some separators for: handouts, homework to turn in, graded materials that have been returned**

If you do a good job organizing, you'll never have to ask me "What did I get on that lab?" or ask yourself "Now where did I put that data?"

DETAILS:

Communications

I communicate mostly by email. **I am not often near a phone, and I'm not going to be texting all of you. So please check your email often. My email address is jdonnelly@lasertechonline.org.**

Cell phone policy

Cell phones and pagers must be turned off during class or lab activity time. Yes, this means you.

Students with Disabilities

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact the Disabilities Counseling Services at 383-5240. To avoid any delay in the receipt of accommodations, you should contact the counselor as soon as possible. Please note that I cannot provide accommodations based upon disability until I have received an accommodation letter from the Disabilities Counselor.