

Engineering @McLennan

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What's Happening



Looking back on another year of engineering at McLennan, it is amazing how far we've come in such a short amount of time! It's crazy to think that, just a few years ago, we were crossing our fingers hoping a couple students would sign up for Intro. And now we've finished the biggest class yet, with 16 students completing the engineering sequence.

Probably the most exciting thing that happened this year was the addition of a new faculty member, Paulina Sidwell, who previously served as an adjunct instructor, joins us full-time this fall. The extra help was certainly needed, with **more than 200** seats filled in engineering classes between the fall and spring semesters. We hope you enjoy this newsletter and welcome any news you have to share back with us.



New Degree Plans

We are proud to announce that we have been approved to offer six new engineering degrees at McLennan. Starting in fall 2013, we will offer an Associate of Science in each of these engineering disciplines:

- Biomedical
- Civil
- Industrial
- Chemical
- Electrical
- Mechanical

By offering discipline-specific degrees, McLennan offers engineering students the ability to focus specifically on the classes they need for their field, instead of being put into a one-size-fits-all degree plan. McLennan also now offers a Certificate of Engineering Essentials, which is one-half of an A.S. in Engineering, providing students with yet one more option at McLennan!

*"I learned so much
in your classes...
I actually have a lot of students
coming to me for help."*

— Yuri Unterreiner,
2012 McLennan Engineering Graduate

Mars 101

This past April, three engineering students and one faculty member were among two crews that traveled to the Utah desert to live “in simulation” and conduct independent research at the Mars Desert Research Station (MDRS). MDRS is a lonely habitat in the desert outside of Hanksville, Utah, built for the express purpose of supporting scientific inquiry necessary for the human exploration of Mars. It is run by the Mars Society, an international nonprofit organization dedicated to promoting humans-to-Mars.

For one- or two-week rotations, crews of six live at the hab as Mars pioneers may one day live: rationing water and food, completing otherwise-ordinary tasks in space suits, and generally trying to get along in cramped quarters.

McLennan offered a course this semester whereby students proposed independent research projects in their respective fields. After an extensive application process, students from Engineering, Biology, Geology, and the Medical Lab Technician program were selected to be part of these crews. In addition to being responsible for their own work, students were given specific instruction in team building, and had to complete several preset labs in Biology, Chemistry, Astronomy, and Geology. Additional preparation on campus focused on safety, team-building, and background on space exploration and space advocacy.

Upon their return, students created posters to present at a Student Research Symposium at McLennan and also gave formal presentations about their research in various classrooms. Additionally, most of the students presented their findings at the Mars Society Convention in August 2013 in Boulder, Colorado.

Engineering students who participated were Kyle Flaherty (EE), Bao Pham (ME), and James Veselka (ME).

We have a Mars 101 cookbook available!

Search for “Mars Home Cooking” on Amazon.com. All proceeds from the cookbook sales will support the Mars 101 program.

New Faculty Spotlight

Paulina Sidwell joined the faculty this year as an adjunct professor. Originally from Monterrey, Mexico, Professor Sidwell attended New Mexico State University, where she played Division I tennis while getting her B.S. in Industrial Engineering. She also received her M.S in Industrial Engineering from NMSU.



As an undergraduate, Professor Sidwell was vice-president of the Student Athlete Advisory Committee and was an active member of the school's Tau Beta Pi and IIE chapters. At graduation she was honored with the Outstanding International Student Award and the Joe and Van Bullock Medal of Honor to Outstanding Female Student-Athlete.

This past year, she served as the crew geologist on the Mars 101 trip on MDRS Crew 128A. Professor Sidwell will be teaching the new Engineering Economics course, as well as the new Digital Systems Lab, in addition to some sections of Introduction to Engineering and Engineering Graphics.

Where are they now?

Mark Berry is studying civil engineering, with a concentration in water resources, at UT Arlington. Upon graduation, he has plans to earn his Master's in Engineering at UTA (a terminal degree for a practicing civil engineer). Mark continues to work full time at TxDOT in Waco in hydrologic and hydraulic design and assists the TxDOT Hydraulic Engineer directly in the design of bridges, culverts, detention ponds, storm sewers, and other related projects. With a 2-year-old and a new baby who arrived just this summer, he has plenty to keep him busy!

Jesus Contreras continues his studies at Texas A&M and should graduate with his B.S. in Civil Engineering this December. He's looking forward to coming back to a fantastic job in Central Texas.

Ronnie Featherston is at the University of Houston studying Petroleum Engineering.

John Gibson is keeping busy at Texas A&M. Not having enough to do with two kids nearing 4 and 2 years old, he's taking 18 hours a semester and plans to complete his degree in Civil Engineering soon. John says, "Texas A&M is very exciting (I think ... seeing as I never stick my head up and look around as my eyes are always glued to a screen or book!)" Glad to hear nothing has changed, John!

James Grisham is continuing toward a Ph.D. in Aerospace Engineering at the University of Texas at Arlington. He spent the summer at NASA's Langley Research Center working with an expert in computational aeroelasticity.

Cody James is at UT Arlington working on a major in mechanical engineering and a minor in nuclear engineering. He spent his summer in an internship at White Wave Food Industries.

Jacob Lowe continues towards a B.S. in Aerospace Engineering from UT Austin. He describes his engineering course work at McLennan as "dang useful," adding, "I've been using just about everything required at McLennan: MATLAB is a huge part of my current course work."

Ryan Mezynski is at Texas A&M majoring in Mechanical Engineering. He expects to

graduate in spring 2015. He's currently working as a Research Assistant for the Materials Science Department at Texas Engineering Experiment Station (TEES) with research in Equal Channel Angular Extrusion (ECAE). Upon graduation, he plans on working as a Mechanical Engineer in the Central Texas area.

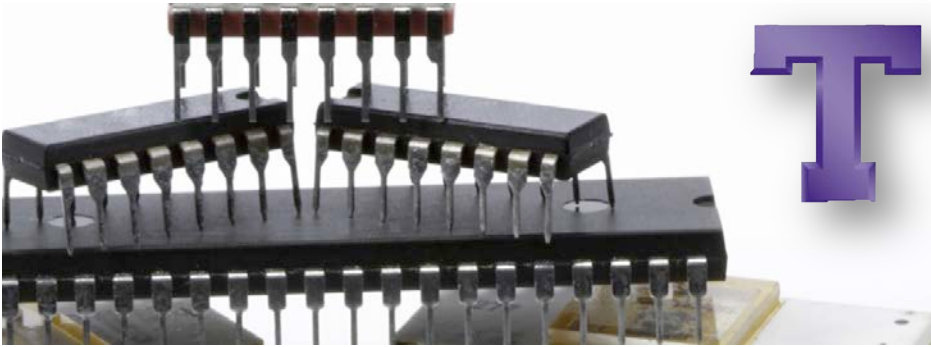
Adam Steiner is studying Electrical Engineering at UT Dallas.

Yuri Unterreiner is working on a degree in computer engineering at UT San Antonio. Given her "mad Matlab skillz," we are certain she will find all kinds of success. And for those who remember Toki the hedgehog, he is still doing great – he is his normal same grumpy self.

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New (& Improved) Articulation Agreements

This was a busy year for articulation at McLennan. We nailed down course correlations with the University of Texas at Arlington in Mechanical, Civil, Electrical, and Industrial Engineering. We updated existing agreements with Texas Tech University, adding Computer Engineering to our list, to bring the total to eight transfer plans to Tech. The agreements are now even stronger and continue to include standards for automatic admission. Finally, we developed 2+2 agreements in Computer Science, Engineering Physics, and Environmental Engineering with Tarleton University.



Bachelor's Degree in Engineering on McLennan's Campus

One of the most exciting wins we had this semester was to bring an engineering degree to the University Center. Tarleton University now offers its ABET-accredited Bachelor of Science in Engineering Physics, a degree that prepares students for work in the electrical, computer, and semiconductor industries here in Waco. With the dual focus, students will be prepared for graduate study in either engineering or physics. The program is offering its first class, ENPH 345 Electronics, on campus this fall.

New Courses

We are excited to offer two new classes this fall:

Engineering Economics and Digital Systems.

Engineering Economics will provide students with the basic tools required to analyze engineering alternatives in terms of their worth and cost.

Digital Systems is a freshman-level EE class focusing on theory and design of digital logic, circuits, and systems.

That's Nice, *but* Can You Prove It?

Every professor, even in an engineering class, always hears, "But how does this apply to the *real world*?" Well this year, 16 lucky Dynamics students got a good, solid answer. The class divided into four teams, with each group developing a Rube Goldberg machine highlighting 15 different topics from the first half of the course. But this was no cross-your-fingers-and-hope-it-works project: Every machine had to have an 80 percent completion rate, and each team had to prove mathematically why their design worked! The machines were on display at the McLennan Student Research Showcase on April 26. Check out the videos at YouTube.com. Search for "Dynamics Veselka" and "Rube Goldberg McLennan."



Sample of where our Spring 2013 engineering grads are in Fall 2013

Texas A&M:

Octavio Jaramillo (Civil),
James Veselka (Mechanical),
Brian Dempsey (Mechanical)

Texas Tech:

Chris Button (Mechanical),
Jessica Unger (Mechanical),
Austin Price (Petroleum),
Tyler McAllister (Mechanical),
Francisco Ramirez (Mechanical),
Casey O'Connor (Mechanical)

Texas A&M Kingsville:

Michael Vorderkunz
(Mechanical)

University of Texas at Arlington:

Bao Pham (Aerospace)