Who will take home the 2013 Tech Factor Trophy??

You’ve seen it in the IE lab, now the time has come to claim the trophy for YOUR department! MOPD’s talent show, Tech Factor, will take place in Ryan Auditorium on May 31, 2013!

The show starts at 7:00pm. Come cheer on your talented friends and classmates and make sure that your department takes home the trophy!

It’s not too late to join the competition!

Email Heather Bacon to let her know you would like to participate and provide a description of your talent! OR visit the website to submit a 2-3 minute video of your act!

Check out the video of last year’s winner on the MOPD website.

Not Sure Which Major is Right for You?? Check out the Major Snapshots

These one-page Snapshots provide a basic introduction to each major and contain information such as the field’s top 5 challenges in the next 5 years, graphical representations of how upperclassmen spend their time, post-graduation plans, interesting upper-level courses, research areas and more!

The Snapshots are available on the MOPD website and will be introduced on a rolling basis.

For now, check out the Snapshots for Industrial Engineering, Chemical Engineering, Civil Engineering.
Join the MOPD Student Advisory Board!

The MOPD is looking to fill a few openings on its Student Advisory Board for the 2013-2014 academic year. The mission of the McCormick Office of Personal Development (MOPD) is to encourage each engineering undergraduate to:

*Explore* personal strengths, values, and goals; and explore opportunities to build essential skills
*Engage* with academic, professional, and extracurricular experiences in an intentional way
*Transform* into an adult with a clearly defined sense of purpose and the skill set to succeed

MOPD seeks to accomplish its mission through fostering **five core competencies**:

**Awareness**: Leveraging intellectual curiosity and the confidence to question toward the formation of personal, professional, and civic identity

**Optimization**: Identifying tensions among competing resources and desired outcomes, and applying resources in order to accomplish goals

**Fidelity**: Loyalty to a consistent level of quality and integrity based on internal motivations rather than external demands or rewards

**Resilience**: Persevering in the midst of challenging situations

**Self-Reliance**: Confidently applying knowledge of one’s self in the service of your values and goals in the face of uncertainty

The Student Advisory Board supports the mission of MOPD by contributing to the development, planning, and implementation of programs for McCormick undergraduates. Board members will have significant input into these MOPD programs and will offer insight into students’ interests and needs.

Interested? **Submit a statement** telling us why by FRIDAY, MAY 17th!
Helpful Hints from Heather

Heather Bacon is your one-stop shop for all of your McCormick advising needs. Registration can be overwhelming, but no one understands the ins and outs of the process better than Heather! As you prepare for registration, Heather has a few “hints” to ensure that the registration process goes smoothly. Check them out!

- **Freshmen in ME, IE, and ChemE**: Be sure to attend a group advising session (this is where you will receive your sophomore year study plan). Information on dates and times of group advising is being sent through your departments.

- **Freshmen in all majors other than ME, IE, and ChemE**: Your department may have a mandatory group advising session but you will need to pick up your study plan in L269. Group advising information will be sent by your department. Unless directed by your department to only attend group advising, you should sign up for an advising appointment with the advisor listed on your study plan.

- **Sophomores and Juniors**: Your study plans have been sent to your faculty advisors. Unless you have received an email stating that your advising assignment has been changed, you should meet with the same person you’ve been seeing throughout the year.

- **Seniors**: Pick up the envelope with your name on it that is outside of L268. These envelopes contain information on receiving your diploma and details on the MEAS convocation. (This applies to students graduating in June or August of 2013).

Enjoy the remainder of the 2012-2013 school year!!

Featured Student Artist: Lauren Tyndall

When Lauren was younger, she would often take apart mechanisms and objects to figure out how they worked and then put them back together. This curiosity has fed both her art and engineering work. In her art, Lauren reinterprets and relates her voice and life experiences to her audience through different mediums and processes, including oil painting, photography, drawing, printmaking, and dissemination. She will be receiving a B.S. in Combined Studies focusing on Mechanical Engineering Design with a Minor in Music Technology, and has often used her engineering training to develop work in her art practice. Experience more of Lauren’s work on the MOPD website. Nominate a Student Artist for next quarter!

Featured Faculty Profile: Igal Szleifer

Igal Szleifer joined the Northwestern faculty in 2007 and is chair and a professor of biomedical engineering. He is also a professor in Northwestern's Feinberg School of Medicine, and (by courtesy) of chemical and biological engineering.

Szleifer’s research focuses on molecular modeling of biointerfaces.

He has a BS and PhD in chemistry from Hebrew University of Jerusalem, Israel.

Learn more about Professor Szleifer on the MOPD website.
Want to Study Global Healthcare in South Africa?

LOCATION: Cape Town, South Africa
UNIVERSITY: University of Cape Town
TERM: Winter Quarter 2014

PROGRAM DESCRIPTION: Designed exclusively for engineering students, this Northwestern IPD program offers hands-on experience in developing medical devices to improve health outcomes in resource-poor environments, particularly the townships of Cape Town. While learning about healthcare needs specific to developing countries, students work closely with University of Cape Town (UCT) faculty and local health professionals. The emphasis is on problem definition, user-centered solutions and the utilization of appropriate technologies. The program is organized in conjunction with McCormick’s Center for Innovative Global Health Technologies (CIGHT). This program offers the equivalence of 4 quarter units. The application deadline for this program is June 1st, 2013.

COURSES:

- Healthcare Technology in Resource Poor Environments
- Healthcare Technology Assessment and Planning
- Healthcare Technology Innovation and Design
- Health and Community Development in South Africa

Information Session: Thursday, May 9 at 3:30pm
BME conference room in Tech

Learn more about the Theme Requirement: Advising Workshop, Thursday, May 2

Time 3:00-3:45pm
Location: Tech, L170

The theme workshop is a great opportunity to learn more about the seven-course social sciences and humanities requirement that all engineering students must complete by graduation. Come get the details on how to complete your theme!

If you cannot attend the theme workshop but would like to discuss this requirement with someone, please email Claire Gallerano to schedule a one-on-one appointment.

Covering the “Basics” for Undecided Students

Looking for a Basic Engineering course but can’t decide whether to major in Chemical or Environmental Engineering?

Chem Eng 211 counts towards both degrees!

Make the most of your Basic Engineering courses by choosing a course that counts towards your BE requirement in multiple majors. Check out the Basic Engineering Course Selection spreadsheet in the Academic Life section of the MOPD website under “Tools for Academic Planning” to find a course that is right for you!
Advising Notes

Applied Math

- Within the applied math major, students stay with their same advisor for their entire time in the major. If you are new to the major and you don't already have an advisor, then your advisor depends on your class. If you are a rising sophomore or senior, then see Prof. Silber. If you are a rising junior, then your advisor is Prof. Riecke.

- Forms for a **dual engineering degree**, and for the department **honors program** can be found online.

Chemical & Biological Engineering

- Sophomore courses – The sophomore course sequence has new flexibility! There are two offerings for CHE 210, 211, and 212.

<table>
<thead>
<tr>
<th>Standard 4-Year Chemical Engineering Program</th>
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<tbody>
<tr>
<td><strong>Year</strong></td>
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<td>Sophomore (variant 1)</td>
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<td>Sophomore (variant 2)</td>
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<td>Junior</td>
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- Two sections of CHE 395: Special Topics will be offered – 1) Quantum Mechanics and Path Integrals, MW 4-5:20pm. 2) Biotechnology and Global Health, MWF 11-11:50am.

- Minor in Biotechnology and Biochemical Engineering provides training for students interested in the pharmaceuticals, biomaterials, biofuels, and other industries using the tools of modern biology. Find out more.

- The Honors Program requires a two-quarter course sequence of independent study (Chem Eng 399) and three units of approved advanced study. If interested, contact your advisor and the Honors Program advisor (Prof. Cole).

Civil and Environmental Engineering

- BSCE students should take **CIV ENV 216** since a laboratory component is required.

- Technical electives: Under the current catalog year, only one 399 can be counted and must be from the Department of Civil and Environmental Engineering (**CIV ENV 399**). This applies to both the BSCE and BSEE programs.

- Students interested in pursuing the **BS/MS option** with a MS portion being in the Department of Civil and Environmental Engineering need to follow the procedures presented on the Departmental website.
An undergraduate minor in Environmental Engineering has been established to enable engineering students to incorporate aspects of this discipline in their respective fields of studies. Learn more.

Computer Engineering

- "EECS 203 Introduction to Computer Engineering" has been recently rebuilt from the ground up to focus on understanding how the hardware and software components in real computer systems interact. The course features a new set of exciting, interactive laboratory projects.

- Professor Hai Zhou will teach a new special topics course "EECS395/495: The Art of Multicore Concurrent Programming" in Spring 2013.

  Course Description:
  You will not get the automatic speedup for your software when you upgrade to a new computer, since the frequency scaling is virtually stopped, and you only get more cores on new machines. For speed, you have to do concurrent programming for multicores. This course will teach you how to do it effectively. We will start with synchronization primitives, mutual exclusion, and consensus, and talk about different programming models such as multi-threading, locking, and transactional memory. We will also discuss how to debug and check concurrent programs, which may give your different behaviors for different executions.

Computer Science

- EECS 101 is an introduction to computer science designed to demonstrate a broad swath of CS (unlike a conventional introductory course, which focuses on teaching programming)

- EECS 111 is our first course in the major (and minor) -- it has no overlap with AP CS and cannot be placed out of.

- EECS 368 is a new course on programming massively parallel systems with CUDA

Electrical Engineering

- EECS 310 Mathematical Foundations of Computer Science and EECS 311 Data Structures and Data Management will be renumbered as EECS 212 and 214, respectively starting next fall.

- All EE majors are required to take a “capstone” Electrical Engineering Design course during their senior year. In the fall, this can fulfilled by taking a EECS 399 design project. For a 399 project to count it must be taken when a student has senior standing and the student must file a form signed by the advisor that states that this is a suitable design project. Forms can be found in the EECS Undergraduate Study manual

Industrial Engineering

- Members of the Northwestern Student IIE chapter will be available for peer advising this quarter in C122. Please see information posted in C122 for more details.
Industrial Cont’d

- The time for **IEMS 303** has been changed. In **Fall 2013** the course will be offered **TTh 3:30-4:50**.
- Note that **IEMS 326** will not be offered in fall quarter.
- Waitlist requests for IEMS courses are handled directly by the department. To submit a waitlist request, visit [https://sites.google.com/a/u.northwestern.edu/iems-undergraduate-program/home/waitlist-policy](https://sites.google.com/a/u.northwestern.edu/iems-undergraduate-program/home/waitlist-policy) and take care to read all of the instructions posted there. You may not submit a waitlist before your registration appointment time has arrived. **If a class indicates “Department Consent Required,” then the course is available only through waitlist, even if seats appear to be empty.** Note that adding yourself to a waitlist in Caesar will not put you on the course waitlist in the department.

Manufacturing and Design Engineering

- Many of the MaDE/Segal courses have updated course numbers and titles. Please consult the matrix below as you register for the fall quarter.

<table>
<thead>
<tr>
<th>New Course Number and Title</th>
<th>Previous Course Number and Title</th>
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<tbody>
<tr>
<td>DSGN 220: Intro to Design Sketching</td>
<td>DSGN 297 - Sketching Techniques for Engineers, Basic</td>
</tr>
<tr>
<td>DSGN 240: Intro to Solid Modeling</td>
<td>DSGN 297 – Intro to Solid Modeling (Solidworks)</td>
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<td>(Solidworks)</td>
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<tr>
<td>DSGN 245, 246: CAD(^1) (NX)</td>
<td>DSGN 245 – 1, 2 – CAD (NX)</td>
</tr>
<tr>
<td>DSGN 253: Managing Student Run</td>
<td>DSGN 295: Managing Student Run Projects</td>
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<tr>
<td>Projects</td>
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<tr>
<td>DSGN 320: Intro to Industrial Design</td>
<td>DSGN 307: Intro to Industrial Design Methods</td>
</tr>
<tr>
<td>Methods</td>
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</tr>
<tr>
<td>DSGN 345: CAM(^2) (NX)</td>
<td>DSGN 397: CAM</td>
</tr>
</tbody>
</table>

\(^1\)CAD = Computer Aided Design. \(^2\)CAM = Computer Aided Manufacturing.

- IEMS 201 will be offered in the fall and cross-listed within Segal as DSGN 295 – Data Driven Decision Making.
- Fall quarter offers two options for students interested in CAD courses: 1) DSGN 240: Introduction to Solid Modeling (Solidworks); 2) DSGN 245, 246: Intro to Computer Aided Design (NX), Computer Aided Design (NX). This is the only quarter that an introduction to Solidworks is offered. NX is offered both in the Fall and the Winter. Each of the three courses comprises ½ credit.
- If you do not get a seat in DSGN 308 please put your name on the wait list. Students will be chosen from this list as room become available. Please do not contact the instructor asking for permission to enroll.
Materials Science

- **Incoming Freshmen (class of 2017) should be aware of MatSci 190 MS&E Freshmen Seminar**, a hands-on lab class that offers instruction in theory and use of scanning electron microscopes. A great class for prospective MSE majors or students who are undecided about their major.

- Rising MSE sophomores should take MatSci 301 Materials Science Principles (if they haven’t yet; pre-req Chem 102) and MatSci 314 Thermodynamics of Materials (pre-req Chem 103)

- Rising MSE juniors typically take core classes MatSci 316-2 Microstructural Dynamics and 332 Mechanical Behavior of Solids; some juniors may take MatSci 391 Process Design.

- MatSci technical electives Fall 2013:
  - MatSci 341 Intro to Modern Ceramics (pre-req 316-1&2 or consent of instructor),
  - MatSci 360 Intro to Electron Microscopy(pre-reqs MatSci 301 & Phys 135-2,3),
  - MatSci 380 Intro to Surface Science and Spectroscopy (pre-req MatSci 351-1 or equivalent).
  - Details are found [here](#).

- Seniors may plan to take 396-1 senior project beginning in fall or winter.

- **The Materials Science and Engineering Departmental Honors Program** – Students may apply to this program after their sophomore year. At the time of application, the student’s cumulative GPA must be 3.50 or higher and the 3.50 must be maintained until graduation. Students must register for a quarter of **MatSci 394 Honors Project** prior to 396-1 and 396-2 Senior Project. If you are a junior and plan to pursue the Honors Program, you should discuss this with your academic and research advisors and you should sign up this quarter. The following [form must](#) be turned in to the Tech Registrar.

- **Student Awards** – the deadline for awards to NU MSE seniors, juniors and sophomores is May 1
  - Review eligibility and application requirements [here](#)

Mechanical Engineering

- New course: **ME/ChBE 395: Quantitative Methods in Life Cycle Analysis** for students interested in quantitative techniques for assessing the sustainability of technology systems from multiple environmental perspectives (e.g., energy use, air and water pollution, resource depletion, climate change, and water use) and in applying these techniques to enable greener designs, manufacturing systems, and public policies. **Students typically take this class in their junior or senior years. TTh 2:00-3:20pm.** Prerequisites: ME 220/ CHEM ENG 211 (Thermodynamics); Gen Eng 205 1, 2, 3, and 4 (Engineering Analysis) Visit [website](#) for more info.

- **Sophomores** should plan to attend one of two group advising sessions to meet their faculty advisor, learn about ME coursework, select courses, and get study plans signed. [Sign up](#) for a group meeting.

- To assist in determining what classes are taught in a given quarter, most departments have yearly course planners similar to ME's posted [online](#)
**Summer Music Course**

*Gen Music 175: Recording Techniques*

*Counts as FAL towards theme requirement*

In this class, students will:

- Look in detail at microphone design and placement techniques, covering stereo miking; close and distant miking of instruments and ensembles; and “source” recording for sound design applications
- Learn how to choose the right microphone for the instrument or voice and how details of mic placement affect the sound quality, often dramatically
- Cover hardware and effects processing associated with the production process
- Experience in-class recording and miking demonstrations
- Make recordings using the techniques covered in class. Music background welcome but not required.

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**Fall Leadership Course**

*LDRSHP 204 – Paradigms & Strategies of Leadership*

Tu: 6-9pm

*Counts as SBS towards theme requirement*

This course introduces you to the requirements for effective leadership:

- How to ask powerful questions
- How to inspire others
- How to mobilize difference to maximize team performance
- How to know your strengths and play to them
- How to lead change
- How to leverage adversity and failure

Students will meet speakers who are at the top of their field and experience leadership first hand through weekly workshops and by working with community organizations

Last year’s presenters included: Tom Ricketts, owner of the Chicago Cubs, Martha Lavey, Artistic Director of Steppenwolf Theater, Caleb King, M.D./PhD and MORE!

After completing the course, you have the option of going on to earn Northwestern’s Leadership Certificate by enrolling in the Undergraduate Leadership Program. McCormick students who complete the certificate can count it as a leadership theme toward fulfillment of their graduation requirements.

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Explore, Engage, Transform