

Some Experiences with Co-op Educational Outcome Assessment and Advisory Boards

Brian W. Randolph



UT Engineering Facts & Figures

- **Six Departments**
 - Bioengineering
 - Chemical and Environmental Engineering
 - Civil Engineering
 - Electrical Engineering and Computer Science
 - Engineering Technology
 - Mechanical, Industrial and Manufacturing Engineering
- **22 Academic Degree Programs**
 - 12 Bachelors, 8 Masters, & 2 PhD degrees



UT Engineering Co-op Program

- **Mandatory co-op program for BS in Engineering students (~2300) with intensive career guidance and integrated professional development. Optional for BS in Engineering Technology students (~1100).**
- **Minimum 1 year of full-time co-op work experience required to graduate.**
- **Work begins in sophomore year and alternates with class semesters.**



Cooperative Experience Plans

Plan A				Plan B			
	Fall	Spring	Summer		Fall	Spring	Summer
Year 1	Course Work	Course Work		Year 1	Course Work	Course Work	
Year 2	Course Work	Coop Exp.	Course Work	Year 2	Course Work	Course Work	Coop Exp.
Year 3	Coop Exp.	Course Work	Coop Exp.	Year 3	Course Work	Coop Exp.	Course Work
Year 4	Course Work	Coop Exp.	Course Work	Year 4	Coop Exp.	Course Work	Coop Exp.
Year 5	Course Work			Year 5	Course Work		

College-based Career Development Center identifies and cultivates placement opportunities for our students.



Engineering Career Development Center

- Eight person staff, plus student workers.
- All professional staff have corporate HR experience. Most have degrees in educ.
- Students divided by majors. Employers served by staff 'account managers.'
- Staff co-teach Professional Development courses with department faculty.
- Largely self funded through course fee.



Placement Outcomes

	2011	2012	2013	2014	2015
Spring	354	352	386	399	417
Summer	502	591	605	586	611
Fall	324	338	344	363	TBD
Annual	1180	1281	1335	1348	~1400



Employment Services vs. Professional Development Process?

Prior to co-op interviews, students complete employer-identified 'marketable skills' coursework and a discipline-specific course in professional development that teaches communication skills, professional conduct, ethics and employer expectations. Employer participation is integral to the course.



Framework for Outcome Assessment

- Consider a broad view regarding assessment: student outcomes, employer needs, institutional goals, political capital, program sustainability, recruiting, benefactor relations, etc.
- Identify key metrics that impact accreditation, program services, funding decisions and/or strategic goals.
- Spread out modes of assessment to reduce 'survey fatigue' and match the granularity needed.
- Store and distribute data in forms that support review, analysis and action.
- Assess the assessment to streamline future processes.



Data Storage and Retrieval

- UT utilizes CSO Research Interfase™ software to manage resumes, student information, employer information, placements and salaries.
- Reports can be designed and run to provide Excel sheets for a variety of users.
- Every CDC employee is trained to use the database.
- On-line evaluations now via Qualtrics.



Employer Evaluation Interface

The College of Engineering

ENGINEERING LINKS

- College of Engineering
- Career Development Center
- Surveys Index

CONTACT US

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GET DIRECTIONS



Employer Evaluation

Student Information:

Student First Name:

Student Last Name:

Student's Major:

Co-Op Information:

Semester of Co-Op: (i.e. "Spring 2012")

Start Date (i.e. 2012-01-01): Today |

End Date (i.e. 2012-05-01):

Supervisor (Evaluator) Name:

Supervisor Title:

Supervisor Email:

Company Name:

Street Address:

City:

State:

Zip Code:

Qualitative Analysis:

Describe major accomplishments and contributions of the student:

What is your overall evaluation of the work done by the student? Note any major strengths and weaknesses.

The College of Engineering

Was the student academically prepared for his/her position? Please explain.

Quantitative Analysis:

The student demonstrated:

- An ability to apply mathematics, science, and/or engineering.
- An ability to design experiments.
- An ability to conduct experiments.
- An ability to analyze and interpret data.
- An ability to design a system, component or process to meet a desired need.
- An ability to function on a multi-disciplinary team.
- An ability to identify engineering problems.
- An ability to formulate engineering problems.
- An ability to solve engineering problems.
- An understanding of professional and ethical responsibilities.
- An ability to communicate with others effectively.
- An understanding of how his/her work and the company impact society.
- An understanding of the need to learn more than just what they learned in school.
- An awareness of how current events affect the company.
- The ability to use modern engineering tools (computers/software, etc.).

Future Employment:

Is the student returning to work at your company?

Comments:

Do you plan to hire other UT co-op and/or graduates in the future?

Have you or do you intend to discuss this evaluation with the co-op student?



Employer Evaluation Interface

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ENGINEERING LINKS
College of Engineering
Career Development
Surveys Index

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GET DIRECTION

Was the student academically prepared for his/her position? Please explain.

Quantitative Analysis:

The student demonstrated:

An ability to apply mathematics, science, and/or engineering.	-----
An ability to design experiments.	-----
An ability to conduct experiments.	-----
An ability to analyze and interpret data.	-----
An ability to design a system, component or process to meet a desired need.	-----
An ability to function on a multi-disciplinary team.	-----
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The ability to use modern engineering tools (computers/software, etc.).	-----



Student Evaluation Interface



THE UNIVERSITY OF TOLEDO

Student Evaluation

Student Information

First Name

Last Name

Rocket ID (R Number)

Student's Major

- Bioengineering
- Chemical Engineering
- Civil Engineering
- Computer Science and Engineering
- Electrical Engineering
- Mechanical Engineering
- Computer Science and Engineering Technology
- Information Technology
- Construction Engineering Technology
- Electrical Engineering Technology
- Mechanical Engineering Technology
- Dual Major (please specify)

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Survey Powered By [Qualtrics](#)

College of Engineering



Employer Feedback and Advisory Boards

- Consider direct and indirect collection of employer feedback.
- Build from existing programmatic committees and boards at multiple levels.
- Consider every employer interaction an opportunity to educate about co-op.
- Collect evidence of implemented feedback and share it with employers.



Engineering Corporate Partners Program

A dialog at the executive level to identify win-win linkages between corporations, our students & graduates, faculty and programs.

A venue to redefine engineering education that supports operational level corporate needs such as *technical preparation, diversity, communication skills, project management, leadership, etc.*





UT Engineering National Visiting Advisory Board

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- Case Western Reserve University
- Northeastern University
- University of California Los Angeles
- University of Maryland
- The University of Toledo

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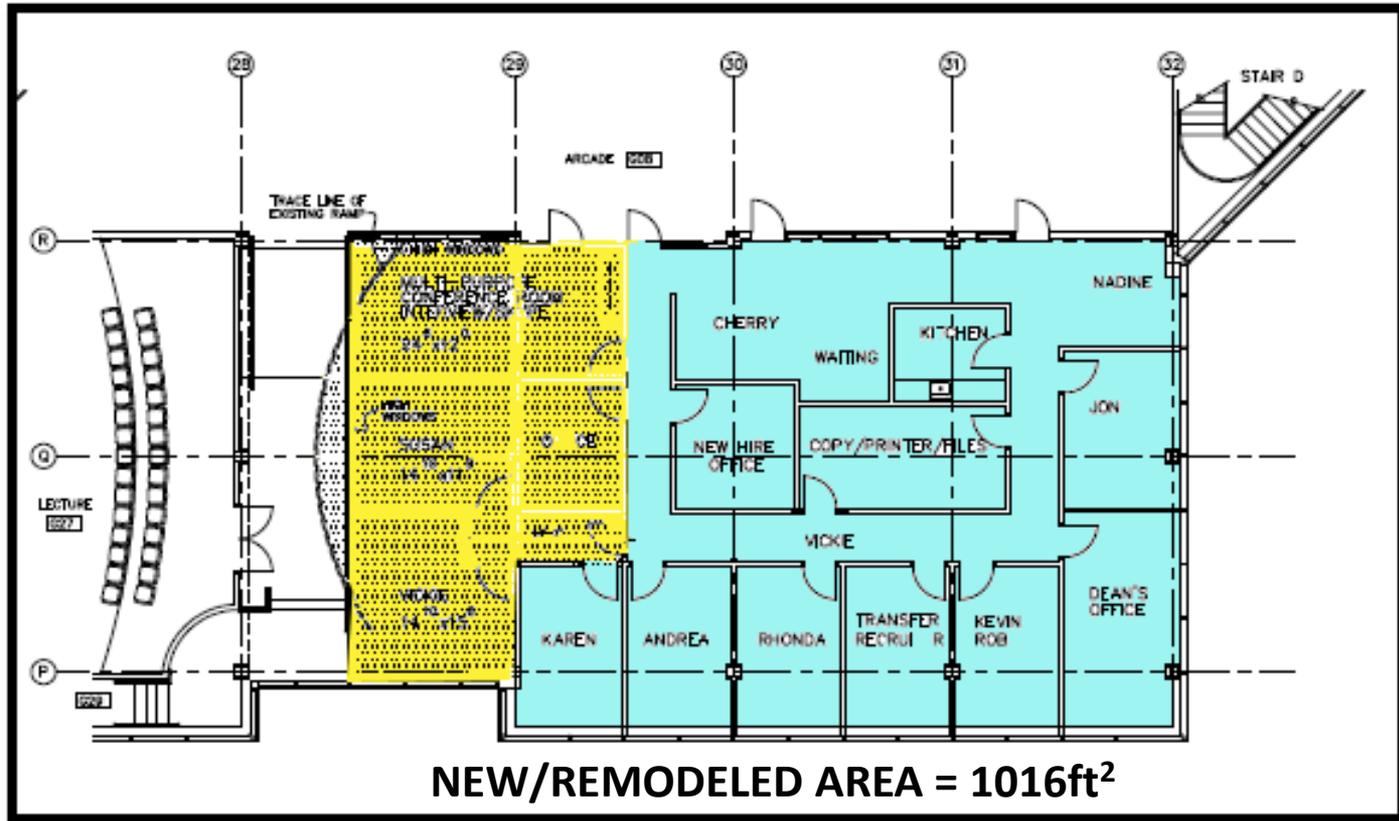
- NASA Glenn Research Center

Contributors to Program Sustainability

- Fee-based co-op registrations with designated account for Career Development Center.
- Increased placement volume has required hiring an additional Assistant Director and clerk in late 2014.
- Capital investments to expand the Engineering Career Development Center.
- Fall and spring career fairs with significant growth in attendance and placements.
- Curricular moves to require co-op in additional programs.



Engineering Career Development Center Expansion



1st Floor Nitschke Hall



Engineering Career Expo



Engineering Career Development Center hosts two Career Expo's each year.



138 companies participated in the Spring 2015 Career Expo.



669 engineering students and alumni participated.



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**Please visit our Career Development Center
website at www.eng.utoledo.edu/coop/**

