

EUROTECH - PREPARING ENGINEERING STUDENTS FOR INTERNATIONAL CO-OPS IN GERMANY AND BEYOND

Brian Schwarz – Co-Director –Eurotech
Director of Experiential Engineering Education Initiatives

<http://eurotech.engr.uconn.edu>
bwgermany.uconn.edu

Eurotech Program history

- Starting in 1993 by Engineering and German Studies faculty members
- Utilizing the Baden Württemberg Exchange agreement that was signed in 1989
- Students receive a degree in Engineering and German

Eurotech Program overview

- Eurotech is a 5 year dual-degree program that leads to a BA in German and BSE in one of 12 engineering fields.
- Currently have around 120 students in program
- Eurotech program includes a five or six -month internship in Germany from March – July or August

Eurotech Program structure

- Two Co-Directors – One from Engineering - Brian Schwarz and one from German Studies – Friedemann Weidauer
- Eurotech Faculty Advisors
 - Sebastian Wogenstein – German Studies Advisor
 - Engineering Advisor in most disciplines
 - Mechanical Engineering – Ugur Pasaogullari (most popular major)
 - Chemical Engineering – Daniel Burkey (second most popular major)
 - Materials Science & Engineering – Rainer Hebert (third most popular major)
 - Civil & Environmental Engineering – John Ivan or Maria Chrysochoou
 - Biomedical Engineering – Lisa Ephraim
 - Electrical & Computer Engineering – John Chandy
 - Computer Science & Engineering – vacant

Eurotech Program structure cont.

- German Studies hires a Eurotech Graduate Student
 - Teach 3 – 1 credit seminar courses – two in fall and one in spring each year
 - German 3220 (fall) – Gearing towards Intermediate German speaking students – utilize “Rollercoasters” as the medium to learn German technical engineering terms
 - German 3221 (spring) - Introduction to Science terms in German including Engineering, Math, Physics and Chemistry and also develop a German Resume
 - German 3222 (fall) – Fields of Technology – special topics in engineering sometimes includes nanotechnology, energy, infrastructure, etc.
- German Capstone course
 - Polish German Language skills
 - Mentorship of younger Eurotech students
 - Final Project related to Co-op Experience in Germany

Eurotech Program structure cont.

- Eurotech Program - Living Learning Community – Friedemann is the current Director – started it in 2008
 - We have approx. 40 residents from freshmen through junior year
 - We have a Floor Mentor and a Residence Assistant
 - Students will have a 1 credit seminar in first semester
- Eurotech Club is a student run organization – Friedemann is the current advisor for the club and Brian is responsible for the finances for the club

Baden Württemberg Exchange Program

- Baden Württemberg Exchange is a “State to State” agreement that includes other universities including Yale University, CCSU, Connecticut College, SCSU, Trinity, University of Hartford, Wesleyan
- The BW Exchange program has moved to UConn under Education Abroad office
- Eurotech program utilizes the BW Exchange program to send our students to Germany for one full – year (10-20 each year)
- First semester – fall of 3rd or 4th year – take courses at one of several universities in Baden Württemberg to complete German requirements (few students will take engineering courses)
 - Uni Stuttgart, Heidelberg, Freiburg, Tuebingen, Konstanz, Mannheim, etc.

Co-op successes

Eurotech students have secured co-ops at the following organizations over the last several years:

- Bosch
- Mahle
- Daimler - Mercedes-Benz
- Porsche
- Audi
- BMW
- HLRS - Stuttgart
- Merck
- Siemens
- Fraunhofer (Freiberg, Dresden, Stuttgart)
- MTU Aerospace
- Max Planck Institute
- Trumpf
- Karl Storz
- IBM
- Boehringer-Ingelheim
- And many more

Co-op Challenges

- After discussing with several company representatives in Germany, students need to apply in November to these organizations utilizing the companies websites and contact leads from BW Exchange
- If students wait until December, they will most likely not hear back until February or later. This will delay the start date or overall experience.
- Changes to the German University system (Bologna Structure) and recent changes to the minimum wage have made it more challenging for Eurotech students to secure internships in Germany

German University Changes

- Bologna Structure – splitting the former “Diplom” into Bachelor’s degree and Master’s degree
- Before the split, companies were required to provide internships to “Diplom” students as part of an integrated academic requirement for students to graduate with the “Diplom” , so placing interns was basically on “auto-pilot” and not as challenging
- After the split, it became increasingly more complicated for students to get co-ops as companies were no longer required to provide co-ops under German law

German minimum wage changes

- January 1st 2015: the new minimum wage of 8,50 EUR/hour took effect (meaning a 40 hour work week, employees should earn 1.473,00 EUR/month before taxes)
- Affected: part-time and full-time employees, most co-ops and mini-jobs
- In order to pay students less (500 to 1000 EUR), companies require that the co-op is mandatory (“Pflichtpraktikum”) by the university regulations, official forms of letters and certificates are requested (containing the duration of the students’ co-ops, etc.), otherwise students have to accept a voluntary, unpaid internship (“freiwilliges Praktikum”)

Solutions to challenges I

Integration of internship preparation into the curriculum from the first to the last semester

1. Univ 1810 (First Semester Learning Community): first round of (English) resume and cover letter as part of the Career Center's "Certificate of Professional Development," establish LinkedIn profile, "connect" to current and former Eurotech students as part of the LinkedIn Eurotech Group, explore internship portals of German companies in CT
2. Second semester: Company visits, applications for summer internships in the US
3. 2nd Year 1 credit modular courses: First round of German resume and cover letter, mock interviews, shadowing current German co-ops by virtual/digital means, further explore generic and company specific opportunity portals, mock applications to posted positions
4. 3rd Year Language Sequence: language and culture preparation for the year abroad

Solutions to challenges II

Integration of co-op preparation into the curriculum from the first to the last semester

5. Pre-departure summer workshop for outgoing students
6. Application workshop in Germany in November for spring internships: mock interviews, application materials updated by industry representatives and local university's career services
7. Bi-weekly email follow-ups on application process; offer help where necessary (pursue existing contacts etc.)
8. Fifth Year Capstone course: Upon their return, students file their co-op reports and mentor the lower level students

Solutions to challenges III

Establish reliable resources:

1. Gather and file HR and Supervisor contact information from current students (as part of their co-op reports)
2. Advisory Board of local companies operating on both sides of the Atlantic
3. Include local IHK and Chambers of Commerce
4. Encourage contacts between German company and American subsidiary HR departments
5. Site visits to the companies where the students work
6. Track alumni/ae employment as possible resources (LinkedIn Group)

Solutions to challenges IV

New On-line courses added:

- In Fall 2017, one of our German faculty members offered a 3 credit on-line course for all Eurotech students in Germany.
- This course helped students with the transition to Germany.
- This course helped them with final course selection during the first semester in Germany.
- This course helped them perfect their German documents to apply for co-op positions in Germany and apply on-time.
- In Spring 2018, a follow on on-line course is being taught to evaluate the application process as well as facilitate the reports required during the co-op.

Conclusion of Eurotech

- Eurotech prepares students for the global workforce and improves their intercultural communication and soft skills to compete in tomorrow's world
- Students get in-depth language and cultural exposure during the first semester and real time hands-on experiences in the workforce, as they apply for real co-op openings (no pre-arranged contracts where students risk being under-challenged “making coffee”, etc.)
- After meeting excellent role models during their co-op experience, most students consider graduate school (in the US or Germany) after they return and graduate in the US in order to advance in their field
- Over all, it's a win-win for the universities (engineering departments & humanities) and companies/research institutes

Beyond Eurotech

- In 2015, we launched the Engineering Spanish Program (ESP) in Valencia, Spain at Polytechnic University of Valencia (UPV)
 - 1st participant went in 2016-2017 school year. She is a Biomedical Engineering major and her internship experience (unpaid) was with a BioMechanical Institute at UPV. After this experience, she has applied to graduate school.
- In 2017, we launched the AsiaTech program in Shanghai, China at Shanghai University and will be changing over to Shanghai Jiao Tong University in Fall 2019.
- In 2018, we are launching the Technopole France program in Toulouse, France with University of Toulouse. We are guaranteed to co-op positions at Airbus for next year. We will be sending our first participant in Fall 2018.

Beyond Eurotech

- Now that we have 4 programs, we will be creating an International Engineering Program.
- Our goal is to have between 450 – 500 students enrolled in these dual degree programs by 2025.
- The International Engineering Program will be getting its own website and tri-fold brochure for high school mailings. Soon to be launched <http://internationalengineering.uconn.edu>
- Admissions is adding the option to the application for incoming freshmen.
- Our goal is to create this as a destination program for global engineers.

Appendix

- Common databases we refer students to in order to find open internships (specifically in Baden-Wuerttemberg):
- <http://www.backinjob.de/praktikum/praktikumsstellen-Baden+W%FCrttemberg/praktikum-Baden+W%FCrttemberg>
- <http://de.indeed.com/Jobs?q=Praktikum&l=Baden-W%C3%BCrttemberg>
- <http://www.meinpraktikum.de/praktikum/in/stuttgart>
- http://www.kimeta.de/kiSearch_Guest.aspx?q=Jobs+Praktikum+%20Baden-Wuerttemberg&Umkreis=-1