Dual BSME Degree Program

Virginia Tech students have the opportunity to complete their BSME senior year at the Technische Universität Darmstadt (TUD) in Germany. At the completion of this program, a student that selects the appropriate electives will also simultaneously earn a Bachelor of Science in Mechanical & Process Engineering from TUD.

Factoids:
- German government financial aid carries over to TUD. In addition, the VT students at TUD pay VT tuition.
- German skills up to the required proficiency level in a senior year.
- GER 1105 can be completed during the academic year.
- The engineering courses at TUD are taught in German.
- Completion of this program, a student must earn a “B” in German. Hence, if you cannot keep up with the VT-TUD dual BSME degree requirements, or if you want to pursue other elective courses, then you automatically are considered to be in the VT BSME senior year abroad program.
- Just imagine how marketable you would be, in this global economy, with an engineering degree from both a US and German university!

APPLICATION DEADLINES:

The entrance requirements and application process are the same as for the dual BSME degree program, but there are less course requirements at TUD since you are only transferring course credits back to VT towards your VT BSME degree: You will not be earning a TUD degree. Hence, if you cannot keep up with the VT-TUD dual BSME degree requirements, or if you want to pursue other elective courses, then you automatically are considered to be in the VT BSME senior year abroad program.

Application of Interest
- Joint programs between Virginia Tech and the Technische Universität Darmstadt:
  - http://www.tud.vt.edu/
  - Technische Universität Darmstadt:
    - http://www.tu-darmstadt.de/

Points of Contact:
- Prof. Jan Helge Bahn, Ph.D.
  - 114-H Randolph Hall
  - Mechanical Engineering (0238)
  - Virginia Tech, Blacksburg 24061
  - Tel: 540-231-3276
  - E-mail: bohn@vt.edu
- Prof. Dr.-Ing. Manfred J. Hampe
  - Technische Universität Darmstadt
  - E-mail: hampe@tvt.tu-darmstadt.de

Website of Interest
- http://www.oired.vt.edu/
- http://www.educationabroad.vt.edu

Senior Year Abroad Program

Technische Universität Darmstadt

TUD graduates approximately 220 BSME, 200 MSME, and 65 Dr.-Ing. ME students per year.

Darmstadt is a city of about 150,000, and it is located about 20 minutes south of Frankfurt airport.

TUD student achievements:
- 2010 RoboCup champions
- 2009 Decathlon champions

Other student activities:
- Formula SAE team (DART)
- The BSME dual degree program was developed with partial support from a $672,600 grant from the Fund for the Improvement of Postsecondary Education (FIPSE) in the US Dept of Education (P116J06-0015).

Ultimate Global Engineer Program

The VT-TUD dual BSME degree program is fully compatible with the Ultimate Global Engineer Program: Sophomore fall semester abroad at one partner university (e.g., Australia), followed by rising junior summer abroad at a second partner university (e.g., China), followed by the dual BSME degree program at TUD in Germany.

Technische Universität Darmstadt

TUD students will have the opportunity to participate in the DAAD (DAAD) provides approximately 8,164 scholarships based on academic merit.

VT BSME Senior Year Abroad Dual BSME Degree Program

Ultimate Global Engineer

Office of International Research, Education, and Development

International Affairs Offices
Pack Building (0378)
Blacksburg, VA 24061
Fax: 540-231-5164
Tel: 540-231-5888
Fax: 540-231-6741
E-mail: vtabroad@vt.edu

http://www.oired.vt.edu/
http://www.educationabroad.vt.edu

Germany

VT BSME Senior Year Abroad Dual BSME Degree Program

Ultimate Global Engineer
VT → TUD Dual BSME degree program

Virginia Tech Bachelor of Science in Mechanical Engineering
Technische Universität Darmstadt Bachelor of Science in Mechanical & Process Engineering

Virginia Tech (VT) and the Technische Universität Darmstadt (TUD) in Germany offer a dual degree program in which a student can earn both these degrees in four years, including learning German well enough so the student can complete his or her senior year engineering courses at TUD in German. The following course schedule outlines the standard course sequence for a student that has no prior German language skills or AP credit.

Students must have a VT overall GPA ≥ 3.0 and have earned a "C" or better in all VT engineering (ECE, ENGE, ESM, ISE, ME, MSE) and natural science (CHEM, MATH, PHYS, STAT) courses.

The VT BSME program is the largest in the USA and it is ranked 13 (top 5%) in the US by USN&WR.

Freshman year, fall semester (2011):
- ENGL 1105 Freshman English I
- MATH 1205 Calculus I
- MATH 1114 Elementary Linear Algebra
- ENGE 1024 Engineering Exploration
- CHEM 1045 General Chemistry Laboratory
- CHEM 1035 General Chemistry
- AREA 6 elective (1 credit)

Freshman year, spring semester (2012):
- PHYH 2305 Foundations of Physics I
- ENGL 1106 Freshman English II
- MATH 1224 Vector Geometry
- MATH 1206 Calculus II
- ENGE 1114 Exploring Engineering Design
- AREA 2 elective (3 credits)

Summer (2011):
Available for courses, internships, employment, etc.

Sophomore year, fall semester (2012):
- PHYH 2306 Foundations of Physics II
- MATH 2224 Multivariable Calculus
- ESM 2104 Statics
- ENGE 2314 Engineering Problem Solving with C++
- ISE 2214 Manufacturing Processes Laboratory
- ME 2024 Introduction to Engineering Design & Economics

Sophomore year, spring semester (2013):
- ECE 2054 Applied Electrical Theory
- STAT 3704 Statistics for Engineering Applications
- ESM 2304 Dynamics
- ESM 2204 Mechanics of Deformable Bodies
- ME 2124 Introduction to Thermal & Fluid Engineering
- MATH 2214 Introduction to Differential Equations

Summer (2012):
Available for courses, internships, employment, etc.

Junior year, fall semester (2013):
- ECE 3254 Industrial Electronics
- ME 3514 System Dynamics
- ME 3614 Mechanical Design I
- ME 3404 Fluid Mechanics
- ME 3124 Thermodynamics
- STS 2054 Engineering Cultures – AREA 2.7

Junior year, spring semester (2014):
- ME 4005 Mechanical Engineering Laboratory I
- ME 3304 Heat & Mass Transfer
- MSE 2034 Elements of Materials Engineering
- AREA 3 elective (3 credits)
- GER 1114 Accelerated Elementary German (6 credits, Equivalent to GER 1005-1106)

Summer session at VT (May 26 – Jul 3, 2014):
- GER 2114 Accelerated Intermediate German (6 credits, Equivalent to GER 2105-2106)
  Students must earn a “B+” or better to continue at TUD.

Senior year, winter semester (2014-2015) 28 CP:
1. Strukturdynamik (6 CP) (ME 3504 Vibrations)
2. Systemtheorie und Regelungstechnik (6 CP) (ME 4504 Controls)
3. Fluids Engineering Laboratory (4 CP) (ME 4006 ME Lab II, ViEWS)
4. Aerodynamik I (8CP) Grundlagen der Flugantriebe (8CP) (ME 4124 Fluid Heat Transfer Design (2CP); VT BSME technical elective (4-8CP))
5. VT/TUD BSME technical electives (4-6 CP)

Senior year, summer semester (2015) 34 CP:
2. Numerische Mathematik (4 CP)
3. Numerische Berechnungsverfahren (4 CP)
4. Grundlagen der Turbomaschinen und Fluidsysteme (ME 4006 ME Lab II (2CP); ME 4124 Fluid Heat Transfer Design (4CP); VT BSME technical elective (2CP))
5. AREA 3 elective (6 CP)

Anticipated VT graduation date: August 2015

TUD requirements:
- Must earn at least 60 CP at TUD (any department)
- The "VT/TUD BSME technical electives" is a list of electives that are approved both at VT and TUD

Special notes:
- Electives are shown in yellow highlight.
- Students that do not take GER 2xx/3xx at VT or TUD must add 1 semester credit hour (2 CP) of VT technical electives.
- Students may drop out of the dual BSME program at any time prior to the Fall semester of their Senior year and stay on at VT without delaying their VT BSME graduation.

For more information:
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Revised: June 6, 2012 by Prof. M.J. Hampe (TUD) and Prof. J.H. Bohn (VT)