

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.

Just imagine how marketable you would be, in this global economy, with an engineering degree from both a US and German university!

The engineering courses at TUD are taught in German. Hence, to participate in this program, a student must earn a "B+" in GER 2106 prior to leaving for TUD. GER 1105-1106 and 2105-2106 can be completed during the academic year, or during the summer prior to the senior year. Once at TUD, the VT students enroll in a six-week intensive German course to bring their German skills up to the required proficiency level.

VT students at TUD pay VT tuition and fees, and VT financial aid carries over to TUD. In addition, the German government (DAAD) provides approximate \$10,200 scholarships based on academic merit.

APPLICATION DEADLINES:

DAAD scholarship: January 31, 2009
for 2009-2010 senior year.

TUD admission: January 15, 2009
for 2009-2010 senior year.

Factoids:

- Germany has the world's largest export economy, most of which is high-tech engineering products.
- The USA is Germany's #1 trading partner.
- The TUD BSME program is ranked #1 in Germany, Switzerland, and Austria.



ATLANTIS



The ATLANTIS program provides an exciting extension to the VT→TUD dual BSME degree program: Spend the summer between sophomore and junior year at the Royal Institute of Technology (KTH) in Stockholm, Sweden, and participate in undergraduate research and receive an introduction to the Swedish language and culture!

KTH is the largest engineering university in Sweden.

Class of 2010 and 2011:

Up to 15 students in the ATLANTIS program will receive \$1,200/month in travel allowance while at KTH and TUD, up to \$18,000/person. This allowance is in addition to any VT financial aid package.

Application deadline: January 15, 2009
for summer 2009 and 2010-2011 senior year.



TUD graduates approximately 220 BSME, 200 MSME, and 55 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:
2008 RoboCup champions
2007 Decathlon champions

Other student activities:
Formula SAE team



The US participants in the ATLANTIS program are funded via a \$672,600 grant from the Fund for the Improvement of Postsecondary Education (FIPSE) in the US Dept of Education (P116J06-0015).



Websites 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/>

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Germany

VT BSME Senior Year Abroad Dual BSME Degree Program ATLANTIS Program



TECHNISCHE
UNIVERSITÄT
DARMSTADT

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.

ATLANTIS: For the Class of 2009, 2010, and 2011, we have available up to 15 travel supplements for students in this dual BSME degree program that also earn at least 10 semester credit hours at the Royal Institute of Technology (KTH). The travel supplement is \$1,200/month while the student is at KTH and TUD, for a total of up to \$18,000. This supplement is in addition to Virginia Tech financial aid, which continues while the student is at KTH and TUD.



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 (2007):

- 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 (1 credit)**

Freshman year, spring semester (2008):

- PHYS 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 (3 credits)**

Summer (2008):

Available for courses, internships, employment, etc.

Sophomore year, fall semester (2008):

- PHYS 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 (2009):

- ECE 3054 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 (2009):

OPTIONAL - ATLANTIS: Earn 10 credits at KTH, Sweden. Study beginning Swedish and perform undergraduate research.

Junior year, fall semester (2009):

- 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 (2010):

- ME 4005 Mechanical Engineering Laboratory I
- ME 3304 Heat & Mass Transfer
- MSE 2034 Elements of Materials Engineering
- **AREA 3 (3 credits)**
- **AREA 3 (3 credits)**

Summer I session at VT (May 24 – Jul 3, 2010):

- GER 1114 Accelerated Elementary German
(6 credits, Equivalent to GER 1105-1106)

Summer II session at VT (Jul 6 – Aug 14, 2010):

- GER 2984 Intensive Intermediate German
(6 credits, Equivalent to GER 2105-2106)
Students must earn a "B+" or better to continue at TUD.



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The TUD BSME program is ranked #1 in Germany, Switzerland, and Austria by DAAD / CHE / Die Zeit.

Early-Fall session at TUD

(approximately August 16 – October 1, 2010):

German as a Second Language (Course 4) Level B2/C1 (UNICert III). Students entering TUD must master German at the UNICert III level:

<http://rcswww.urz.tu-dresden.de/~unicert/e/>

Senior year, winter semester (2010-2011):

1. Strukturmechanik
(ME 3504 Vibrations)
2. Systemtheorie und Regelungstechnik
(ME 4504 Controls)
3. Fluids Engineering Laboratory
(ME 4006 ME Lab II; VIEWS)
4. Aerodynamik I (6CP) or Grundlagen der Flugantriebe (8CP)
(ME 4124 Fluid Heat Transfer Design (2CP); VT BSME technical elective (4-6CP))
5. **VT/TUD BSME technical electives (4-6 CP)**

Senior year, summer semester (2011):

1. Bachelor-Thesis
(ME 4015-4016 Engineering Design & Project I, II; VIEWS)
2. Numerische Mathematik
3. Numerische Berechnungsverfahren
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. **Free electives (4CP)**

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 2106 at VT must replace the TUD free electives with VT/TUD technical electives.
- Students may drop out of the dual BSME program at any time prior to the Fall semester of the Senior year and stay on at VT without delaying their VT BSME graduation.
- Students may rearrange their schedule to complete GER 1105, 1106, 2105, and 2106 at any time prior to heading for TUD in the Fall of their senior year.

For more information:

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