Call for Applications:
Baden-Württemberg Scholarship 2010/2011

The Landesstiftung Baden-Württemberg GmbH invites applications for “Baden-Württemberg Scholarships for Students” (www.bw-stipendium.de) from universities, universities of applied sciences, universities of education, and music and art academies of the State of Baden-Württemberg (Germany), as well as to universities outside Germany cooperating with Baden-Württemberg institutions. The scholarship program intends to promote the international exchange of exceptionally qualified German and foreign students. The program is available to highly qualified undergraduate, graduate and postgraduate students. The program both funds stays of foreign students at Baden-Württemberg universities, as well as stays of German students at foreign universities.

The University of Applied Sciences Ravensburg-Weingarten (URW),
Germany (www.weingarten-university.de)

invites applications by USF students for Baden-Württemberg Scholarships for stays of 5 months duration at URW. Successful applicants are highly qualified students at Bachelor, Master or PhD level. The scholarships can be used for:

- ‘Study abroad semesters’. Successful applicants enroll in URW Bachelor and/or Master courses in the fields of Electrical Engineering, Computer Science, Applied Physics (incl. Environmental Technology and Optics), Mechanical Engineering, and Technology and Business Management; a list of English taught lectures (as of 2008/9) is attached below. Please, check with your undergraduate or graduate advisors which courses can be used to substitute USF courses.
- ‘Thesis work’. A limited number of research projects are available to successful applicants. A exemplary listing of projects (for 2010) is attached.

Schedules: Winter semester 2010/11 (Oct – Feb, prep courses in September)
Summer semester 2011 (Mar – Jul)

Funding level: € 600 (~$800) per month

Application process for USF students:
Applications must be submitted to Dr. Rudy Schlaf (Electrical Engineering) via email (schlaf@usf.edu) and include the following documents:

- Statement of purpose detailing study or research plan, and planned schedule of stay.
- Curriculum vitae.
- Proof of enrolment at USF.
- Transcript of records and (for graduate students) Bachelors Degree certificate.
- Proof of English proficiency if not native English speaker.
- Two letters of recommendation.

Deadline for Applications: March 20, 2010

Dr. Schlaf will collect and forward the applications to URW by March 31st, 2009. Final award decisions will be made by the Landesstiftung Baden-Württemberg based on a shortlist assembled by URW and the review by the Central Scholarship Commission.

Landesstiftung Baden-Württemberg GmbH (www.landesstiftung-bw.de):
This state foundation established in 2000 promotes various projects of general public benefit linked by the common aim of securing the future capabilities of the State of Baden-Württemberg. Projects in the fields of education, science and research are supported in particular. Initial examples are programmes for internet and computer competence, research in the field of nutrition, food safety and consumer protection, a photonics center, financial support for vocational education, and the Baden-Württemberg Scholarship. Future and key technologies, human capital, internationalization, media competence, social learning, youth, family and civic commitment are also focal points of the work of the Landesstiftung. The Chairman of the Supervisory Board is Minister-President Günther Oettinger.
Winter Semester 2009/10 – Lectures in English Language (Attention: still to be confirmed)

hrs/week = hours per week per semester (1 hour = 45 minutes)

The red numbers refer to our LSF system (click “LSF” icon on the top right of the university’s homepage) and allow you to find detailed course descriptions.

1 Languages
All courses: 2 hrs/week, 2 credits

German for Foreign Students:
Deutsch als Fremdsprache DAF A1 - C1 (Beginners - Upper-Intermediate)
Deutsch als Fremdsprache / Technisches Deutsch

English:

Negotiating
Effective Presentations
Project Management
Finance and Accounting

Business English (Vantage – Higher)
BEC Exam Preparation – Vantage + Higher

General Technical English
Technical English: Motor Transportation
Technical English for Mechanical Engineering
Technical English for “Informatik”

English Fluency - Intermediate + Upper Intermediate + Advanced

TOEFL Exam Preparation

Other language courses on various levels:
Chinese, French, Italian, Japanese, Polish, Portuguese, Russian, Spanish

2 Intercultural Sensitisation

Intercultural Training for the USA
2 hrs/week 2 credits

Intercultural Sensitisation for the Asian Market
3 x 8 hrs 2 credits

3 Technology Management / Business Management

Intercultural Management (Hohl)
2 hrs/week  3 credits

**International Conduct of Negotiation and Moderation** (Kunkel)
2 hrs/week  2 credits

**International Management** (Philippi-Beck)
2 hrs/week  3 credits

**International Marketing** (Weber)
2 hrs/week  3 credits  **1477**

**Industrial projects in student groups** (Hohl)
2 hrs/week  3 credits

**Business Analysis and Valuation (case studies)** (Neff)
4 hrs/week  4 credits **3476**

### 4 MSc in Mechatronics

The lectures offered in the frame of this Master program are also open for advanced Bachelor students

**Basics of Electronics** (Ludescher)
4 hrs/week  5 credits **2435**

**Electrical Drives** (Paczynski)
4 hrs/week  5 credits **2233**

**Embedded Computing** (Bruemmer)
4 hrs/week  5 credits **3124**

**Engineering Mechanics** (Stetter)
6 hrs/week  7 credits **2354**

**Engineering Design and Materials** (Holbein/Niedermeier)
6 hrs/week  7 credits **2236**

**Integration of Mechatronic Systems** (Voos/Eisele)
4 hrs/week  5 credits **1397**

**Process Interface Equipment** (Altmann)
4 hrs/week  5 credits **1905**

**Process Interface Equipment, Practical training** (Altmann)
2 hrs/week  2 credits **2171**

**Programming in C, Introduction** (Sioł)
4 hrs/week  5 credits **2239**

**Simulation of Mechatronic Systems** (Wöllhaf)
4 hrs/week  5 credits **1895**

### 5 Computer Science

**Autonomous Intelligent Robots** (Ertel)
2 hrs/week 3 credits 1404

**Software-Engineering, Practical training** (Koch)
4 hrs/week 5 credits **1483**

**Modern Database Techniques** (Hulin)
4 hrs/week 5 credits (inclusive Practical Training 3232) **3219**

**Modern Database Techniques, Practical training** (Hulin)
2 hrs/week 2 credits **3232**

6 Social Work

**Welfare State Regime** (Egger de Campo)
2 hrs/week 3 credits **3788**

7 Mechanical Engineering (**Master “Produktentwicklung im Maschinenbau”**)

**Reading club in English language** (Niedermaier)
2 hrs/week 2 credits

8 Electrical Engineering and Information Technology

**Electrical Engineering 2**
4 hrs/week 4 credits

**Metrology**
2 hrs/week 2 credits

**Analysis 2 with exercises**
4 hrs/week 5 credits

**Programming**
4 hrs/week 5 credits

**Programming Lab**
4 hrs/week 5 credits

**Computer Technology Lab**
Condition: previous knowledge from the lecture “Computer Technology”
2 hrs/week 2 credits

**Network Technologies**
4 hrs/week 5 credits
Summer Semester 2010 – Lectures in English Language (to be confirmed)

hrs/week = hours per week per semester (1 hour = 45 minutes)

The red numbers refer to our LSF system (click “LSF” icon on the top right of the university’s homepage) and allow you to find detailed course descriptions.

1 Languages
All courses: 2 hrs/week, 2 credits

German for Foreign Students:
Beginners (Attention: this course starts with an intensive course from March 8-12, prior to the begin of lectures)

Intermediate
Upper intermediate
Advanced

English:
Negotiating 898

Effective Presentations

Project Management 55

General Technical English

Technical English in different areas

English Fluency - Upper Intermediate + Advanced

TOEFL Exam Preparation
TOEIC Exam Preparation

Other language courses on various levels:
Chinese, French, Italian, Japanese, Portuguese, Russian, Spanish
2 Technology Management / Business Management (Bachelor)

Intercultural management (Hohl)
2 hrs/week 3 credits

Industrial projects in student groups (Hohl)
2-3 credits

3 International Academy: Innovation Management and New Technologies (Bachelor)
For course descriptions, please see the information sheet of the International Academy

Optional Course
2 hrs/week 2 credits

Problem Solving and Decision Making/Creativity Techniques (Handschmann)
2 hrs/week 3 credits 3971

Change Management (Hohl)
2 hrs/week 3 credits 3968

Innovation Management
2 hrs/week 3 credits 4156

Technology Management and TRIZ - Theory of inventive problem solving (Thurnes)
2 hrs/week 3 credits 3970

New Technologies and New Trends (cycle of lectures)
2 hrs/week 3 credits 4474

Seminar
2 hrs/week 3 credits

Quality Management
2 hrs/week 2 credits 3967

Energy Engineering and new Energy Production
2 hrs/week 3 credits 3966

Systems Engineering and Cost Effective Analysis with Practical Training
4 hrs/week 5 credits 4475

4 Environmental Engineering
Lecture given in English upon request

Membrane Technology (Fritsch)
2 hrs/week 3 credits 860
5 Electrical Engineering and Information Technology (Bachelor)

<table>
<thead>
<tr>
<th>Course</th>
<th>Instructor</th>
<th>Hours/Week</th>
<th>Credits</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 2: Analysis 2</td>
<td>Fechter</td>
<td>4</td>
<td>5</td>
<td>4057</td>
</tr>
<tr>
<td>Electrical Engineering 2</td>
<td>Siggelkow</td>
<td>4</td>
<td>4</td>
<td>2114</td>
</tr>
<tr>
<td>Computer Networks</td>
<td>Schulter</td>
<td>4</td>
<td>5</td>
<td>1427</td>
</tr>
<tr>
<td>Metrology</td>
<td>Siggelkow</td>
<td>2</td>
<td>2</td>
<td>2117</td>
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<tr>
<td>Programming</td>
<td>Nieß</td>
<td>4</td>
<td>4</td>
<td>4341</td>
</tr>
<tr>
<td>Programming Practical Training</td>
<td>Zeller</td>
<td>4</td>
<td>5</td>
<td>1806</td>
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<tr>
<td>Computer Technology</td>
<td>Brümmer</td>
<td>4</td>
<td>5</td>
<td>3947</td>
</tr>
</tbody>
</table>

6 Mechatronics (Master)

The lectures offered in the frame of the MSc in Mechatronics program are also open for advanced Bachelor students

<table>
<thead>
<tr>
<th>Course</th>
<th>Instructor</th>
<th>Hours/Week</th>
<th>Credits</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Control</td>
<td>Voos</td>
<td>4</td>
<td>5</td>
<td>1706</td>
</tr>
<tr>
<td>Automation</td>
<td>Altmann</td>
<td>4</td>
<td>5</td>
<td>4443</td>
</tr>
<tr>
<td>Laboratory on Mechatronics/Process Interface Equipment</td>
<td>Altmann</td>
<td>2</td>
<td>3</td>
<td>2171</td>
</tr>
<tr>
<td>Laboratory on Robotics</td>
<td>Wöllhaf</td>
<td>2</td>
<td>3</td>
<td>2172</td>
</tr>
<tr>
<td>LabView</td>
<td>Georgi</td>
<td>4</td>
<td>5</td>
<td>1856</td>
</tr>
<tr>
<td>Microsystems and Materials</td>
<td>Quincke</td>
<td>5</td>
<td>6</td>
<td>2438</td>
</tr>
<tr>
<td>Power Electronics</td>
<td>Paczynski</td>
<td>4</td>
<td>5</td>
<td>4441</td>
</tr>
</tbody>
</table>
Robotics (Wöllhaf, Voos)
4 hrs/week 5 credits  3311

Traffic Information Technology (Koch)
4 hrs/week
1) Fundamentals, individual surface traffic (cars), air traffic, traffic on waterways
   2 credits
2) Rail and other public surface transport
   3 credits

7 Computer Science (Bachelor)

Autonomous Intelligent Robots (Ertel)
2 hrs/week  3 credits

Software-Engineering, Lab Course (Koch)
4 hrs/week  5 credits  1483

Modern Database Technologies, Lecture and Practical Training (Hulin)
4 hrs/week  5 credits (3 + 2)

8 Social Work (Bachelor)

Nursing English (Dayé)
2 hrs/week  2 credits  3603

English for Social Work (Dayé)
2 hrs/week  3330
### Projects at University of Applied Sciences Ravensburg-Weingarten
#### open for international exchange students
#### in Summer Semester 2010

<table>
<thead>
<tr>
<th>Professor in Charge</th>
<th>Topic</th>
<th>Short description</th>
<th>Project available for students from the following study directions</th>
<th>Student needs good knowledge in the following fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johannes Fritsch</td>
<td>Development of an laboratory experiment on Carbon dioxide absorption</td>
<td>Absorption of CO2 in water and bases, influence of pressure and temperature, process optimization</td>
<td>Chemical Engineering, Environmental Engineering, Physical Chemistry</td>
<td>Thermodynamics, Process technology</td>
</tr>
<tr>
<td>Johannes Fritsch</td>
<td>Rheology of various liquids and solutions</td>
<td>Viscosimetry, non-Newtonian fluids, Influence if ions on the viscosity</td>
<td>Chemical Engineering, Physical Chemistry</td>
<td>Basic knowledge in physical chemistry</td>
</tr>
<tr>
<td>Eberhard Hohl</td>
<td>Human Resources Management and Development</td>
<td>Recruitment, Performance Appraisal, Promotion &amp; Retraining programs (related to company projects)</td>
<td>Business Administration / Management. Technology</td>
<td>Basics in Business Administration and Organisational Psychology</td>
</tr>
<tr>
<td>Eberhard Hohl</td>
<td>International and Intercultural Management</td>
<td>Intercultural Competences, Intercultural Teamwork &amp; Negotiations (related to company projects)</td>
<td>Business Administration / Management. Technology</td>
<td>Basics in Business Administration and Organisational Psychology</td>
</tr>
<tr>
<td>Eberhard Hohl</td>
<td>Leadership, Change and Innovation Management</td>
<td>New Leadership Concepts, Innovation &amp; Change Strategies (related to company projects)</td>
<td>Business Administration / Management. Technology</td>
<td>Basics in Business Administration and Organisational Psychology</td>
</tr>
<tr>
<td>Wilfried Koch</td>
<td>Automatic time table construction using genetic algorithms. Programming</td>
<td>We work on a project automatically designing optimal time table from given demand data and economical constraints. For this project improvements and extensions have to be done.</td>
<td>Computer Science, possibly Information Technology</td>
<td>Good programming skills (C++ or Delphi) Fundamentals of SW engineering. Interest in AI and transport problems</td>
</tr>
<tr>
<td>Wilfried Koch</td>
<td>Automatic time table construction using genetic algorithms. Application test</td>
<td>We work on a project automatically designing optimal time table from given demand data and economical constraints. For this project application tests have to be done.</td>
<td>Computer Science, Economy, Civil Engineering, Industrial Engineering, Business Informatics</td>
<td>Interest in logistic transport, good logical thought</td>
</tr>
<tr>
<td>Wilfried Koch</td>
<td>Automatic Rescheduling of public Transport. Programming</td>
<td>We work on a project for automatically rescheduling of public transport in cases of delay etc. For this project improvements and extensions have to be done.</td>
<td>Computer Science, possibly Information Technology</td>
<td>Good programming skills (C++ or Delphi) Fundamentals of SW engineering. Interest in AI and transport problems</td>
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<tr>
<td>Wilfried Koch</td>
<td>Automatic Rescheduling of public Transport. Application test</td>
<td>We work on a project for automatically rescheduling of public transport in cases of delay etc. For this project application tests have to be done.</td>
<td>Computer Science, Economy, Civil Engineering, Industrial Engineering, Business Informatics</td>
<td>Interest in logistic transport, good logical thinking</td>
</tr>
<tr>
<td>Wilfried Koch</td>
<td>Multi-user interface for a rescheduling system</td>
<td>For the existing railway rescheduling system a multi-user-interface shall be implemented, so that the delay information may input to the system from different stations or from trains. (First step done)</td>
<td>Computer Science, possibly Information Technology</td>
<td>Good programming skills (C++ or Delphi) Fundamentals of SW engineering Interest in transport problems</td>
</tr>
<tr>
<td>Wilfried Koch</td>
<td>Developing a program for requirements tracing</td>
<td>Implementing a tool which checks if all given requirements are used in the implementation of a program</td>
<td>Computer Science, possibly Information Technology</td>
<td>Good programming skills (C++ or Delphi) Fundamentals of SW engineering</td>
</tr>
<tr>
<td>Wilfried Koch</td>
<td>Interfacing between Delphi and OpenOffice (basic work already done)</td>
<td>Facilitating the use of OpenOffice from Delphi and Borland C++-Builder.</td>
<td>Computer Science, possibly Information Technology</td>
<td>Good programming skills (C++ or Delphi) Component technology in C++ and Delphi Fundamentals of SW engineering</td>
</tr>
<tr>
<td>Wilfried Koch</td>
<td>Intelligent error analysis in technical processes</td>
<td>We run some projects where the goal is to detect errors in technical processes from the combination of several minor deviations.</td>
<td>Computer Science, possibly Information Technology</td>
<td>Good programming skills (C++ or Delphi) Component technology in C++ and Delphi Fundamentals of SW engineering Ability to interface with technical applications (intelligent error diagnosis) Interest in AI problems</td>
</tr>
<tr>
<td>Walter Ludescher</td>
<td>Pre-Amplifier for Logic-analyserser</td>
<td>Circuit Design</td>
<td>Electrical Engineering, Computer Science, Information Technology</td>
<td>Basics of Electronics</td>
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<tr>
<td>Name</td>
<td>Topic</td>
<td>Subject(s)</td>
<td>Additional Information</td>
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<tr>
<td>Walter Ludescher</td>
<td>Pre-Amplifier for Ultrasound (low frequencies)</td>
<td>Electrical Engineering, Computer Science, Information Technology</td>
<td>Basics of Electronics</td>
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<td>DDS-Signal-Generator</td>
<td>Circuit Design</td>
<td>Electrical Engineering, Computer Science, Information Technology</td>
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<td>C-Programming, Micro-Controllers</td>
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<td>Every BMW Motorbike has a standard Diagnosis Output which can be used to collect data. In additional a GPS unit will be integrated in the Logging Tool can memorize the position that can be visualized with Google earth</td>
<td>Computer Science Information Technology, System engineering</td>
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<tr>
<td>Andreas Paczynski</td>
<td>Systems Engineering</td>
<td>System Engineering + Production/Management + Simulations / Mockup of Industrial Plant</td>
<td>Electrical Engineering, Software Engineering, Mechatronics</td>
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<td></td>
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<td>Internet Technology, ERP database, PLC</td>
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<tr>
<td>Ralf Stetter / Andreas Paczynski</td>
<td>Systems Engineering / Mechanical Engineering</td>
<td>Mobile Robot Platforms, Unmanned Production Vehicles</td>
<td>Mechanical Engineering, Electrical Engineering, Software Engineering, Mechatronics</td>
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<td></td>
<td>Mechatronics (Mechanics and/or Electronics), Knowledge of C++, MatLab, LabView, ProEng</td>
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<tr>
<td>Gerd Thieleke</td>
<td>Consequences of CO2 emission trading for the development of emission quota</td>
<td>In the future CO2- Trading will be done in Europe. The mechanism of CO2- Certification and trading should be analysed and also the influence of the electrical costs of power generation</td>
<td>Mechanical Engineering, Environmental Engineering, Technology Management</td>
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<td>Energy and environmental technique</td>
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<tr>
<td>Gerd Thieleke</td>
<td>Further development of an automation system (Siemens S7- Technique) for water turbine test rig – Integration of generator features and investigations of isle net operation facilities</td>
<td>Coupling of a water turbine (Pelton) with generator in order to synchronise with the electrical net. The operation and synchronisation should be done automatically with Siemens S7- System. A special generator security relay should be integrated and implemented. The additional operation of isle net mode should be investigated.</td>
<td>Electrical Engineering, Automation Engineering</td>
<td>Programming language Automation Techniques Electrical engineering</td>
</tr>
<tr>
<td>Name</td>
<td>Project Description</td>
<td>Required Skills</td>
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<tr>
<td>Gerd Thieleke</td>
<td>Development, construction and installation of new turbocharger test rig</td>
<td>Mechanical Engineering, Environmental Engineering, Technology Management</td>
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<td>In order to calibrate flow measurement probes according to high Reynolds-numbers, we want to build up a new test rig with a radical compressor. Additionally the test rig will be extended with a combustion chamber and a turbocharger to investigate the behaviour of turbochargers.</td>
<td>Energy and environmental technique, fluid dynamik</td>
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<tr>
<td>Holger Voos</td>
<td>Development of Mobile Robotik Systems</td>
<td>Students from all engineering disciplines are welcome</td>
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<td></td>
<td>Within the framework of several research projects, mobile robots are developed and investigated in the Mobile Robotics Lab at the university. This research includes mobile ground robots, unmanned aerial vehicles as well as multi-robot systems. Students are responsible for the development of subsystems within one of these projects or the theoretical investigation of algorithms in the area of cognitive systems and image processing.</td>
<td>Programming skills in C, C++, Java or Matlab, knowledge in embedded systems / microcontrollers would be also helpful</td>
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<tr>
<td>Konrad Woellhaf</td>
<td>Code generation for µ-Controllers</td>
<td>Mechatronics, Informatics</td>
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<td></td>
<td>The programming of a µ-Controller takes a lot of time, mostly spend with the software-infrastructure and the interface. On the other hand commercial solutions are expensive. It should be possible to have an easy to use framework for simple applications.</td>
<td>Programming language C, Java</td>
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</tr>
<tr>
<td>Konrad Woellhaf</td>
<td>3D Car Simulator</td>
<td>Mechatronics, Informatics</td>
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<td>3D Animation is getting more important. The task is to build up a simple simulation model of a car and the animation in a 3D visualization. This model, starting with the kinematic than can be extended with physical effects.</td>
<td>VRML, Visual C++, MFC</td>
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<td>Knowledge of strong interest on VRML or X3D are recommended</td>
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</table>