Summer Semester 2022 – Lectures in English Language

Please note:

- The lectures are listed according to the faculty/study program that offers them. If you fulfill the
  prerequisites you can take any course from any faculty/study program.
- If you take courses from different programs and semesters, there might be conflicts in the time
  table. The time table, however, will only be announced shortly before the lecture period starts.
- The list is provisional and subject to change.
- The red numbers refer to our Campus Management System LSF and allow you to find detailed course
  descriptions, see https://www.lsf.hs-weingarten.de.
- “hrs/week” = hours per week per semester, 1 hour = 45 minutes.
- With the exception of “Technology Management and Optimization”, the lectures offered in the frame
  of Master programs are also open for advanced Bachelor students.

Electrical Engineering and Information Technology (Bachelor Program) – English taught Study Program

First Semester

4233  Electrical Engineering 1: Analysis of Electric Networks (Jobke)
5 ECTS credits

288   Mathematics 1: Analysis 1 with Exercises (Elser)
5 ECTS credits

3000  Mathematics 2: Linear Algebra with Exercises (Elser)
5 ECTS credits

5432  Mathematics Tutorial – Linear Algebra, Analysis 1 (Elser, Berens)

4341  Programming (Zeller, Drotleff)
5 ECTS credits

1850  Digital Technology (Siggelkow)
5 ECTS credits

1402  Physics Mechanics/ Physics 1 (Doderer, Sieber)
5 ECTS credits
Third Semester

**4240**  Electrical Engineering 3: Circuit analysis in the time and frequency domains (Berens)
4 hrs/week  5 ECTS credits

**5139**  Metrology 2 (Pfeil)
2 hrs/week

**1816**  Electronics, Practical Training: Linear Metrology (Reusch)
4 hrs/week

**Robotics** – Module: 5 ECTS credits

**5761**  Robotics+ Lab (Wöllhaf, Gönkler, Stehle)
4 hrs/week

**5768**  Robotics Practical
4 hrs/week

**Part of Digital Practical Module**

**1809**  Computer Technology / Practical Training (Jobke – normally Siggelkow)
2 hrs/week  2 ECTS
Module together with: 1438 Digital Technology Practical Training (2nd Sem) – 3 ECTS but possible to take as individual course

**1815**  Electronics (Ludescher)
4 hrs/week  5 ECTS credits

**1816**  Electronics Practical: Linear Metrology (Reusch)
2 hrs/week  5 ECTS credits

**1438**  Digital Technology Practical (Brümmer)
4 hrs/week  5 ECTS credits

**Computer-Aided Circuit Design 1** – Module: 5 ECTS

**7077**  Basis Practical Training Engineering 3: Programming of uC (Ludescher)
2 hrs/week

**1911**  Circuit Design Practical Training (Ludescher)
2 hrs/week

**Electrical Engineering Practical** – Module 5 ECTS

**5891**  Basic Practical Electrical Engineering 1: Basic Circuit (Bechteler – normally Siggelkow)
2 hrs/week  3 ECTS credits

**7079**  Basis Practical Course Electrical Engineering 2: Implementation and Verification (Ruf)
2 hrs/week  2 ECTS credits
Possible to take as individual course – ECTS to clarify directly with professor

Fourth Semester

**10159**  Embedded GUI (graphical user interface) Lecture and Practical (Berger)
4 hrs/week  5 ECTS credits
**Sixth Semester**

1501  **Internet Applications** Lecture and Practical (Fechter)
4 hrs/week  5 ECTS credits

**E-Mobility and Green Energy (Bachelor Program) – English Taught Study Program**

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**First Semester**

1402  **Physics Mechanics/ Physics 1** (Doderer, Sieber)
4 hrs/week  5 ECTS credits

4233  **Electrical Engineering 1: Analysis of Electric Networks** (Jobke)
4 hrs/week  5 ECTS credits

288  **Mathematics 1: Analysis 1 with Exercises** (Elser)
4 hrs/week  5 ECTS credits

3000  **Mathematics 2: Linear Algebra with Exercises** (Elser)
4 hrs/week  5 ECTS credits

5432  **Mathematics Tutorial** – Linear Algebra, Analysis 1 (Elser, Berens)

4341  **Programming** (Zeller, Drotleff)
4 hrs/week  5 ECTS credits

**Electrical Engineering Practical** – Module 5 ECTS

5891  **Basic Practical Electrical Engineering 1: Basic Circuit** (Bechteler – normally Siggelkow)
Block seminar every two weeks, start 18.03.2022  2/3 ECTS credits

7079  **Basic Practical Course Electrical Engineering 2: Implementation and Verification** (Ruf)
2 hrs/week  2/3 ECTS credits
Possible to take as individual course – ECTS to clarify directly with professor

1850  **Digital Technology** (Siggelkow)
4 hrs/week  5 ECTS credits

7805  **Physics Mechanics/ Physics 1** (Doderer/ Sieber)
4 hrs/week  5 ECTS credits

5951  **Physics 1 Exercises** (Doderer)
2 hrs/week  NO credits

**Second Semester**

2119  **Machine Construction** (Pfeffer) – (exceptionally instead of 7086 Machinery Design)
4 hrs/week  5 ECTS credits
Third Semester

**4240  Electrical Engineering 3: Circuit analysis in the time and frequency domains** (Berens)
4 hrs/week  5 ECTS credits

**Automotive Engineering: Basics, Practical and CAD** – Module: 10 ECTS

**7087  Automotive Engineering** (Reick)
4 hrs/week  5 ECTS credits

**7034  Practical Automotive Engineering** (Reick)
2 hrs/week  3 ECTS credits

**7295  Computer Aided Design (CAD)** (Reick)
2 hrs/week  2 ECTS credits

**1815  Electronics** (Ludescher)
4 hrs/week  5 ECTS credits

**Computer-Aided Circuit Design 1** – Module: 5 ECTS

**7077  Basis Practical Training Engineering 3: Programming of uC** (Ludescher)
4 hrs/week  2 ECTS credits

**1911  Circuit Design Practical Training** (Ludescher)
4 hrs/week  3 ECTS credits

**Electrical Engineering Practical** – Module 5 ECTS

**5891  Basic Practical Electrical Engineering 1: Basic Circuit** (Siggelkow)
2 hrs/week  2 ECTS credits

**7079  Basis Practical Course Electrical Engineering 2: Implementation and Verification** (Ruf)
2 hrs/week  2/3 ECTS credits

*Possible to take as individual course – ECTS to clarify directly with professor*

**5139  Metrology 2** (Pfeil)
2 hrs/week  5 ECTS credits

**Robotics** – Module: 5 ECTS credits

**5761  Robotics + Lab** (Wöllhaf, Glönkler, Stehle)
4 hrs/week

**5768  Robotics Practical**
4 hrs/week

**Fourth Semester**

**7351  Project – Seminar Scientific Work** (Siggelkow, Pfeil)
Block seminar 22.3., 29.3., 5.4., 12.4., 19.4., 26.4. 5 ECTS credits

**Sixth Semester**

**10159  Embedded GUI (graphical user interface)** Lecture and Practical (Berger)
4 hrs/week  5 ECTS credits
First Semester

10361  Mathematics 1: Analysis 1 with Exercises (Smaga) (similar to ei/ em 288)
       4 hrs/week       5 ECTS credits

10362  Mathematics 2: Linear Algebra with Exercises (Fr. Prof. Harth) (similar to ei/ em 3000)
       4 hrs/week       5 ECTS credits

10363  Mathematics Tutorial – Linear Algebra, Analysis 1 (Smaga, Sieber) (similar to ei/ em 5432)

1850   Digital Technology (Bonenberger)
       4 hrs/week       5 ECTS credits

7805   Physics Mechanics/ Physics 1 (Schlemmer, Sieber)
       4 hrs/week       5 ECTS credits

7724   Tutorial / Physics 1: Mechanics and Thermodynamics (Baumgarten, Sieber)
       2 hrs/week

7786   Chemistry (Kolacyak)
       4 hrs/week       5 ECTS credits

6886   Electrical Engineering (Vogel)
       4 hrs/week       5 ECTS credits

Computer Science, Module: 5 ECTS
198   Basic Principles of Computer Science (Eberhardt)
       4 hrs/week
1420   Practical Computer Science (Eberhardt)
       2 hrs/week

Third Semester

2111  Analysis 3: Series Expansions and Transformations/ Numerical Mathematics (Smaga)
       4 hrs/ week       5 ECTS credits

6050   Physics III – Optics and Waves and Quantum Physics (Klemt, Sieber)
       6 hrs/ week       5 ECTS credits

7409   Materials Science/ Materials (Kolacyk)
       4 hrs/ week       5 ECTS credits
Design II: Machine Design/ Machine Construction (Pfeffer) (exceptionally instead of 7086 Machinery Design)
4 hrs/ week  5 ECTS credits

1271  Practical Physics - practical training in experimental physics 1 (Eberhardt, Baumgarten, Herzer)
2 hrs/ week  ? ECTS credits – part of a module??

6051  Electronics TE2 (Vogel)
4 hrs/ week  5 ECTS credits

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**ELECTRICAL ENGINEERING AND EMBEDDED SYSTEMS (MASTER PROGRAM) – ENGLISH TAUGHT STUDY PROGRAM**

Advanced Control Systems/ Digital Control, Module: 5 ECTS

1706  Digital Control (Berger)
3 hrs/week

4876  Digital Control Lab (Berger)
2 hrs/week

1856  System Analysis and Simulation with LabView for Master (Georgi/ Hohl)
4 hrs/week and Block seminar 25.-29.07  5 ECTS credits

2333  Electrical Drives (Farkas)
4 hrs/week  5 ECTS credits

3008  Artificial Intelligence for Master (Ertel)
4 hrs/week  5 ECTS credits

3059  Lab on Artificial Intelligence for Master (Ertel)
2 hrs/week  2 ECTS credits

3311  Robotics (Wölhaf)
4 hrs/week  5 ECTS credits

4443  Automation (Ruf)
4 hrs/week  5 ECTS credits

4872  Computer Architecture (Siggelkow)
4 hrs/week  5 ECTS credits

**Embedded Computing, Module: 5 ECTS**

4874  Embedded Computing Lab (Pfeil)
2 hrs/week (SS only)

7193  Embedded Project (Brümmer)
3 hrs/week (SS only)
6807  Processes and Automation in Photovoltaics (Niedermeier, Fath)
4 hrs/week  5 ECTS

7110  Wireless Communication (Fechter)
4 hrs/week  5 ECTS

7183  Signal Processing 2 and Lab (Schulter)
4 hrs/week  5 ECTS

7421  Implementation of Closed Loop Digital Control Systems (DDC) (Altmann)
4 hrs/week  5 ECTS credits

7455  Advanced software development for Autonomous Mobile Robots (Erte, Stähle)
4 hrs/week  5 ECTS credits

7553  Robocup@Home League Tournament Seminar for Masters (Erte, Stähle)
4 hrs/week  5 ECTS credits

7781  Computer Vision (Elser)
4 hrs/week  5 ECTS credits

7790  Nearfield Communication (Pfeil)
4 hrs/week  5 ECTS credits

10280  Autonomous Driving (Grösch)
Block seminar 23.04., 30.04., 4.5., 21.5.  3 ECTS credits

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Mechatronics (Master Program) - English Taught Study Program

1856  System Analysis and Simulation with LabView for Master (Georgi, Hohl)
4 hrs/week and Block seminar 25.-29.07   5 ECTS credits

Process Interface, Module: total 8 ECTS

(1905  Process Interface Equipment (Ruf)
4 hrs/week  5 ECTS credits (WS only))

2171  Lab on Process Interface Equipment (Ruf)
2 hrs/week  3 ECTS credits  (SS only)

2233  Electrical Drives (Farkas)
4 hrs/week  5 ECTS credits

3008  Artificial Intelligence for Master (Erte)
4 hrs/week  5 ECTS credits

3059  Lab on Artificial Intelligence for Master (Erte)
2 hrs/week  2 ECTS credits

3311  **Robotics** (Wöllhaf, Stähle)
4 hrs/week  5 ECTS credits

2172  **Lab on Robotics** (Wöllhaf)
2 hrs/week  3 ECTS credits

**Embedded Computing, Module:** 10 ECTS

3124  **Embedded Computing** (Pfeil)
3 hrs/week (WS only)

4874  **Embedded Computing Lab** (Pfeil)
2 hrs/week (SS only)

7782  **Embedded Project** (Pfeil)
3 hrs/week (SS only)

4443  **Automation** (Ruf)
4 hrs/week  5 ECTS credits

**Advanced Control Systems/ Digital Control, Module:** 5 ECTS

1706  **Digital Control** (Berger)
3 hrs/week

4876  **Digital Control Lab** (Berger)
2 hrs/week

6807  **Processes and Automation in Photovoltaics** (Niedermeier, Fath)
4 hrs/week  5 ECTS

7421  **Implementation of Close Loop Digital Control Systems (DDC)** (Altmann)
4 hrs/week  5 ECTS credits

7455  **Advanced software development for Autonomous Mobile Robots** (Stähle)
4 hrs/week  5 ECTS credits

7553  **Robocup@Home League Tournament Seminar for Masters** (Stähle)
4 hrs/week  5 ECTS credits

10280  **Autonomous Driving** (Grösch)
2 hrs/week  3 ECTS credits

**PRODUCT DEVELOPMENT IN MECHANICAL ENGINEERING (MASTER PROGRAM)**

3939  **Computational** Methods in Engineering (Fr. Prof. Harth)
2 hrs/week  3 ECTS credits
**Technology Management and Optimization (Master Program)**

Lectures offered in the frame of the TM&O Master program are open for Master students only. Courses are held in English if there are students of Y-Schools (ESC Troyes).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecturer(s)</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>1858</td>
<td>System Analysis and Simulation with LabView for Master</td>
<td>Georgl</td>
<td>5</td>
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<tr>
<td>6461</td>
<td>Customer Relation Management and Optimized Distribution</td>
<td>Jäckle</td>
<td>2</td>
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<td><strong>Production Optimization 2</strong></td>
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<tr>
<td>6462</td>
<td>Product Optimization using Design of Experiments</td>
<td>Pufall*</td>
<td>3</td>
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<tr>
<td>6463</td>
<td>Production Technology and Simulation of production/ CAD and CAD Tools</td>
<td>Philippi-Beck*</td>
<td>3</td>
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<tr>
<td><strong>Process- and Cost Optimization</strong></td>
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<tr>
<td>6459</td>
<td>Production Management and Optimization</td>
<td>Schmidthöfer, Klett*</td>
<td>4</td>
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<tr>
<td>6465</td>
<td>Value-Added Process Design</td>
<td>Smets</td>
<td>2</td>
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**NEW INTERNATIONAL ACADEMY** — One or two semesters of interdisciplinary study program in English on Bachelor level (taking single/individual courses is possible) — **AS OF SS 2021**

! Students can choose any of course(s) they are interested in but in order to receive an RWU certificate for the International Academy students have to earn a minimum of 30 ECTS per semester incl. at least one practical project and one German course, as well as some compulsory and some elective courses!

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecturer(s)</th>
<th>Credits</th>
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<tbody>
<tr>
<td>10102</td>
<td>Cross cultural communication and team work</td>
<td>Hohl, Kadam</td>
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<tr>
<td></td>
<td>Block seminar</td>
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<tr>
<td>3971</td>
<td>Creative Problem Solving</td>
<td>Frank Rudolph</td>
<td>3</td>
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<tr>
<td>10105</td>
<td>Practial Sales Project Seminar</td>
<td>Thomas Fuss</td>
<td>5</td>
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<tr>
<td>10106</td>
<td>Research Methods in Business Marketing</td>
<td>Nayan Kadam</td>
<td>5</td>
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</tbody>
</table>
**4474**  New Technologies and Trends (Robert Jenke)
2 hrs/week  5 ECTS credits

**7184**  B2B Marketing & Sales (Frau Prof. B. Niersbach)
2 hrs/week  5 ECTS credits

**10107**  Entrepreneurial Leadership (Prof. Opas Piansoongnern)
2 hrs/week  3 ECTS credits

**4475 + 1473**  Systems Engineering and Practical Training (Prof. Andreas Pufall)
4 hrs/week  5 ECTS credits

**4156**  Innovation Management (Prof. Frank Ermark)
2 hrs/week  3 ECTS credits

**4906**  Business Analysis and Valuation (Frau Prof. Cornelia Neff)
2 hrs/week  3 ECTS credits

**10103**  Business German (Frau Dr. Judit Török)
(for Business German you need to have finished successfully an A2 course in German)
4 hrs/week  4 ECTS credits

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**Bachelor Level – Lectures in English language in various study fields**

**6598**  International Comparison of Health Care Systems (Kern) (Health Economics GO)
2 hrs/week  2 ECTS credits

**1825**  Operating Systems (Eggendorfer) (Applied Computer Science – AI)
4 hrs/week  5 ECTS credits

**6763**  User Experience Design (Ehret, Gräf) (Media Design, MD) – optional in English
6 hrs/week  10 ECTS credits

**7149**  Interaction Design (Ehret, Gast) (Media Design, MD) – optional in English
4 hrs/week  5 ECTS credits

**7217**  Game Design (Scherzer) (Media Design, MD) – optional in English
4 hrs/week  5 ECTS credits

**7667**  Designing AR/VR Experiences (Lauterbach) (Media Design, MD) – optional in English
4 hrs/week  5 ECTS credits

**7214**  Motion Design (Lauterbach) (Media Design, MD) – optional in English
8 hrs/week  10 ECTS credits
**7090**  Autonomous Mobile Robots (Schneider, Stähle) (AI)
4 hrs/week  5 ECTS credits

**8965**  Computer Aided Design CAD (Baumgart) (Technology Management – TM)
2 hrs/week  2 ECTS credits

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**MASTER LEVEL – Lectures in English language in various study fields**

**3311**  Robotics (Wöllhaf) (Computer Science – IN)
4 hrs/week  5 ECTS credits

**5812**  Machine learning for Intelligent Systems (Schneider)
4 hrs/week  5 ECTS credits

**6279**  Computer Graphics for Master (Scherzer) (Computer Science – IN) – optional in English
4hrs/week  5 ECTS credits

**6768**  Game development for Master (Scherzer) (Computer Science – IN) – optional in English
4hrs/week  5 ECTS credits

**7532**  Shader Programming (Scherzer) (Computer Science – IN) – optional in English
4 hrs/ week  5 ECTS credits

**7183**  Signal Processing 2 and Lab (Schulter)(Computer Science – IN)
4 hrs/ week  5 ECTS credits

**7781**  Computer Vision (Elser) (Computer Science – IN)
4 hrs/ week  5 ECTS credits

**7435**  Software Security (Eggendorfer) (Computer Science – IN)
4 hrs/ week  5 ECTS credits
Blended-Learning-Course with Presence Phases (please check LSF!)

**3939**  Computational Methods in Engineering (Harth) (Product Dev. in Mech. Engineering – PEM)
2 hrs/week  3 ECTS credits

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**LANGUAGE LECTURES AND INTERCULTURAL SEMINARS (CLIC)**

**German as a foreign language = Deutsch als Fremdsprache (DaF)**

**4382**  DAF – Deutsch als Fremdsprache A1+
4 hrs/week  4 ECTS credits
Attention: The course starts with an intensive program from March 7 – 11, 2022, 8hrs

4634  DAF – Deutsch als Fremdsprache A2
4 hrs/week  4 ECTS credits
Attention: The course starts with an intensive program from March 7 – 11, 2022, 8hrs

4630  DAF – Deutsch als Fremdsprache B1+
Attention: The course starts with an intensive program from March 7 – 11, 2022, 8hrs
4 hrs/week  4 ECTS credits

4631  DAF – Deutsch als Fremdsprache B2
Attention: The course starts with an intensive program from March 7 – 11, 2022, 8hrs
4 hrs/week  4 ECTS credits

4632  DAF – Deutsch als Fremdsprache C1.1
3 hrs/week  2 ECTS credits
Attention: NO intensive course! Starts on Wed. March 16 with regular weekly courses you need to do the placement test, and if you are indeed at C1 level you could - upon discussing with us - still participate in the B2 Intensive Course as a refresher and then start your C1 course with the beginning of the regular lectures

5144  DaF – Presentation and Documentation / Präsentation und Dokumentation
2 hrs/week  2 ECTS credits

**English**
Several Professional English 1, B2 courses by study program e.g.
xxxx please check online for courses available shortly before the begin of the semester (LSF)
2 hrs/week  2 ECTS credits

Several Professional English 2, B2 courses by study program e.g.
xxxx – please check online for courses available shortly before the begin of the semester (LSF)
2 hrs/week  2 ECTS credits

4408  Improve your speaking skills B2 (Hopkins)
2 hrs/week  2 ECTS credits

10090  English for Specific Purposes: Digital Communication and Presentation Skills (Dr. Fiona Zink)
2 hrs/week  2 ECTS credits

10194  English for Specific Purposes: Student EQ Edge – Emotional Intelligence and your success (Dr. David Hopkins)
2 hrs/week  2 ECTS credits

10340  Developing the skills of cultural awareness, fluency and intercultural competencies in an English-speaking context (Ironside, Duncan)
2 hrs/week  2 ECTS credits

10070  English for Specific Purposes: Student EQ Edge – Propulsion Systems – Technics, Sales and
Service (Uwe Hahn)
2 hrs/week  2 ECTS credits

55    English for Specific Purposes: Project Management (Bryan Conner)
2 hrs/week  2 ECTS credits

**Seminars on intercultural and other topics**

5149    Working in International Scientific Project Teams (Rudolph)
Block Seminar  1 ECTS credit – 27.03., 10.04., 17.04., 09:00 – 12:15
If you want to participate, please let me know! This is normally a Master Course and we need to check availabilities

7502    Intercultural Communications – Talking effectively to the English-speaking world (Ironske)
Block Seminar  1 ECTS credit
Please check LSF for exact dates shortly before semester begins

3971    Creative Problem Solving (Frank Rudolph)
2 hrs/week  3 ECTS credits

**Other language courses at various levels are offered**
Please check LSF for further details: French, Italian, Spanish, Japanese, (2-3 hours/week, 2-3 ECTS credits)

6302    Chinese (Yuan Yuan Wang)
2 hrs/week  3 ECTS credits