



The 3<sup>rd</sup> IDAACS Symposium Wireless Systems within the IEEE International Conferences on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications

26-27 September 2016  
Offenburg, Germany

Organized by



Institute of Reliable Embedded Systems and Communication Electronics (ivESK)

Offenburg University of Applied Sciences  
Germany

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## **Message from the IDAACS'16 Co-Chairmen**

It's our pleasure to invite all of you to participate in the 2016 IEEE 3rd Symposium on Wireless Systems within the International Conference on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS), <http://idaacs.hs-offenburg.de/>, which will be held in Offenburg, Germany, 26 and 27 September, 2016.

The main goal of the IDAACS conferences is to provide a forum for high quality presentations (and corresponding papers) on the state-of the-art Theory, Technology and Applications of Intelligent Data Acquisition and Advanced Computer Systems as used in different areas. A family of IDAACS Workshops (Conferences) has already been created since the IEEE 1<sup>st</sup> IDAACS Workshop was held in Foros, Crimea (Ukraine), July 1-4, 2001. After that the following IDAACS Workshops and Conferences were held in Lviv (Ukraine), 2003, Sofia (Bulgaria), 2005, Dortmund (Germany), 2007, Rende (Cosenza, Italy), 2009, Prague (Czech Republic), 2011, Berlin (Germany), 2013, and Warsaw (Poland), 2015.

Based on the long-standing success of the Special Stream Wireless within the IDAACS conference, already two IDAACS Symposia on Wireless Systems (IDAACS-SWS) took place in Offenburg, Germany, in September 2012 and in September 2014, respectively. The Symposium addresses researchers, industry professionals and academics interested in the latest development and design of wireless systems, networks and applications.

We would like to sincerely thank all the reviewers for their contribution to the quality and success of this Symposium. As a result of the reviewing process the 24 papers were accepted and published. Also, a plenary session was provided with two keynote speakers: Prof. Dr. Erich Zielinski from Alcatel Lucent Foundation for Communication Research and Dr. Christoph Rathfelder from Hahn-Schickard Association of Applied Research. We appreciate very much their contribution to the IDAACS'16 Symposium.

Finally we would like to thank all our friends from the previous IDAACS activities as well as other researchers for joining us in Offenburg to discuss latest achievements in the fields of Wireless Systems!

Enjoy attending the IDAACS-SWS'16 symposium and the charm of the Offenburg Hochschule as well as the attraction and spirit of Offenburg and the Ortenau region!

**Dear participants of the  
3<sup>rd</sup> IDAACS Symposium Wireless Systems 2016**

It is my pleasure to welcome you at the Department of Electrical Engineering and Information Technology of Offenburg University of Applied Sciences. I am glad that the 3<sup>rd</sup> IDAACS Symposium Wireless Systems 2016 is staged in Offenburg University, again.

I hope that the nice ambience, the university is surrounded by, the high level of performance in our laboratories and the many kind people who work and study here inspire you to pass a very interesting and successful workshop. I am sure that every attendant will give his best to realize these goals.

Now it's your turn to discuss about the latest insight, theory and methods in the field of Wireless Systems and their applications for improving the state of the art in this area, for deepening your knowledge and for establishing new and refreshing existing personal contacts.

Finally I would like to wish you a pleasant stay in Offenburg and its university.

With kind regards



Prof. Dr.-Ing. habil. Uwe Nuß  
Dean of the Department of Electrical Engineering and  
Information Technology of Offenburg University of Applied Sciences



## **Committees**

### **Honorary Chairman**

Anatoly Sachenko, Ukraine

### **Symposium Chairmen**

Volodymyr Brovko, Germany

Evren Eren, Germany

Uwe Grossmann, Germany

Axel Sikora, Germany

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Ingo Kunold, Dortmund, Germany  
Mykhailo Klymash, Lviv, Ukraine  
Ivan Trotsishin, Odessa, Ukraine

### **Local Organization Committee**

Axel Sikora, Offenburg, Germany  
Diane Weiss, Offenburg, Germany  
Sebastian Jubin, Offenburg, Germany  
Pavlo Bykovyy, Ukraine

# Program Day 1

26.9.2019					Start	End
Registration	Is located close to the entrance of building D			1:00	9:30	10:30
Welcome	All sessions in D 015					
	Welcome	Prof. Dr. Axel Sikora	Offenburg University of Applied Sciences, Germany	0:10	10:30	10:40
	Welcome from the Rectorate	Prof. Dr. Andreas Christ, Vice-Rector Research	Offenburg University of Applied Sciences, Germany	0:10	10:40	10:50
Session 1	Keynotes	Chair: Prof. Dr. Axel Sikora				
	Industrial Communication for Factories	Prof. Dr. Erich Zielinski	Alcatel-Lucent Foundation for Communications Research, Stuttgart	0:45	10:50	11:35
	Generic Sensor Interface Description Language for Wireless Sensor Communication	Dr. Christoph Rathfelder	Hahn-Schickard Association of Applied Research, Germany	0:45	11:35	12:20
Lunch Break	University Restaurant			0:55	12:20	13:15
Session 2	Simulation	Chair : Prof. Dr. Erich Zielinski				
	Accelerated Buffer Overflow Simulation in Self-Similar Queuing Networks with Long-Range Dependent Processes and Finite Buffer Capacity	Izabella Lokshina, Thomas Wendt, Cees Lanting	SUNY Oneonta USA, Offenburg University of Applied Sciences Germany, CSEM Switzerland	0:20	13:15	13:35
	Evaluation of MCDM-based Handover Decision Algorithms in OMNeT++	Atheer Al-Rubaye	Communication Networks Group, Technische Universit`at Ilmenau, Germany	0:20	13:35	13:55
	NS3 Simulation studies for optimized neighbor discovery in 6LoWPAN networks	Raghavendra Prasad S G	Department of Information Science and Engineering, R V College of Engineering, Bengaluru, India	0:20	13:55	14:15
	Integration and Analysis of an Extended IEEE 802.15.4 Modules with SmartMAC and Wake-on-Radio Functions into the Network Simulator NS3	Joseena M Jose	Institute of Reliable Embedded Systems and Communication Electronics; Offenburg University of Applied Sciences, Germany	0:20	14:15	14:35
Coffee Break	Foyer of building D			0:25	14:35	15:00
Session 3	Localization 1	Chair: Dr. Christoph Rathfelder				
	Automatic Signal Strength Map Construction in Indoor Positioning System Based on Round Trip Time of Flight Measurements and Inertial Navigation	Aleksandr Galov	Petrozavodsk State University, Petrozavodsk, Russian Federation	0:20	15:00	15:20
	Non Disjoint Set Covers Approach for Wireless Sensor Networks Lifetime Optimization	Yousif E.E. Ahmed	Dept of Computer Engineering University of Gezira, Sudan	0:20	15:20	15:40
	The Multi-Mode Inertial Tracking System for Unconstrained Indoor Positioning	Aleksandr Mikov	Petrozavodsk State University, Petrozavodsk, Russian Federation	0:20	15:40	16:00

Bus Transfer to Strasbourg	1:00	16:00	17:00
City Tour	1:30	17:00	18:30
Bus Transfer to Offenburg	1:00	18:30	19:30
Dinner at Hotel Sonne, Hauptstraße 94, 77652 Offenburg		19:30	

## Program Day 2

27.9.2016	All sessions in D 015				Start	End
Session 4	Energy	Chair: Prof. Dr. Alex Moschevikin				
	High Q Impedance Matching for RF Energy Harvesting Applications	Christian Merz	Deggendorf Institute of Technology, Germany	0:20	9:00	9:20
	Nano-sensor Capacity and SNR Calculation According to Transmit Power Estimation for Body-Centric Nano-Communications	Mustafa Alper Akkaş	Pamukkale University, Turkey	0:20	9:20	9:40
	Investigations On The Performance Of Bluetooth Enabled Mesh Networking	Artem Yushev	Institute of Reliable Embedded Systems and Communication Electronics; Offenburg University of Applied Sciences, Germany	0:20	9:40	10:00
	Advertising Power Consumption of Bluetooth Low Energy Systems	Raphael Schrader, Claus Fühner	Fachhochschule Dortmund Fachbereich Informatik	0:20	10:00	10:20
Coffee Break	Foyer of building D			0:25	10:20	10:45
Session 5	Infrastructure & Integration	Chair: Prof. Dr. Evren Eren				
	Backhaul Infrastructures in Building Automation Systems: Wired or Wireless?	Selahattin Gökceli	Department of Electronics and Communication Engineering Istanbul Technical University, Istanbul, Turkey	0:20	10:45	11:05
	IPv6 over LoRaWAN™	Patrick Weber	STACKFORCE GmbH, Germany	0:20	11:05	11:25
	Radio module for fast real-time control of inverse triple pendulum	Roman Čečil	University of West Bohemia, Czech Republic	0:20	11:25	11:45
Session 6	Localization 2	Chair: Prof. Dr. Uwe Grossmann				
	Smart Space Deployment in Wireless and Mobile Settings of the Internet of Things	Dmitry G. Korzun	Petrozavodsk State University (PetrSU) Petrozavodsk, Russia	0:20	11:45	12:05
	Reliable and Low-cost Indoor Localization Based on Bluetooth Low Energy	Nizam Kuxdorf-Alkirata	School of Electrical, Information and Media Engineering, University of Wuppertal, Germany	0:20	12:05	12:25
	Investigations on Passive Channel Impulse Response of Ultra Wide Band Signals For Monitoring and Safety Application	Alex Moschevikin	Petrozavodsk State University, Petrozavodsk, Russian Federation	0:20	12:25	12:45
Lunch Break	University restaurant			0:35	12:45	13:20
Lab Visits				0:30	13:20	13:50
Session 7	Various Topics	Chair: Prof. Dr. Volodymyr Brovko				
	Transformation between XML and CBOR for network load reduction	Thomas Rix	DECOIT GmbH, Germany	0:20	13:50	14:10



	Hierarchical Dynamic Index NAT as a Mobility Solution	Atheer Al-Rubaye	Communication Networks Group Technische Universität Ilmenau, Germany	0:20	14:10	14:30
	A Novel Split Radix Fast Fourier Transform Design for an Adaptive and Scalable Implementation	Muhammad Adeel Ahmed Pasha	Department of Electrical Engineering, SBA School of Science Engineering, Lahore University of Management Sciences, Lahore, Pakistan	0:20	14:30	14:50
	Modeling The Wireless Sensor Networks Using The Error Control Scheme	Orest Ivakhiv	Lviv Polytechnic National University, Ukraine	0:20	14:50	15:10
	Performance Investigation Of 6Lo With RPL Mesh Networking For Home And Building Automation	Jubin Sebastian E	Institute of Reliable Embedded Systems and Communication Electronics Offenburg University of Applied Sciences, Germany	0:20	15:10	15:30
	Prototype of a Sensor Device for Learning Environments	Volodymyr Brovko	Hochschule für Technik und Wirtschaft Berlin, University of Applied Sciences, Berlin, Germany	0:20	15:30	15:50
	Efficient Encoding and Transmission of Monitoring Data in Information efficient Wireless Network	Orest Ivakhiv	Lviv Polytechnic National University, Ukraine	0:20	15:50	16:10
Wrap Up				0:10	16:10	16:20

## **Registration**

The Registration desk is open at the University Campus, Badstrasse 24, 77652 Offenburg Foyer of building D

Monday, September 26 from 9:30 to 10:30

## **Internet Access**

**IDAACS 2016** will provide free Wi-Fi Internet access for every participant with their own laptop.

Users might register to the unsecured WLAN “fho-weblogin”, then start any browser and open any unencrypted web-page. This request will be redirected to a captive portal, where workshop participants might use the following credentials:

User: idaacs

Password: idaacs0916

## **IDAACS 2016 Venue**

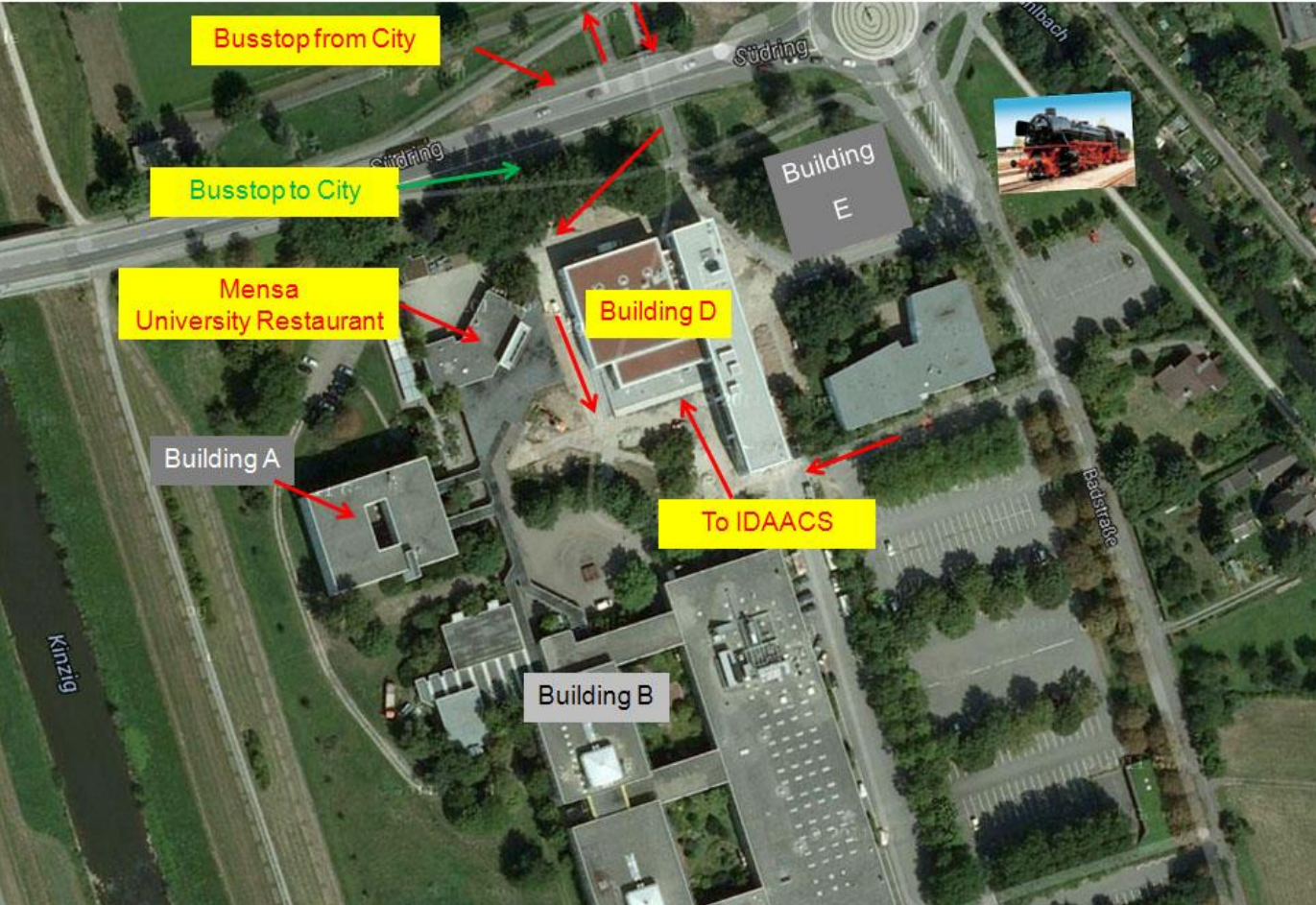
### **University Campus (Badstrasse 24, 77652 Offenburg)**

Founded in 1964, the Offenburg University of Applied Sciences quickly established itself as an impressive and high performance educational institution. Originally founded as the "National School of Engineering", our University has developed into a thriving community, with more than 4,500 students on two different campuses. It offers both Bachelor's and Master's degrees in four different departments: Business Administration and Industrial Engineering, Electrical Engineering and Information Technology, Mechanical Engineering and Process Engineering, and Media and Information.

Offenburg University of Applied Sciences prides itself on the international orientation of its programs. In 1998, the University was one of the first institutions of higher education in Germany to introduce international Master's Degree Programs through its Graduate School. Today, five different programs are offered, all of which cater especially to international students, whom comprise twelve percent of our student body. Additionally, the International Office maintains active exchange programs with more than 50 partner universities worldwide, giving students more opportunities at study and internships abroad. Due to the proximity with the French border, there are also double degree programs with prestigious French universities.

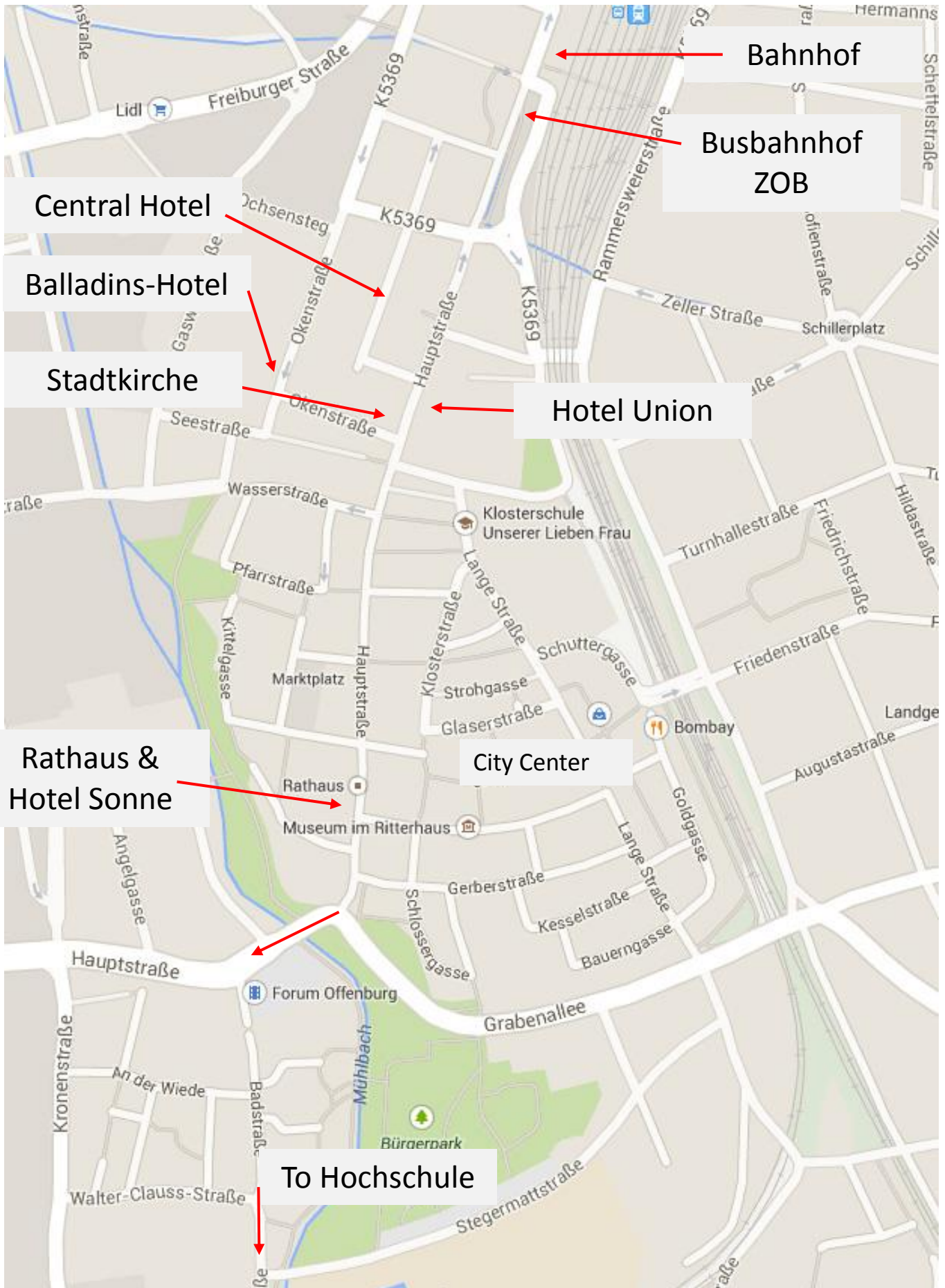
The university campus is around 1.3 km south of the city center. It can be walked (although not very scenic ....). Alternatively, bus line can be taken. Best choice from city center and central bus station (ZOB) are bus lines S8 and S10 (see below).

Main campus of University of Applied Sciences Offenburg  
Badstrasse 24  
77652 Offenburg



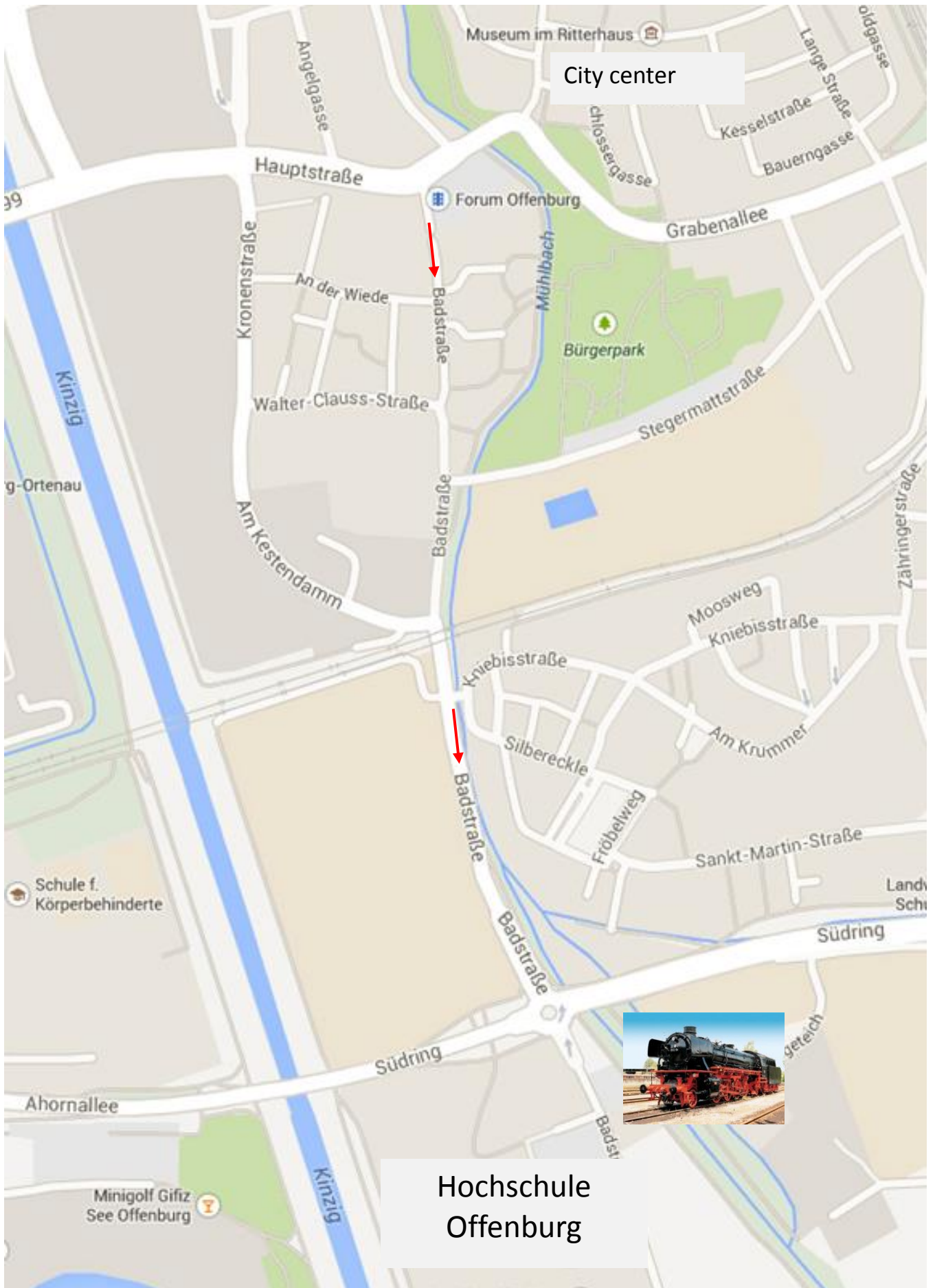
# Maps of Offenburg

## City Center





# From City Center to Hochschule





# Bus Connections S8 from Offenburg ZOB or City Center to University

## valid from Mon till Fri



**Tagmess - Oberrheinisches Pflege- Therapiezentrum - Bahnhof/ZOB - Rathaus - Kreisschulzentrum - Hochschule - Uffhofen - Hildboltsweier**



Offenburger Stadtbus Schlüsselbus GmbH		Montag - Freitag																	
<b>VERKEHRSHINWEIS</b>																			
Offenburg An der Tagmess	ab	7.10	7.40	8.00	8.20	9.00	9.20	10.00	10.20	11.00	11.20	12.00	12.20	13.00	13.20	14.00	14.20	15.00	15.20
- Oberrh. Pflege- Therapiezentrum		7.11	7.41	8.01	8.21	9.01	9.21	10.01	10.21	11.01	11.21	12.01	12.21	13.01	13.21	14.01	14.21	15.01	15.21
- Johann-Sebastian-Bach-Straße		7.12	7.42	8.02	8.22	9.02	9.22	10.02	10.22	11.02	11.22	12.02	12.22	13.02	13.22	14.02	14.22	15.02	15.22
- Haydnstraße		7.13	7.43	8.03	8.23	9.03	9.23	10.03	10.23	11.03	11.23	12.03	12.23	13.03	13.23	14.03	14.23	15.03	15.23
- Zur Lindenhöhe		7.14	7.44	8.04	8.24	9.04	9.24	10.04	10.24	11.04	11.24	12.04	12.24	13.04	13.24	14.04	14.24	15.04	15.24
- Auferstehungskirche		7.15	7.45	8.05	8.25	9.05	9.25	10.05	10.25	11.05	11.25	12.05	12.25	13.05	13.25	14.05	14.25	15.05	15.25
- Zeller Straße		7.16	7.46	8.06	8.26	9.06	9.26	10.06	10.26	11.06	11.26	12.06	12.26	13.06	13.26	14.06	14.26	15.06	15.26
- Schillergymnasium		7.17	7.47	8.07	8.27	9.07	9.27	10.07	10.27	11.07	11.27	12.07	12.27	13.07	13.27	14.07	14.27	15.07	15.27
- Turnhallestraße		7.18	7.48	8.08	8.28	9.08	9.28	10.08	10.28	11.08	11.28	12.08	12.28	13.08	13.28	14.08	14.28	15.08	15.28
- Bahnhof / ZOB (Bussteig 3)	an	7.22	7.52	8.12	8.32	9.12	9.32	10.12	10.32	11.12	11.32	12.12	12.32	13.12	13.32	14.12	14.32	15.12	15.32
- Bahnhof / ZOB (Bussteig 3)	ab	7.25	7.55	8.15	8.35	9.15	9.35	10.15	10.35	11.15	11.35	12.15	12.35	13.15	13.35	14.15	14.35	15.15	15.35
- Stadtkirche		7.26	7.56	8.16	8.36	9.16	9.36	10.16	10.36	11.16	11.36	12.16	12.36	13.16	13.36	14.16	14.36	15.16	15.36
- Rathaus		7.30	8.00	8.20	8.40	9.20	9.40	10.20	10.40	11.20	11.40	12.20	12.40	13.20	13.40	14.20	14.40	15.20	15.40
- Zähringerstraße		7.32	8.02	8.22	8.42	9.22	9.42	10.22	10.42	11.22	11.42	12.22	12.42	13.22	13.42	14.22	14.42	15.22	15.42
- Kreisschulzentrum		7.33	8.03	8.23	8.43	9.23	9.43	10.23	10.43	11.23	11.43	12.23	12.43	13.23	13.43	14.23	14.43	15.23	15.43
- Hochschule		7.35	8.05	8.25	8.45	9.25	9.45	10.25	10.45	11.25	11.45	12.25	12.45	13.25	13.45	14.25	14.45	15.25	15.45
- Schumacherbrücke		7.36	8.06	8.26	8.46	9.26	9.46	10.26	10.46	11.26	11.46	12.26	12.46	13.26	13.46	14.26	14.46	15.26	15.46
Uffhofen Platanenallee Nord		7.37	8.07	8.27	8.47	9.27	9.47	10.27	10.47	11.27	11.47	12.27	12.47	13.27	13.47	14.27	14.47	15.27	15.47
Hildboltsweier Pappelweg		7.38	8.08	8.28	8.48	9.28	9.48	10.28	10.48	11.28	11.48	12.28	12.48	13.28	13.48	14.28	14.48	15.28	15.48
- Oberörtle		7.39	8.09	8.29	8.49	9.29	9.49	10.29	10.49	11.29	11.49	12.29	12.49	13.29	13.49	14.29	14.49	15.29	15.49
- Königswaldstraße		7.40	8.10	8.30	8.50	9.30	9.50	10.30	10.50	11.30	11.50	12.30	12.50	13.30	13.50	14.30	14.50	15.30	15.50
- Stockfeld		7.41	8.11	8.31	8.51	9.31	9.51	10.31	10.51	11.31	11.51	12.31	12.51	13.31	13.51	14.31	14.51	15.31	15.51
- Kleingärten	an	7.42	8.12	8.32	8.52	9.32	9.52	10.32	10.52	11.32	11.52	12.32	12.52	13.32	13.52	14.32	14.52	15.32	15.52

23 = am Bahnhof/ZOB Anschluß zum Schulzentrum Nord Linie S 5

# Bus Connections S8 from University to City Center or Offenburg ZOB



**Hildboltsweier - Uffhofen - Hochschule - Kreisschulzentrum - Rathaus - Bahnhof/ZOB - Tagmess - Oberrheinisches Pflege- und Therapiezentrum**



Offenburger Stadtbus Schlüsselbus GmbH		Montag - Freitag																	
<b>VERKEHRSHINWEIS</b>																			
Hildboltsweier Josefskirche	ab		7.05																
- Kleingärten	ab	6.35	7.07	7.35	7.55	8.35	8.55	9.35	9.55	10.35	10.55	11.35	11.55	12.35	12.55	13.35	13.55	14.35	14.55
- Stockfeld		6.36	7.08	7.36	7.56	8.36	8.56	9.36	9.56	10.36	10.56	11.36	11.56	12.36	12.56	13.36	13.56	14.36	14.56
- Königswaldstraße		6.37	7.09	7.37	7.57	8.37	8.57	9.37	9.57	10.37	10.57	11.37	11.57	12.37	12.57	13.37	13.57	14.37	14.57
- Oberörtle		6.38	7.10	7.38	7.58	8.38	8.58	9.38	9.58	10.38	10.58	11.38	11.58	12.38	12.58	13.38	13.58	14.38	14.58
Uffhofen Platanenallee Nord		6.39	7.11	7.39	7.59	8.39	8.59	9.39	9.59	10.39	10.59	11.39	11.59	12.39	12.59	13.39	13.59	14.39	14.59
Offenburg Schumacherbrücke		6.40	7.12	7.40	8.00	8.40	9.00	9.40	10.00	10.40	11.00	11.40	12.00	12.40	13.00	13.40	14.00	14.40	15.00
- Hochschule		6.41	7.13	7.41	8.01	8.41	9.01	9.41	10.01	10.41	11.01	11.41	12.01	12.41	13.01	13.41	14.01	14.41	15.01
- Kreisschulzentrum		6.42	7.14	7.42	8.02	8.42	9.02	9.42	10.02	10.42	11.02	11.42	12.02	12.42	13.02	13.42	14.02	14.42	15.02
- Zähringerstraße		6.44	7.16	7.44	8.04	8.44	9.04	9.44	10.04	10.44	11.04	11.44	12.04	12.44	13.04	13.44	14.04	14.44	15.04
- Rathaus		6.47	7.19	7.47	8.07	8.47	9.07	9.47	10.07	10.47	11.07	11.47	12.07	12.47	13.10	13.47	14.07	14.47	15.07
- Stadtkirche		6.50	7.22	7.50	8.10	8.50	9.10	9.50	10.10	10.50	11.10	11.50	12.10	12.50	13.13	13.50	14.10	14.50	15.10
- Bahnhof / ZOB (Bussteig 7)	an	6.52	7.24	7.52	8.12	8.52	9.12	9.52	10.12	10.52	11.12	11.52	12.12	12.52	13.14	13.52	14.12	14.52	15.12
- Bahnhof / ZOB (Bussteig 7)	ab	6.55	7.27	7.55	8.15	8.55	9.15	9.55	10.15	10.55	11.15	11.55	12.15	12.55	13.15	13.55	14.15	14.55	15.15
- Luisenstraße		6.57	7.29	7.57	8.17	8.57	9.17	9.57	10.17	10.57	11.17	11.57	12.17	12.57	13.17	13.57	14.17	14.57	15.17
- Schillergymnasium		6.58	7.30	7.58	8.18	8.58	9.18	9.58	10.18	10.58	11.18	11.58	12.18	12.58	13.18	13.58	14.18	14.58	15.18
- Laubengasse		6.59	7.31	7.59	8.19	8.59	9.19	9.59	10.19	10.59	11.19	11.59	12.19	12.59	13.19	13.59	14.19	14.59	15.19
- An der Tagmess		7.00	7.32	8.00	8.20	9.00	9.20	10.00	10.20	11.00	11.20	12.00	12.20	13.00	13.20	14.00	14.20	15.00	15.20
- Oberrh. Pflege- Therapiezentrum		7.01	7.33	8.01	8.21	9.01	9.21	10.01	10.21	11.01	11.21	12.01	12.21	13.01	13.21	14.01	14.21	15.01	15.21
- Johann-Sebastian-Bach-Straße		7.02	7.34	8.02	8.22	9.02	9.22	10.02	10.22	11.02	11.22	12.02	12.22	13.02	13.22	14.02	14.22	15.02	15.22
- Haydnstraße	an	7.03	7.35	8.03	8.23	9.03	9.23	10.03	10.23	11.03	11.23	12.03	12.23	13.03	13.23	14.03	14.23	15.03	15.23

Offenburger Stadtbus Schlüsselbus GmbH		Montag - Freitag																	
Hildboltsweier Kleingärten	ab	15.35	15.55	16.35	16.55	17.35	17.55	18.35	18.55										
- Stockfeld		15.36	15.56	16.36	16.56	17.36	17.56	18.36	18.56										
- Königswaldstraße		15.37	15.57	16.37	16.57	17.37	17.57	18.37	18.57										
- Oberörtle		15.38	15.58	16.38	16.58	17.38	17.58	18.38	18.58										
Uffhofen Platanenallee Nord		15.39	15.59	16.39	16.59	17.39	17.59	18.39	18.59										
Offenburg Schumacherbrücke		15.40	16.00	16.40	17.00	17.40	18.00	18.40	19.00										
- Hochschule		15.41	16.01	16.41	17.01	17.41	18.01	18.41	19.01										
- Kreisschulzentrum		15.42	16.02	16.42	17.02	17.42	18.02	18.42	19.02										
- Zähringerstraße		15.44	16.04	16.44	17.04	17.44	18.04	18.44	19.04										
- Rathaus		15.47	16.07	16.47	17.07	17.47	18.07	18.47	19.07										
- Stadtkirche		15.50	16.10	16.50	17.10	17.50	18.10	18.50	19.10										
- Bahnhof / ZOB (Bussteig 7)	an	15.52	16.12	16.52	17.12	17.52	18.12	18.52	19.12										
- Bahnhof / ZOB (Bussteig 7)	ab	15.55	16.15	16.55	17.15	17.55	18.15	18.55	19.15										
- Luisenstraße		15.57																	

## Bus Connections S10 from Offenburg City Center to University valid from Mon till Fri

# S 10



### Offenburg Bahnhof / ZOB - Schulzentrum Nord oder Kreisschulzentrum - Hochschule

<b>SWEG</b>		Montag - Freitag															
LINIE		S 5	S10	S 5	S 8	R 2	R 9	R 9	S10	S 8	S 5	S 8	S 5	S 8	S 8	S 8	S 8
<b>VERKEHRSHINWEIS</b>																	
Offenburg Bahnhof / ZOB (Bussteig 6)	ab		<b>S</b>		<b>23</b>	<b>16</b>	<b>SI</b>	<b>SI</b>	<b>S</b>								
Offenburg Bahnhof / ZOB (Bussteig 5)	ab	7.02		7.22									8.02		8.22		
Offenburg Bahnhof / ZOB (Bussteig 3)	ab		7.20		7.25				7.30	7.55			8.15		8.35	9.15	9.35
- Stadtkirche			7.21		7.26				7.31	7.56			8.16		8.36	9.16	9.36
- Rathaus			7.25		7.30				7.35	8.00			8.20		8.40	9.20	9.40
- Schulzentrum Nord	an	7.05		7.25		7.30	7.31	7.33					8.05		8.25		
- Kreisschulzentrum			7.28		7.33				7.38	8.03			8.23		8.43	9.23	9.43
- Hochschule	an		7.30		7.35				7.40	8.05			8.25		8.45	9.25	9.45

**16** = an Schultagen bis OG Schulzentrum Nord  
**S** = nur an Schultagen  
**SI** = verkehrt nur an Schultagen und bis Offenburg Schulzentrum Nord  
**23** = am Bahnhof/ZOB Anschluß zum Schulzentrum Nord Linie S 5

**Gültig nur an Schultagen**

## Bus Connections S10 from University to Offenburg City Center

# S 10



### Hochschule - Kreisschulzentrum oder Schulzentrum Nord - Offenburg Bahnhof / ZOB

<b>SWEG</b>		Montag - Freitag																	
LINIE		S 8	S 8	S 8	S10	S 5	S 8	301	S10	S 8	301	S10	S 5	S 8	S 8	S 5	S 8	S 8	S 8
<b>VERKEHRSHINWEIS</b>																			
Offenburg Hochschule	ab	11.01	11.41	12.01	<b>S</b>	<b>FA</b>		12.41		<b>S FA</b>	<b>S</b>		13.01						
- Kreisschulzentrum		11.02	11.42	12.02	12.10		12.42	12.53	12.55	13.02				13.10	13.13	13.47		13.41	14.01
- Schulzentrum Nord	ab					12.47								13.10	13.13	13.47		13.41	14.01
- Rathaus		11.07	11.47	12.07	12.15	12.58	12.47		13.00	13.10				13.58	13.47	14.07	14.58	14.47	15.07
- Stadtkirche		11.10	11.50	12.10	12.18	12.54	12.50	13.06	13.03	13.13				13.54	13.50	14.10	14.54	14.50	15.10
- Bahnhof / ZOB (Bussteig 3)	an				12.20	12.50			13.05					13.50			14.50		
- Bahnhof / ZOB (Bussteig 4)	an							13.03											
- Bahnhof / ZOB (Bussteig 7)	an	11.12	11.52	12.12			12.52			13.14								14.52	15.12
Uffhofen Strandbad						13.02							13.21	14.02			15.02		
- Platanenallee Süd						13.03							13.22	14.03			15.03		
- Stadtteilzentrum						13.04							13.23	14.04			15.04		
- Platanenallee Nord													13.26						
Hildboltsweiler Pappelweg													13.27						
- Oberörtle													13.28						
- Königswaldstraße													13.29						
- Stockfeld													13.30						
- Kleingärten	an												13.31						

**FA** = Haltestellen werden in anderer Reihenfolge angefahren **S** = nur an Schultagen